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March 3, 2015

VIA ELECTRONIC MAIL AND HAND-DELIVERY

Mr. Robert Stein, Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Docket No. 192B—Towantic Energy, LLC Motion to Reopen and Modify the June 23, 1999 Certificate of Environmental Compatibility and Public Need Based on Changed Conditions Pursuant to Connecticut General Statutes §4-181a(b) for the Construction, Maintenance and Operation of a 785 MW Dual-Fuel Combined Cycle Electric Generating Facility Located North of the Prokop Road and Towantic Hill Road Intersection in the Town of Oxford, Connecticut—*CPV Towantic, LLC's Additional Submittals and Requests for Administrative Notice*

Dear Chairman Stein:

On behalf of CPV Towantic, LLC ("CPV"), enclosed are sixteen (16) copies of the following documents:

1. Additional FAA Information, including a resume for Mr. Clyde Pittman;

2. Letter to Mr. Doug Hoskins at CT DEEP, dated February 25, 2015. (The attachments to the letter are being submitted as a bulk exhibit