STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF ADJUDICATIONS

IN THE MATTER OF	:	*PAMS NO. 200701287*
IROQUOIS PIPELINE OPERATING COMPANY	:	*MARCH 12, 2009*

PROPOSED FINAL DECISION

Iroquois Pipeline Operating Company (the applicant) has applied to the Department of Environmental Protection for a New Source Review permit to construct and operate a 10,310-horsepower, simple-cycle, natural gas-fueled combustion turbine to be located at 78 High Meadow Road, in Brookfield. The DEP issued a tentative determination to approve the permit application and staff has prepared a revised draft permit that would authorize the proposed activities.

The parties to this proceeding are the applicant and DEP staff. A hearing was held on February 10, 2009 in Brookfield for the purpose of receiving public comment on the application. Four members of the public provided comments on the applicant's proposal that focused on concerns over the proximity of the site to a public middle school, the environmental impacts of the turbine currently operating at the facility in combination with the proposed turbine, and the possibility that additional sources of air pollution are proposed for the site.

The parties have filed the attached Agreed Draft Decision for my review and consideration. Regs., Conn. State Agencies §22a-3a-6(1)(3)(A). I have reviewed this submission, the record, and the public comments presented during the hearing. Following this review, and after giving due consideration to the facts and relevant law in this matter, I find that the application complies with the applicable statutes and regulations. General Statutes §22a-174; Regs., Conn. State Agencies §§22a-174-2 and 22a-174-3. The Agreed Draft Decision satisfactorily conveys the factual findings and legal conclusions necessary to support my conclusion. I therefore adopt the Agreed Draft Decision as my proposed final decision.

The applicant has demonstrated that the construction and operation of the turbine would comply with permit terms and conditions and would not adversely impact air quality. I therefore recommend issuance of the revised draft permit appended to the Agreed Draft Decision as Exhibit A.

Jean F. Dellamarggio
Hearing Officer

Note: Clerical correction. Page 1, Paragraph 3, Line 6, references to Regs., Conn. State Agencies §§22a-174-2 and 22a-174-3 are revised to read §§22a-174-2a and 22a-174-3a.
Regs., Conn. State Agencies §22a-3a-6(y)(2).

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN THE MATTER OF:	:	PAMS NO. 200701287
	:	
IROQUOIS PIPELINE OPERATING COMPANY	:	
	:	FEBRUARY 26, 2009

AGREED DRAFT DECISION

INTRODUCTION

Pursuant to § 22a-3a-6(*l*)(3)(A)(ii) of the Rules of Practice of the Connecticut Department of Environmental Protection (the "DEP"), the applicant, Iroquois Pipeline Operating Company ("Iroquois") and the staff of the DEP Bureau of Air Management ("DEP Staff") (together, the "Parties") hereby respectfully submit this Agreed Draft Decision in resolution of the above-captioned application matter. The Draft New Source Review Permit to Construct and Operate a Stationary Source No. 028-0028 (the "Draft Permit"), submitted by DEP Staff for the record as Exhibit DEP-8, is acceptable to the Parties; however, the Parties jointly request that the Hearing Officer modify Part I.C.1 of the Draft Permit to revise the minimum stack height from 50 feet to 51 feet. The Draft Permit, as so modified, is attached hereto as Exhibit A (the "Modified Draft Permit").

Further, the Parties waive all objections to the adoption of the Agreed Draft Decision without substantive change or modification as the Hearing Officer's proposed Final Decision and, if so adopted, waive all rights to file exceptions with the Commissioner pursuant to § 22a-3a-6(y) of the Rules of Practice, including the 15-day period normally allowed to file exceptions. The Parties respectfully urge the Hearing Officer and the Commissioner to issue the Final Decision and Final Permit as expeditiously as possible.

A. FINDINGS OF FACT

Introduction

1. Pursuant to Conn. Gen. Stat. § 22a-174 and Conn. Agencies Regs. §§ 22a-174-1 and 3a, by application dated May 4, 2007 (the "Application") (Exhibit DEP-2A), as supplemented by filings dated February 25, 2008 (Exhibit DEP-2B), June 5, 2008 (Exhibit DEP-2C), and July 29, 2008 (Exhibit DEP-2D), Iroquois applied to the DEP Bureau of Air Management for a permit to construct and operate a nominal 10,310-horsepower simple-cycle natural gas-fueled combustion turbine (the "New Combustion Turbine") to be located at 78 High Meadow Road, Brookfield, Connecticut (the "Site"), the location of Iroquois' existing natural gas compressor station in Brookfield (the "Brookfield Compressor Station"). Facilities associated with the New Combustion Turbine include a compressor building, exhaust stack, control enclosure, and gas coolers. (Exhibit DEP-2A.) The Application was designated by DEP Staff as PAMS No. 200701287. (Exhibits DEP-2A and DEP-6A Revised.)[1]

Background

2. Iroquois is engaged in the business of transporting natural gas in interstate commerce under certificates of public convenience and necessity ("CPCNs") issued by the Federal Energy Regulatory Commission ("FERC" or the "Commission") pursuant to Section 7 of the Natural Gas Act, 15 U.S.C. § 717f. Iroquois owns and operates an existing 414-mile interstate natural gas mainline pipeline extending from the United States-Canadian border near Ontario, Canada, through New York and western Connecticut to Long Island and the Bronx, New York (the "Iroquois Pipeline"). In Connecticut, the Iroquois Pipeline includes an existing

[1] The DEP's Draft Permit identifies the New Combustion Turbine as "Unit 3." The air permit for the existing Brookfield Compressor Station identifies that combustion turbine as "Unit 2." With the addition of the New Combustion Turbine, there will be two combustion turbines at the Site. An earlier application for a Unit 1 was voluntarily withdrawn by Iroquois. The DEP's unit identification system requires numbering the existing and proposed combustion turbines as Units 2 and 3. (Exhibit DEP-1; Hr'g Tr. 23, Feb. 10, 2009.)

compressor station in Milford (the "Milford Compressor Station") and the Brookfield Compressor Station. (APP Admin Notice-1 and APP Admin Notice-2.)

3. The New Combustion Turbine is an integral component of Iroquois' FERC-approved "08/09 Expansion Project," a project designed to provide 200,000 dekatherms per day of new firm natural gas transportation service to KeySpan Gas East Corporation from Iroquois' existing interconnection with Algonquin Gas Transmission, LLC ("Algonquin") Pipeline at the Site. (APP Admin Notice-1.) The 08/09 Expansion Project consists of: (i) the New Combustion Turbine; (ii) the Milford Compressor Station, which is currently in-service; and (iii) a new 36-inch diameter natural gas pipeline loop segment in Newtown, which is also currently in-service. (APP Admin Notice-2.)

4. FERC staff evaluated the environmental impacts of the 08/09 Expansion Project in a January 4, 2008 Environmental Assessment (the "EA"). (APP Admin Notice-1.) In the EA, FERC staff determined that the cumulative environmental effects of the 08/09 Expansion Project combustion turbine addition at the Site, combined with the previously approved compressor station facilities at the Site, would not result in significant cumulative air or noise quality impacts. (*Id.* at 59.) The EA concluded that approval of the 08/09 Expansion Project "would not constitute a major federal action significantly affecting the quality of the human environment." (*Id.* at 65.)

5. In an order issued on March 20, 2008 in FERC Docket No. CP-07-457-000, the Commission "agree[d] with the conclusions presented in the EA that Iroquois' [08/09 Expansion] [P]roject would not constitute a major federal action significantly affecting the quality of the human environment." (APP Admin Notice-2 at ¶ 64.) The Commission further concluded that "Iroquois' proposal to construct and operate the project, as described herein, is

required by the public convenience and necessity," (*id.* at ¶ 65), and issued a CPCN to Iroquois authorizing its construction and operation of the 08/09 Expansion Project, (*id.* at ¶ 66(A)).

6. The Town of Brookfield Zoning Commission granted a "Special Permit – Design Review Approval," Permit No. 2000800243 to Iroquois for the New Combustion Turbine on May 22, 2008. (APP Admin Notice-3.)

The DEP Proceeding

7. Iroquois submitted the Application on the DEP-prescribed form for a *Permit Application for New Source Review Stationary Sources of Air Pollution* and included, among other things: (i) background, business, and compliance information regarding Iroquois; (ii) Site information; (iii) technical information regarding the New Combustion Turbine; (iv) emissions rates for individual air pollutants; (v) best available control technology ("BACT")[2] determinations; and (vi) air quality dispersion modeling and potential ambient air quality impacts. (Exhibit DEP-2A.)

8. Iroquois' supplemental filings submitted to the DEP included: (i) revised air quality dispersion modeling (Exhibit DEP-2B); (ii) supplemental air quality dispersion modeling for particulate matter ("PM") less than or equal to ten microns in diameter ("PM_{10}")and less than or equal to 2.5 microns in diameter ("$PM_{2.5}$") (Exhibit DEP-2C); and (iii) updated BACT determinations (Exhibit DEP-2D).

9. Pursuant to Conn. Gen. Stat. § 22a-6g(a) and Conn. Agencies Regs. § 22a-1743a(d)(3)(G), Iroquois caused notice of the Application to be published in *The News-Times* on

[2] BACT is defined as "an emission limitation ... based upon the maximum degree of reduction for each applicable air pollutant emitted from any proposed stationary source ... which the commissioner, on a case-by-case basis, determines is achievable in accordance with section 22a-174-3a of the Regulations of Connecticut State agencies. BACT may include, without limitation, the application of production processes, work practice standards or available methods, systems, and techniques, including fuel cleaning or treatment, the use of clean fuels, or innovative techniques for the control of such air pollutant." Conn. Agencies Regs. § 22a-174-1(15).

May 16, 2007, and provided a copy of such notice to the chief elected official of Brookfield. (Exhibits DEP-4A, DEP-4B, and DEP-4C).

10. After concluding that the Application was administratively sufficient (Exhibit DEP-5), and following its technical review of the Application, DEP Staff issued its tentative determination to approve the Application. (Exhibit DEP-7A.) Concurrently with its tentative determination, DEP Staff issued the Draft Permit, which, when final, would authorize the construction and operation of the New Combustion Turbine subject to the conditions contained in the Draft Permit. (Exhibit DEP-8.)

11. Pursuant to Conn. Gen. Stat. § 22a-6h and Conn. Agencies Regs. § 22a-174-2a(b), DEP Staff caused notice of its tentative determination to be published in *The News-Times* on October 8 and 11, 2008, and provided a copy of such notice to the chief elected official of Brookfield. (Exhibits DEP-7B, DEP-10A, and DEP-10B.) The notice provided interested persons with thirty (30) days from publication of the notice to submit comments in writing to DEP Staff or to request a public hearing concerning the tentative determination to approve the Application. (Exhibits DEP-10A and DEP-10B.) One comment was received in response to the notice – this comment, filed by Ms. Kerry Swift on October 31, 2008, included a request for public hearing.

12. By letter dated December 1, 2008, Janice B. Deshais, Director of the DEP's Office of Adjudications, notified Ms. Swift, Iroquois, and DEP Staff that an adjudicatory hearing on the DEP's tentative determination to approve the Application would be held in response to Ms. Swift's request. On December 2, 2008, Iroquois filed a request for reconsideration arguing that "under applicable DEP statutes and regulations, only a 'non-adjudicative public information hearing' may be held on Iroquois' pending application" and that "there is no applicable statutory

or regulatory right to an 'adjudicatory hearing.'" By letter dated December 8, 2008, Director Deshais denied Iroquois' request, writing that "the Commissioner wishes to hold a hearing in this matter."

13. On January 9, 2009, DEP caused a notice of public hearing to be published in *The News-Times*, and sent such notice of public hearing to the chief elected official of Brookfield and to members of the General Assembly representing Brookfield. (Exhibits DEP-11A, DEP-11B, and DEP-11C.)

14. On February 10, 2009, the Hearing Officer, the Parties, and Ms. Swift visited the Site, and the Hearing Officer conducted both a non-adjudicative public information hearing and an adjudicatory hearing in Brookfield.

Description of the New Combustion Turbine

15. Iroquois' proposed New Combustion Turbine will be a nominal 10,310-horsepower Solar Turbines Taurus 70 simple-cycle combustion turbine, with an associated compressor building, exhaust stack, control enclosure, and gas coolers. (Exhibits DEP-2A, DEP-6A Revised, and DEP-8.) The New Combustion Turbine will be fueled by natural gas and will utilize a SoLoNO$_x$ combustor – Solar Turbines' proprietary "lean pre-mixed" dry low-nitrogen oxides ("NO$_x$") combustor – to minimize emissions of NO$_x$. (Exhibit DEP-2A.)

16. The New Combustion Turbine has a rated natural gas fuel capacity of 88 million British Thermal Units ("MMBTU") per hour, with a maximum firing rate of 100,000 cubic feet per hour and a maximum annual fuel consumption of 850 million cubic feet. (Exhibit DEP-6 Revised; Exhibit DEP-8.)

17. The New Combustion Turbine constitutes a minor modification of a minor source of potential air pollutants under Connecticut and federal air pollution control laws. (Exhibit

DEP-1, Exhibit APP-3, and Hr'g Tr. 12, 26, Feb. 10, 2009.) The New Combustion Turbine's maximum potential annual emissions rates are 23.0 tons per year ("TPY") of NO_x, 23.4 TPY of carbon monoxide ("CO"), 16.1 TPY of PM, 0.30 TPY of sulfur oxides ("SO_x"), 3.7 TPY of volatile organic compounds ("VOC"), and 0.39 TPY of hazardous air pollutants ("HAPs"). (Exhibit DEP-2; DEP-6A Revised.) The New Combustion Turbine would emit less than the applicable major source thresholds of 25 TPY of NO_x and VOC, and 100 TPY of CO, PM, and sulfur dioxide ("SO_2") contained in DEP regulations. (Exhibit DEP-6A Revised and Hr'g Tr. 12, Feb. 10, 2009.)

Site Description

18. The Site is an approximately 65-acre site owned by Iroquois and is occupied by the Brookfield Compressor Station, an existing meter station, and three existing natural gas pipelines (the existing 24-inch-diameter Iroquois Pipeline and two existing Algonquin 26-inch and 30-inch pipelines). (APP Admin Notice-2, at ¶ 34.)

19. The Brookfield Compressor Station occupies an area of approximately 1.37 acres on the Site. The New Combustion Turbine will increase the developed footprint of the Site by less than one-half acre, to a total of approximately 1.8 acres. (*Id.*)

20. Iroquois selected the Site as the location of the New Combustion Turbine because both the Brookfield Compressor Station and the Iroquois and Algonquin Pipelines are on the Site, thereby minimizing the need for construction of new gas pipeline and related facilities. (*Id.* at ¶ 18.)

Statutory and Regulatory Background

21. As required by the federal Clean Air Act ("CAA"), 42 U.S.C. § 7401 *et seq.*, the United States Environmental Protection Agency ("EPA") has established national ambient air

quality standards ("NAAQS") that reflect the acceptable concentrations of specific pollutants that protect the public health and welfare. 42 U.S.C. § 7409. The NAAQS, which are based on annual and various other shorter term averaging intervals, have been established for six air pollutants known as "criteria pollutants." These criteria pollutants are: (i) SO_2; (ii) PM_{10} and $PM_{2.5}$; (iii) nitrogen dioxide ("NO_2"); (iv) CO; (v) ozone ("O_3"); and (vi) lead ("Pb"). 40 CFR §§ 50.4 - 50.13. In accordance with Conn. Gen. Stat. § 22a-174, the DEP has adopted regulations to require permits for stationary sources that emit these and other regulated air pollutants. Conn. Agencies Regs. § 22a-174-3a.

22. The CAA establishes a joint federal and state program to control air pollution and to protect the public health and welfare. This program includes regulatory requirements to ensure that the ambient air quality, as impacted by existing and new sources of pollution, complies with the NAAQS. Each state is required to designate air quality control regions[3] defined by the EPA and to adopt a state implementation plan ("SIP") that establishes criteria pollutant emissions limitations and procedures to implement, maintain, and enforce the NAAQS for those designated regions. 42 U.S.C. § 7410(a)(2)(A)-(L).

23. The Site is located in a "severe non-attainment area for ozone," *see* Conn. Agencies Regs. § 22a-174-1(99), and a non-attainment area for $PM_{2.5}$, *see* 40 CFR § 81.307.

24. The NAAQS are implemented, in part, through two different programs. The first is a federal program designed to bring non-attainment areas into compliance with the NAAQS as

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[3] Air quality control regions are designated as:
(i) non-attainment, any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant,
(ii) attainment, any area (other than an area identified in clause (i)) that meets the national primary or secondary ambient air quality standard for the pollutant, or
(iii) unclassifiable, any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant. 42 U.S.C. § 7407(d)(1)(A).

soon as practicable. 42 U.S.C. §§ 7410, 7501-7515. Major new sources of non-attainment pollutants, such as the ozone precursors, NO_x and VOCs, must control such pollutants using the Lowest Achievable Emission Rate ("LAER").[4] Conn. Agencies Regs. § 22a-174-3a(1)(4). Iroquois is not subject to the LAER requirements set forth in Conn. Agencies Regs. § 22a-174-3a(d)(3)(I) since the New Combustion Turbine is a minor source and its potential emissions do not exceed any applicable major source threshold. (Exhibits DEP-1, DEP-2, and DEP-6A Revised.)

25. The second is a federal program to regulate air pollution in "attainment" or "unclassifiable" areas. 42 U.S.C. §§ 7470-7479. The purpose of this program is the "prevention of significant deterioration" ("PSD") of air quality in attainment areas. The program also ensures that economic growth "will occur in a manner consistent with the preservation of existing clean air resources ...." 42 U.S.C. § 7470(3). The EPA's regulations implementing this program require states to implement certain pre-construction permit requirements for new major stationary sources or modifications. 42 U.S.C. §§ 7470-7492. The PSD program also establishes PSD increments, which represent the maximum allowable increase in the concentration of certain air pollutants above baseline concentrations established under the Clean Air Act. 40 CFR § 52.21; *see also* Conn. Agencies Regs. § 22a-174-3a(k), Table 3a(k)-2.

26. Under EPA's PSD regulations, major new sources and modifications must determine and use BACT to minimize emissions of pollutants from a source that might otherwise

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[4] LAER means the more stringent rate of emissions for any source based on the following:

(A) The most stringent emissions limitation which is contained in the implementation plan of any State for such class -or category of stationary source, unless the owner or operator of the proposed stationary source demonstrates that such limitations are not achievable; or

(B) The most stringent emissions limitation which is achieved in practice by such class or category of stationary sources ... In no event shall the application of the term permit a proposed new ... stationary source to emit any pollutant in excess of the amount allowable under an applicable new source standard of performance.

40 CFR § 51.165a(l)(xiii); Conn. Agencies Regs. § 22a-174-1(54).

exceed the applicable significance levels established by the PSD program. 40 CFR § 51.21(j)(2); *see* Conn. Agencies Regs. § 22a-174-3a(k). Applicants are also required to evaluate the impacts from the proposed source combined with other sources and existing background ambient air quality through air dispersion modeling. To show that the new source will not cause or contribute to any air quality violation, the total concentration of any pollutant must comply with the NAAQS and applicable PSD increments. Conn. Agencies Regs. § 22a-174-3a(d)(3)(B) & (C); 40 CFR § 52.21(m).

27. Connecticut, through its EPA-approved SIP, has been delegated the authority to implement the federal PSD program. Connecticut's PSD regulations apply to major new sources with potential emission rates greater than the significant emission rate thresholds set forth in Table 3a(k)-1 of Conn. Agencies Regs. § 22a-174-3a(k). Because the New Combustion Turbine constitutes a minor modification of a minor source of potential air pollutants under Connecticut and federal air pollution control laws, Connecticut's PSD regulations do not apply to the New Combustion Turbine. (Exhibit DEP-6A Revised.)

28. The DEP regulations that implement the Connecticut SIP, however, require New Source Review ("NSR") permits for certain minor stationary sources or minor modifications, including the New Combustion Turbine. Specifically, the DEP's regulations require that any new source with potential emissions of fifteen (15) or more TPY of an individual air pollutant must apply for a NSR permit and conduct a BACT review for those pollutants with potential emissions in excess of 15 TPY. Conn. Agencies Regs. §§ 22a- 174-3a(a)(1) and (j).

29. Pursuant to Conn. Agencies Regs. § 22a-174-22, Table 22-1, applicable Reasonably Available Control Technology ("RACT")[5] limits for large combustion turbines are 0.90 lb/MMBTU for natural gas. The New Combustion Turbine is also subject to the 40 CFR 60 Subpart KKKK New Source Performance Standards ("NSPS") requirements and its NO_x emissions limit is 25 ppmvd @ 15% O_2 for turbines with a maximum combustion turbine heat input at peak load between 50 and 850 MMBTU/hr firing natural gas. (Exhibits DEP-1 and DEP-6A Revised.)

BACT Determinations for the New Combustion Turbine

30. Pursuant to Conn. Agencies Regs. § 22a-174-3a(d)(3)(H), a minor modification of a minor stationary source, such as the New Combustion Turbine, must incorporate BACT for each regulated air pollutant whose potential emissions exceeds one of the applicable thresholds defined in Conn. Agencies Regs. § 22a-174-3a(j). (*See* Exhibits DEP-1 and DEP-6A Revised.) BACT is an emission limitation based on the maximum degree of reduction, on a case-by-case basis, taking into account energy, environmental, and economic impacts. (*Id.*; *see supra* note 2.)

31. The "top down" BACT approach mandated by DEP requires that the BACT analysis begin by evaluating the most stringent emissions controls available and then proceed to consider progressively lesser degrees of control based on the technical and economic feasibility and commercial availability of such controls for the proposed emissions source. (Exhibits DEP-2D and DEP-6A Revised.) Iroquois was required to conduct a "top down" BACT analysis for $PM/PM_{10}/PM_{2.5}$, CO, and NO_x in accordance with Conn. Agencies Regs. §22a-174-3a(j)(l)(C), since individually each pollutant's proposed maximum potential emissions from the New

[5] RACT is defined as "the lowest emission limitation that a particular stationary source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." Conn. Agencies Regs. § 22a-174-1(91).

Combustion Turbine exceed 15 TPY. The New Combustion Turbine's SO_x and VOC emissions are not subject to BACT because, individually, their potential-to-emit is less than 15 TPY.[6] (*Id.*)

32. Iroquois' BACT analyses and DEP Staff's BACT determinations for each pollutant are presented below:

NO_x BACT Analysis

33. NO_x is formed during the combustion processes in the turbine. There are two principal forms of NO_x: "thermal" NO_x and "fuel" NO_x. Thermal NO_x formation results from oxidation of atmospheric nitrogen contained in the air in the high-temperature, post-flame region of the combustion zone. The major factors influencing thermal NO_x formation are temperature, concentrations of nitrogen and oxygen in the inlet air, and residence time within the combustion zone. Fuel NO_x is formed by the oxidation of fuel-bound nitrogen. Natural gas has negligible amounts of fuel-bound nitrogen. Thus, essentially all NO_x formed from natural gas combustion is thermal NO_x. Adjusting the combustion process and installing post-combustion controls both serve to limit NO_x formation. (Exhibits DEP-1 and DEP-6A Revised.)

Dry Low NO_x (or SoLoNO_x)

34. Gas turbines are generally designed to operate at combustion chamber air-to-fuel ratios of 1.0, the condition at which the highest combustion temperatures and quickest combustion reactions (including NO_x formation) occur. Air-to-fuel ratios greater than 1.0 are referred to as fuel lean mixtures (i.e., excess air in the combustion chamber resulting in lower combustion temperatures). As the air-to-fuel ratio increases in the combustion chamber, flame temperature decreases and the rate of NO_x production decreases dramatically. (*Id.*)

[6] The New Combustion Turbine emits negligible quantities of lead. (Exhibit DEP-6A Revised, at 1.)

35. The SoLoNO$_x$ combustor is designed to operate above air-to-fuel ratios of 1.0, thereby reducing thermal NO$_x$ formation within the combustion chamber. The proposed SoLoNO$_x$ combustor is designed to burn only natural gas. The SoLoNO$_x$ combustor is also designed to thoroughly mix the fuel and air and to optimize residence time to minimize NO$_x$ emissions in a fuel-lean, lower temperature, combustion environment. (*Id.*)

Selective Catalytic Reduction ("SCR")

36. SCR is an add-on NO$_x$ control placed in the exhaust stream usually after SoLoNO$_x$ or other controls. SCR involves the injection of aqueous ammonia (NH_3) into the exhaust gas stream upstream of a catalyst bed. On the catalyst surface, NH_3 reacts with NO$_x$ and oxygen contained within the exhaust gas to form nitrogen gas (N_2) and water (H_2O). For SCR to operate reliably, the exhaust gas temperature should be within a range of approximately 450 to 850 degrees Fahrenheit (°F). Exhaust gas temperatures above this range can cause NO$_x$ and ammonia to pass through the catalyst without reacting. The exhaust temperatures from the proposed turbine may approach 1,000 °F under permitted conditions. (*Id.*)

37. Ammonia "slip" into the ambient air is expected from normal SCR operations, especially with greater simple-cycle turbine exhaust temperatures. In addition, ammonia storage and handling could potentially result in releases to environment. (*Id.*)

38. SCR with a SoLoNO$_x$ combustor is only about five percent more efficient at removing NO$_x$ than a SoLoNO$_x$ combustor alone. This difference is more than offset by the ammonia "slip" emissions of five to 10 percent that can be expected from an SCR system. (*Id.*)

EM$_x$™

39. EM$_x$ (formerly SCONO$_x$) is an emissions control technology that uses a potassium carbonate-coated catalyst to oxidize CO to carbon dioxide (CO_2) and reduce NO$_x$ to

N_2 and water. The potassium carbonate must be regenerated frequently with a reducing gas to remain effective. The process normally operates at the outlet of the heat recovery steam generator ("HRSG") in combined-cycle systems where the exhaust temperature is 350 to 450°F. The proposed simple cycle turbine does not include an HRSG and, therefore, has a much higher stack exhaust temperature. Therefore, the New Combustion Turbine cannot utilize this technology, as its exhaust temperature may approach 1,000°F under operating conditions. (*Id.*)

XONON™

40. Catalytic combustion (XONON™) is a developing NO_x control alternative in which a catalyst is used to react fuel and air at lower temperatures than normal combustion. This system uses a flameless combustion system where fuel and air react on a catalyst surface. The overall combustion process involves partial combustion of the fuel in the catalyst module followed by complete combustion downstream of the catalyst. The partial combustion within the catalyst produces no NO_x and the combustion downstream of the catalyst occurs in a flameless homogeneous reaction that produces very little NO_x. By reducing combustion temperatures, catalytic combustion reduces thermal NO_x formation. XONON is designed to be contained entirely within a turbine combustor and is not a process for cleaning up the turbine exhaust. Therefore, it is only feasible and commercially available for turbine models for which it has been specifically designed and installed. This alternative is not commercially available for simple-cycle gas turbines of the size and type proposed by Iroquois. (*Id.*)

BACT Determination for NO_x

41. DEP Staff determined that the BACT NO_x emission rate limitation is 15 ppmvd @ 15% O_2. This level will be achieved by burning only natural gas fuel and using $SoLoNO_x$

without SCR and will comply with Conn. Agencies Regs. § 22a-174-22 RACT and Subpart KKKK NSPS limits. (*Id.*)

PM/PM_{10}/$PM_{2.5}$ BACT Analysis

42. Particulate matter (PM) is broken into size fractions. This speciation of PM is divided into portions of less than or equal to 10 microns in diameter (PM_{10}) and of less than or equal to 2.5 microns in diameter ($PM_{2.5}$). (*Id.*)

43. Post-combustion controls, such as fabric filters, wet scrubbers, and electrostatic precipitators are impractical due to their associated large pressure drops and the low concentrations of PM/PM_{10} present in the exhaust gas. A review of PM/PM_{10} emission limits for combustion turbines in the EPA RACT/BACT/LAER clearinghouse shows that the proposed SoLoNO$_x$ combustor, combined with good combustion techniques and low-sulfur fuel have been used to effectively control PM/PM_{10} emissions. (*Id.*)

44. DEP Staff determined that BACT for PM/PM_{10}/$PM_{2.5}$ emissions is 0.042 lbs/MMBTU. (Exhibit DEP-1; Exhibit DEP 6A-Revised.) DEP Staff also determined that BACT for PM/PM_{10}/$PM_{2.5}$ emissions for the New Combustion Turbine is the use of a SoLoNO$_x$ combustor, clean burning fuels, such as natural gas, and good combustion practices, and that the combination of these is the most effective means for controlling PM/PM_{10}/$PM_{2.5}$ emissions from the New Combustion Turbine. (*Id.*)

CO BACT Analysis

45. CO is a primary product of incomplete combustion ("PIC"). The formation of CO and other PICs in the operation of a gas turbine results from the incomplete combustion of the fuel. Several conditions can lead to incomplete combustion, including insufficient O_2 availability, poor air/fuel mixing, cold wall flame quenching, reduced combustion temperature,

decreased combustion residence time and load reduction. By controlling the combustion process carefully, CO emissions can be minimized. (*Id.*)

46. DEP Staff determined that the BACT CO emissions rate limitations for natural gas combustion is 25.0 ppmvd @ 15% O_2, and that this emissions rate will be achieved with good combustion practices. (*Id.*)

Stack Testing Requirements

47. The Draft Permit requires that Iroquois conduct initial stack emissions testing on the New Combustion Turbine to demonstrate compliance with the limits of the Draft Permit. The initial stack test is required to be conducted within 60 days of achieving maximum production rate, but not later than 180 days after initial start-up. Testing is required for PM, NO_x and CO. (Exhibits DEP-1, DEP-6A Revised, and DEP-8.) In addition, 40 CFR 60 Subpart KKKK currently requires periodic testing at a frequency of at least every 26 months. (Exhibit APP-3; *see also* Hr'g Tr. 19, Feb. 10, 2009.)

48. Iroquois is required to ensure that any stack testing required by Conn. Agencies Regs. §22a-174-22, 40 CFR 60 Subpart KKKK and 40 CFR Parts 72-78 be completed in accordance with those regulations. (Exhibits DEP-1, DEP-6A Revised, and DEP-8.)

Hazardous Air Pollutants ("HAPs")

49. The New Combustion Turbine is not a major source of HAPs and will not emit ten (10) tons per year (TPY) or more of any single HAP listed in CAA § 112(b), or twenty-five (25) TPY or more of any combination of HAPs. Consequently, Iroquois was not required to incorporate the Maximum Available Control Technology pursuant to 40 CFR Part 63. (Exhibit DEP-1.)

50. Maximum Allowable Stack Concentration calculations for HAPs regulated under Conn. Gen. Stat. § 22a-174-29 were performed by Iroquois and compared to expected HAP emissions from the New Combustion Turbine. The analysis demonstrates that the actual stack concentrations will be below maximum allowable stack concentrations. (Exhibits DEP-1 and DEP-2A.)

Permit to Construct and Operate under Conn. Agencies Regs. § 22a-174-3a(a)(1)(D)

51. Iroquois was required to apply for and obtain a permit to construct and operate pursuant to Conn. Agencies Regs. § 22a-174-3a(a)(1)(D) because potential emissions of PM, NO_x and CO from the New Combustion Turbine exceed 15 TPY. (Exhibits DEP-1 and DEP-6A Revised.)

New Source Performance Standards (NSPS): Conn. Agencies Regs. § 22a-174-3a(d)(3)(D)

52. The New Combustion Turbine is subject to 40 CFR 60 Subpart KKKK - Standards of Performance for Combustion Turbines. Iroquois is required to comply with all applicable emissions monitoring, record keeping, testing and reporting requirements of 40 CFR Part 60 Subpart KKKK. (Exhibits DEP-1, DEP-6A Revised, and DEP-8.)

Prevention of Significant Deterioration (PSD): Conn. Agencies Regs. § 22a-174-3a(d)(3)(C)

53. In NAAQS attainment areas for a given criteria pollutant, PSD review is required for a new source which emits that pollutant at greater than major source thresholds. The New Combustion Turbine's proposed PM, PM_{10}, $PM_{2.5}$, VOC, CO, NO_x, and SO_x emissions do not exceed their respective applicable major source thresholds. Consequently, PSD review is not required for these pollutants. (Exhibits DEP-1 and DEP-6A Revised.)

Ambient Air Quality Analysis

54. Although PSD and non-attainment NSR requirements do not apply to the New Combustion Turbine because it will not be a major stationary source, Iroquois conducted air dispersion modeling as required by DEP regulations because potential NO_x, CO, and PM emissions will exceed 15 TPY; thereby triggering the requirement to obtain a minor source permit and to perform an air quality impact analysis. (Exhibits DEP-2B, DEP-2C, and DEP-6C Revised.) Iroquois used EPA's AERMOD dispersion model, as approved by the DEP. (*Id.*) DEP Staff reviewed Iroquois' modeling analysis and found that operation of the New Combustion Turbine is not expected to cause or contribute to any violation of any NAAQS or PSD increments. (Exhibits DEP-1, DEP-6A Revised, DEP-6C Revised, DEP-14, and APP-3; Hr'g Tr. 16-18, 28-30, Feb. 10, 2009.)

55. EPA has established Significant Impact Levels ("SILs"), which have been adopted by the DEP, as first-level criteria to evaluate modeled concentrations for an emissions source relative to the NAAQS. The SILs are small fractions of the NAAQS. With a modeled stack height of 50 feet, 24-hour PM impacts were the only impacts that exceeded the SIL. With a modeled stack height of 51 feet, 24-hour PM impacts were less than the SIL. Accordingly, Iroquois could construct a facility with a stack height of either 50 feet or 51 feet and meet the applicable regulatory requirements. The New Combustion Turbine is predicted to have an insignificant impact on air quality for all other criteria pollutants. Iroquois demonstrated that the operations of the New Combustion Turbine, combined with that of the existing Brookfield Compressor Station, will not prevent or interfere with the attainment or maintenance of the PM 24-hour NAAQS. (Hr'g Tr. 16-18, 28-30, Feb. 10, 2009; *see also* DEP-6C Revised.)

56. The Draft Permit requires that the New Combustion Turbine have a minimum stack height of 50 feet. (Exhibit DEP-8, at 2.) DEP Staff is amenable to either a 50-foot or 51-foot stack. (Hr'g Tr. 28-30, Feb. 10, 2009.) The Parties have jointly requested that the Hearing Officer modify Part I.C.1 of the Draft Permit to revise the minimum stack height from 50 feet to 51 feet, as reflected in the Modified Draft Permit attached hereto as Exhibit A.

Compliance History

57. As required by the DEP's Permit Application Transmittal Form, the Application included a completed "Applicant Compliance Information Form." (DEP-2A.) DEP Staff reviewed Iroquois' compliance history in accordance with DEP's Environmental Compliance History Policy. DEP Staff reviewed Iroquois's Applicant Compliance Information Form and other agency records, including the PAMS Enforcement database, for information to evaluate Iroquois' compliance history and the relevance of such history. Additionally, a review of air program compliance was requested from the Compliance and Field Operations Section. DEP Staff found nothing in Iroquois' compliance history that would adversely impact its tentative determination to approve the Application. (Exhibits DEP-6A Revised, at 9 and DEP-6B; Hr'g Tr. 27, Feb. 10, 2009.)

Draft Permit

58. The Draft Permit specifies the state and federal statutes and regulations that govern the operation of the New Combustion Turbine, restrict emissions, and establish the requirements for stack testing, emissions monitoring and record keeping. The Draft Permit provides that Iroquois must conduct, maintain and operate the New Combustion Turbine in compliance with all applicable requirements of any federal, municipal or state agency and applicable federal, state and local law. (Exhibit DEP-8.)

59. In accordance with EPA guidance, DEP determined that there was no requirement to combine the New Combustion Turbine and the existing Brookfield Compressor Station under one air permit. (Exhibit DEP-14; Hr'g Tr. 24, Feb. 10, 2009.) Under EPA guidance, for two projects to be regulated and permitted as a single project, they must involve installing multiple emissions sources over a period of time that are all required to produce a similar product or service. (Exhibits DEP-14 and APP-3; Hr'g Tr. 9-11, 24, Feb. 10, 2009). Neither of Iroquois' two combustion turbines at the Site necessitates the construction or operation of the other to provide the type of natural gas pipeline compression service proposed. (Exhibit APP-3; Hr'g Tr. 9-11, Feb. 10, 2009.) This is supported by the fact that the dates for commencing operation of the two turbines differ by one year. (Exhibit APP-3.) Further, the New Combustion Turbine and the Brookfield Compressor Station each satisfy different commitments to meet demands of discrete customers for the same type of service, and each will operate under a separate CPCN issued by FERC. (*Id.*; *see also* APP Admin Notice-2.)

CONCLUSIONS OF LAW

Jurisdiction

The Commissioner is authorized to adopt and implement regulations to control and prohibit air pollution throughout the state and to issue permits for the construction and operation of new sources of air pollution in accordance with those regulations. Conn. Gen. Statute § 22a-174(a) and (c). The regulations must be consistent with the Clean Air Act, which requires each state to develop a plan which provides for implementation, maintenance and enforcement of the NAAQS, 42 U.S.C. §7410(a), and to develop an acceptable procedure for implementing and enforcing federal standards of performance for new sources of air pollution. 42 USC §7411(c). Pursuant to Conn. Gen. Stat. § 22a-174 *et seq.*, the Commissioner has promulgated Conn.

Agencies Regs. §§ 22a-174-1 to 22a-174-100, which include permitting requirements and the enforcement of standards of performance for new sources of air pollution. Conn. Agencies Regs. § 22a-174-3a specifies the application procedures, criteria and standards for issuing permits to construct and operate stationary sources of air pollution.

Prior to issuing the permit to construct and operate the New Combustion Turbine, the Commissioner must determine that the applicable provisions of the new source review regulations have been satisfied. Iroquois must demonstrate that it has or will comply with all applicable state and federal statutes and regulations, and the terms and conditions of the Draft Permit.

Regulatory Requirements

New Source Permit Application

An application for a permit to construct and operate a regulated source of air pollution must include, among other things, an executive summary, background information pertaining to the owner and/or operator of the source and other contact information, a premises site plan, technical information, emissions rates for individual air pollutants, BACT and LAER determinations (as applicable), compliance history information, an authorized signatory certification, and all application fees. Conn. Agencies Regs. § 22a-174-3a(c)(1)(A)-(L). Iroquois has provided the information required by Conn. Agencies Regs. § 22a-174-3a(c).

Standards for Issuing Permits

Conn. Agencies Regs. § 22a-174-3a(h) imposes a duty on any owner or operator of a stationary source of pollution to comply with the terms and conditions of any permit issued by the Commissioner. Further, Conn. Agencies Regs. § 22a-174-3a(d)(2) provides that a permit will not be issued unless the Commissioner determines that the owner or operator of the subject

stationary source will comply with the applicable provisions of Conn. Agencies Regs. § 22a-174-3a(d)(3). Iroquois is subject to Conn. Agencies Regs. § 22a-174-3a(h) and to the following provisions of Conn. Agencies Regs. § 22a-174-3a(d)(3):

- *Construct and operate such stationary source ... in accordance with the permit, and operate such stationary source ... in accordance with all applicable and relevant emissions limitations, statutes, regulations, schedules for stack tests, and other order of the commissioner .... Conn. Agencies Regs. § 22a-174-3a(d)(3)(A).*

The Draft Permit specifies emissions limitations, stack testing requirements and the authority of the Commissioner to revise these conditions if necessary. The Draft Permit provides that Iroquois must construct and operate the New Combustion Turbine in accordance with all applicable requirements of any federal or state agency or applicable federal or state law. It is reasonable to conclude that Iroquois will construct and operate the New Combustion Turbine in accordance with all relevant emissions limitations, stack test requirements and any other order of the Commissioner.

- *Operate such stationary source ... without preventing or interfering with the attainment or maintenance of any applicable ambient air quality standards or any Prevention of Significant Deterioration increments under subsection (k) of this section. Conn. Agencies Regs. § 22a-174-3a(d)(3)(B).*

Iroquois submitted an ambient air impact analysis using DEP-required dispersion models demonstrating that the New Combustion Turbine will not prevent or interfere with the attainment or maintenance of any applicable ambient air quality standard if operated in accordance with the Draft Permit. Proposed emissions for criteria pollutants from the New Combustion Turbine do not exceed applicable major source thresholds. PSD review is only required for a new source which emits any criteria pollutant at greater than a major stationary source threshold within an attainment area. As a result, PSD review is not required for these pollutants.

- *Operate such stationary source ... without preventing or interfering with*

the attainment or maintenance of *any [NAAQS] in any other state and without interfering with the application of the requirements in any other state's implementation plan .... Conn. Agencies Regs. §22a-174-3a(d)(3)(C).*

Iroquois has complied with the requirements of Conn. Agencies Regs. § 22a-174-3a(d)(3)(C) by submitting an ambient air quality analysis demonstrating that it will operate the New Combustion Turbine without preventing or interfering with the attainment or maintenance of any NAAQS in any other state and without interfering with the application of the requirements in any other state's implementation plan, adopted pursuant to section 110 of the CAA.

- *Operate such stationary source ... In accordance with all applicable emissions standards and standards of performance pursuant to 40 CFR Parts 60, 61, and* 63 .... *Conn. Agencies Regs. § 22a-174-3a(d)(3)(D).*

Iroquois is subject to the requirements of Conn. Agencies Regs. § 22a-174-3a(d)(3)(D) because 40 CFR Part 60 Subpart KKKK - *Standards of Performance for Combustion Turbines* applies to the New Combustion Turbine. The Draft Permit incorporates the relevant sections of Subpart KKKK by reference. The Draft Permit also contains relevant emissions limitations more stringent than those contained in that subpart, as well as requirements to ensure that the applicable performance standards are complied with at all times. Compliance with the terms and conditions of the Draft Permit will result in operation of the New Combustion Turbine in accordance with all applicable emissions standards and standards of performance pursuant to these regulations. Iroquois will also comply with all applicable monitoring, emissions limits, record keeping, testing and reporting requirements of Subpart KKKK.

- *Install: (i) sampling ports of a size, number and location as the Commissioner may reasonably require, (ii) instrumentation to monitor and record emission and other parameter data as the Commissioner may require, and (iii) such other sampling and testing facilities as the*

Commissioner may require . . . Conn. Agencies Regs. § 22a-174-3a(d)(3)(E).

The Draft Permit, as well as DEP and federal regulations, requires Iroquois to complete testing of the New Combustion Turbine's emissions in accordance with the DEP's "Emission Test Guidelines" and applicable EPA reference methods (40 CFR Part 60 Appendix A), which prescribe requirements for the number, location and orientation of sampling ports, testing instrumentation, methods and procedures. Pursuant to the foregoing requirements, Iroquois must: (i) submit a detailed testing protocol demonstrating compliance with agency guidelines and regulations; (ii) notify agency officials in advance of testing; and (iii) submit a detailed post-testing report regarding test methods and results for DEP approval.

- *As the Commissioner may require, conduct stack tests ... in accordance with subsection (e) of this section and in accordance with permit conditions and methods prescribed by the Commissioner. Such stack tests shall demonstrate, to the Commissioner's satisfaction, that the requirements of each and every applicable permit ... are being met and that such stationary source ... complies with the Regulations of Connecticut Agencies and federal requirements. Conn. Agencies Regs. § 22a-174-3a(d)(3)(F).*

The Draft Permit sets out the requirements for initial and periodic stack emissions testing that must be conducted in accordance with the provisions of Conn. Agencies Regs. § 22a-174-5 and the DEP *Source Stack Testing General Requirements.* The Draft Permit specifies that the Commissioner has retained the right to require stack testing of any pollutant at any time to demonstrate compliance.

- *Pay all fees required by the Department within forty-five (45) days of receipt of a tentative determination of the Commissioner. Conn. Agencies Regs. § 22a-174-3a(d)(3)(G).*

Iroquois has paid all fees required by the DEP.

- *Incorporate [BACT] as directed by the Commissioner, for each individual air pollutant subject to, and in accordance with, subsection (j) of this section. Conn. Agencies Regs. § 22a-174-3a(3)(d)(3)(H).*

Iroquois will incorporate BACT as determined by the Commissioner for each air pollutant as required by the regulations.

- *Incorporate LAER, as directed by the Commissioner, for each individual air pollutant subject to, and in accordance with, subsection (I) of this section. Conn. Agencies Regs. § 22a-174-3a(d)(3)(I).*

Iroquois is not subject to the LAER requirements set forth in Conn. Agencies Regs. § 22a-174-3a(d)(3)(I) because the New Combustion Turbine is a minor source and its potential emissions do not exceed any applicable major source threshold. (DEP-6A Revised.) Therefore, Iroquois is not required to incorporate LAER.

- *Incorporate the maximum available control technology (MACT), as directed by the Commissioner, for each individual air pollutant subject to, and in accordance with, subsection (m) of this section. Conn. Agencies Regs. § 22a-174-3a(d)(3)(J).*

Iroquois is not subject to the requirements of Conn. Agencies Regs. § 22a-174-3a(d)(3)(J) because the New Combustion Turbine is not a major source of HAPs. Therefore, Iroquois is not required to incorporate the Maximum Available Control Technology (MACT).

- *As required by the Commissioner, install monitoring equipment and perform monitoring to demonstrate compliance with any permit provision . . . Conn. Agencies Regs. § 22a-174-3a(d)(3)(K).*

The Draft Permit requires that Iroquois continuously monitor and record fuel feed to the New Combustion Turbine and to calculate and record monthly and annual emissions from the New Combustion Turbine in accordance with Conn. Agencies Regs. § 22a-174-3a(d)(3)(K).

- *Provide the Commissioner with current information regarding air pollutant emissions from such stationary source . . . Conn. Agencies Regs. § 22a-74-3a(d)(3)(L).*

The Draft Permit requires Iroquois to calculate and record monthly and annual emissions from the New Combustion Turbine in accordance with Conn. Agencies Regs. § 22a-74-3a(d)(3)(L).

- *Comply with any applicable maximum allowable stack concentration (MASC) or other emissions limitation of [Conn. Agencies Regs. §] 22a-174-29 . . . . Conn. Agencies Regs.§22a-174-3a(d)(3)(M).*

The Draft Permit specifies the requirement that HAP emissions not exceed any applicable MASCs and that Iroquois must comply with the provisions of Conn. Agencies Regs. § 22a-174-29 at all times.

- *Demonstrate that the emission limitation required of such stationary source ... for the control of any air pollutant shall not be affected by that portion of the stack height of such stationary source ... that exceeds good engineering practice stack height or by any other dispersion technique. Conn. Agencies Regs. § 22a-174-3a(d)(3)(N).*

Iroquois is not subject to Conn. Agencies Regs. § 22a-174-3a(d)(3)(N) because the proposed New Combustion Turbine's stack will not exceed good engineering practice stack height.

- *The commissioner may require the applicant to publish notice of the application in media that serves the needs of the community ... Conn. Agencies Regs. § 22a-174-2a(b)(2)(A).*

Iroquois has complied with the requirements of Conn. Agencies Regs. § 22a-174-2a(b)(2)(A) by publishing a notice of application in *The News-Times* on May 11, 2007.

- *In the event the commissioner requires compliance with subparagraph (A) of this subdivision, the applicant shall submit to the commissioner a certified copy of the notice ... Conn. Agencies Regs. §22a-174-2a(b)(2)(B).*

Iroquois has complied with the requirements of Conn. Agencies Regs. § 22a-174-2a(b)(2)(B) by submitting a Certification of Notice form - Notice of Application on May 31, 2007.

- *With respect to notice of tentative determination for any application for a permit, other than a general permit, the applicant shall comply with the requirements of section 22a-6h of the Connecticut General Statutes ... Conn. Agencies Regs. § 22a-174-2a(b)(3).*

Conn. Gen. Stat. § 22a-6h requires that the Commissioner shall publish or cause to be published, at Iroquois's expense, notice of the tentative determination once in a newspaper having a substantial circulation in the affected area. Pursuant to Conn. Agencies Regs. § 22a-174-2a(b)(3), the notice of tentative determination was published in the News Times on October 8 and 11, 2008.

- *In exercising any authority to issue . . . any permit . . . the Commissioner of Environmental Protection may consider the record of the applicant for . . . such permit . . . the principals, and any parent company or subsidiary, of the applicant . . . regarding compliance with environmental protection laws of this state, all other states and the federal government. If the commissioner finds that such record evidences a pattern or practice of noncompliance which demonstrates the applicant's unwillingness or inability to achieve and maintain compliance with the terms and conditions of the permit . . . for which application is being made, . . . the commissioner, . . . may (1) include such conditions as he deems necessary in any such permit, registration, certificate or other license, (2) deny any application for the issuance, renewal, modification or transfer of any such permit, registration, certificate or other license, or (3) revoke any such permit, registration, certificate or other license. Conn. Gen. Stat. § 22a-6m.*

Iroquois' compliance history does not "evidence[] a pattern or practice of noncompliance which demonstrates the applicant's unwillingness or inability to achieve and maintain compliance with the terms and conditions of the permit." Accordingly, Iroquois' compliance history does not warrant either denial of the Application or imposition of special conditions under Conn. Gen. Stat. § 22a-6m.

CONCLUSION

Iroquois has demonstrated by a preponderance of the evidence presented that its Application and the Draft Permit comply with all applicable statutory and regulatory requirements. Accordingly, the Modified Draft Permit attached hereto as Exhibit A, with the modification of its Part I.C.1 to revise the minimum stack height from 50 feet to 51 feet, should be issued as a final permit.

AGREED TO BY:

IROQUOIS PIPELINE OPERATING COMPANY

By: _____

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

By: _____

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EXHIBIT A

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

NEW SOURCE REVIEW PERMIT
TO CONSTRUCT AND OPERATE
A STATIONARY SOURCE

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

Owner/Operator:	Iroquois Pipeline Operating Company
Address:	One Corporate Drive, Suite 600, Shelton, CT 06484
Equipment Location:	78 High Meadow Road, Brookfield, CT 06804
Equipment Description:	Solar Turbines Taurus 70 Turbine with SoLoNOx Unit 3

Town-Permit Numbers: 028-0028

Premises Number: 049

Original Permit Issue Date:

Expiration Date: None

Gina McCarthy
Commissioner

Date

PERMIT FOR FUEL BURNING EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

The conditions on all pages of this permit and attached appendices shall be verified at all times except those noted as design specifications. Design specifications need not be verified on a continuous basis; however, if requested by the commissioner, demonstration of compliance shall be shown.

PART I. OPERATIONAL CONDITIONS

A. Operating Limits

1. Fuel Type(s): Pipeline Quality Natural Gas
2. Maximum Fuel Consumption over any Consecutive 12 Month Period: 850 MMCF

B. Design Specifications

1. Maximum Fuel Firing Rate(s): 100,000 CF/hr
2. Maximum Gross Heat Input (MMBTU/hr): 88

C. Stack Parameters

1. Minimum Stack Height (ft): 51
2. Minimum Exhaust Gas Flow Rate (acfm): 138,602
3. Stack Exit Temperature (°F): 858
4. Minimum Distance from Stack to Property Line (ft): 345

PART II. CONTROL EQUIPMENT (Applicable if -X- Checked) (See Appendix E for Design Specifications)

A. Type

- ☐ None
- ☐ Scrubber
- ☐ Electrostatic Precipitator
- ☐ Cyclone
- ☐ Multi-Cyclone
- ☐ Thermal DeNO$_x$
- ☐ Selective Non-Catalytic Reduction
- ☐ Selective Catalytic Reduction
- ☐ Low NO$_x$ Burner
- ☐ Fabric Filter
- ☐ Particulate Trap
- ☒ Other - Solar SoLoNO$_x$ Technology

B. Minimum Efficiency

1. Reduce NO$_x$ emissions to atmosphere to, at most, 15.0 ppmvd @ 15% O$_2$
2. Reduce CO emissions to atmosphere to, at most, 25.0 ppmvd @ 15% O$_2$

PERMIT FOR FUEL BURNING EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART III. CONTINUOUS EMISSION MONITORING REQUIREMENTS AND ASSOCIATED EMISSION LIMITS (Applicable if -X- Checked)

CEM shall not be required for this source at this time to demonstrate compliance with emission limits contained in this permit.

PART IV. OPERATING REQUIREMENTS

A. The turbine shall be operated using good combustion practices.

B. During any air pollution emergency episode that occurs, the turbine shall be operated in accordance with the Updated Facility Emergency Episode Plans submitted to the Department, pursuant to RCSA §22a-174-6.

PART V. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Monitoring

The Permittee shall use a non-resettable totalizing fuel metering device to continuously monitor fuel feed to this permitted source.

B. Record Keeping

1. The Permittee shall keep records of annual fuel consumption. Annual fuel consumption shall be based on any consecutive 12 month time period and shall be determined by adding the current month's fuel usage to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.

2. The Permittee shall calculate and record the monthly and consecutive 12 month PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO, and VOC emissions in units of tons. The consecutive 12 month emissions shall be determined by adding (for each pollutant) the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.

3. The Permittee shall keep all records required by this permit for a period of no less than five years and shall submit such records to the commissioner upon request.

PERMIT FOR FUEL BURNING EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR MANAGEMENT

PART VI. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein at any time, as determined in accordance with the applicable averaging periods defined in Part III of this permit or as specified in an approved stack test protocol.

An exceedance of either (i) the emission limits in the tables below, or (ii) the emissions limits developed for this permit due to an emergency, malfunction, or cleaning shall not be deemed a "Federally Permitted Release," as that term is used in 42 U.S.C. 9601(10).

1. Criteria Pollutant Emission Limits

Criteria Pollutants	ppmvd @ 15% O_2	lb/hr	lb/MMBTU	tpy
$PM_{2.5}$		3.67	0.042	16.1
PM_{10}		3.67	0.042	16.1
SO_x		0.07	0.001	0.3
NO_x	15.0	5.26	0.06	23.0
VOC		0.31	0.003	1.3
CO	25.0	5.34	0.06	23.4

2. Hazardous Air Pollutant Emission Limits

The emissions of this unit shall not exceed the Maximum Allowable Stack Concentration for any hazardous air pollutant listed in RCSA Section 22a-174-29. [State-Only Requirement]

Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using emission factors from the following sources:

1. TSP/PM-10: AP-42 5th edition, Table 3.1-1, October 1996
2. NO_x, VOC, CO: Manufacturer's Guaranteed Data
3. SO_x: Mass balance calculation based on Iroquois' fuel gas sulfur content and assuming that all elemental sulfur is converted to SO_2.
4. Hazardous Air Pollutants: AP-42 5th edition, Table 3.1-3, April 2000 and Tables 29-1, 29-2 and 29-3 of RCSA §22a-174-29

The above statement shall not preclude the commissioner from requiring other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

PERMIT FOR FUEL BURNING EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART VII. STACK EMISSION TEST REQUIREMENTS (Applicable if -X- Checked)

A. Stack testing shall be performed in accordance with the latest Emission Test Guidelines available on the DEP website:

http://www.ct.gov/dep/cwp/view.asp?a=2684&q=322076&depNav_GID=1619

Stack emission testing shall be required for the following pollutant(s):

☒ $PM_{10}/PM_{2.5}$ ☐ SO_x ☒ NO_x ☒ CO ☐ VOC

☐ Other (HAPs): _____, _____,

B. The Permittee shall conduct initial stack testing within 60 days of achieving the maximum production rate, but not later than 180 days after initial startup. Test results must be submitted within 45 days after testing.

Testing being conducted pursuant to 40 CFR Part 60, the test report is to be submitted within 180 days after the initial startup date or within 60 days after reaching maximum production rate. [40 CFR §60.8(a)]

C. After the initial compliance stack test required in Part VII.A of this permit, testing shall be performed at least once every five years from the date of the initial compliance stack test required in Part VII.A of this permit for all pollutants listed in Part VII.A with the following exceptions:

- After the initial stack test, stack testing may not be required for pollutants requiring CEMs. The commissioner retains the right to require stack testing of any pollutant at any time to demonstrate compliance.

PART VIII. APPLICABLE REGULATORY REFERENCES

RCSA §§22a-174-3a; 22a-174-18; 22a-174-19; 22a-174-29(b); 22a-174-22

These references are not intended to be all inclusive - other sections of the regulations may apply.

FIRM NAME: Iroquois Pipeline Operating Company
EQUIPMENT LOCATION: 78 High Meadow Road, Brookfield, CT 06804
EQUIPMENT DESCRIPTION: Solar Turbines Taurus 70 turbine with SoLoNOx (Unit 3)

Town No: 028 Premises No: 049 Permit No: 0028 Stack No: 3

PERMIT FOR FUEL BURNING EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART IX. SPECIAL REQUIREMENTS

A. The Permittee shall not operate this turbine in steady-state at less than 50% of the maximum load specified by the manufacturer.

B. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations. The Permittee shall operate and maintain this stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

C. The Permittee shall immediately institute shutdown of the turbine in the event a malfunction cannot be corrected within three hours.

D. The Permittee shall operate this facility at all times in a manner so as not to violate or contribute significantly to the violation of any applicable state noise control regulations, as set forth in RCSA Sections 22a-69-1 through 22a-69-7.4.

E. The Permittee shall comply with all applicable sections of the following New Source Performance Standard(s) at all times. (Applicable if -X- checked)

40 CFR Part 60, Subpart: ☐ Db ☐ Dc ☒ KKKK ☒ A ☐ None

Copies of the Code of Federal Regulations (CFR) are available online at the U.S. Government Printing Office website.

F. The Permittee shall notify the commissioner, in writing, of the commencement of construction, completion of construction and commencement of commercial operation of this source. Such written notifications shall be submitted no later than 30 days after the subject event.

PART X. ADDITIONAL TERMS AND CONDITIONS

A. This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

B. Any representative of the DEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.

PERMIT FOR FUEL BURNING EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART X. ADDITIONAL TERMS AND CONDITIONS, continued

C. This permit may be revoked, suspended, modified or transferred in accordance with applicable law.

D. This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons or municipalities who are not parties to this permit.

E. Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."

F. Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.

G. Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.

PERMIT FOR FUEL BURNING EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART X. ADDITIONAL TERMS AND CONDITIONS, continued

H. The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.

I. Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

SERVICE LIST

Proposed Final Decision
In the Matter of Iroquois Pipeline Operating Company
Application/PAMS No. 200701287

PARTIES	REPRESENTED BY
The Applicant	
Iroquois Pipeline Operating Company Jeffrey Bruner, Esq. Paul W. Diehl, Esq. One Corporate Drive, Suite 600 Shelton, CT 06484-6211	Philip Small, Esq. Michael Kozlik, Esq. Brown Rudnick LLP City Place 1 185 Asylum Street Hartford, CT 06103
Department of Environmental Protection	
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PETITIONER	
Kerry Brooks Swift 25 Pocono Ridge Road Brookfield, CT 06804	
INTERESTED PERSONS	
Ronald E. Schroeder, PE Quonset Environmental Associates 116 Wood Street Bristol, RI 02809	
Town of Brookfield	Thomas Beecher, Esq. Collins, Hannfin,Garamella, et al. 148 Deer Hill Avenue Danbury, CT 06810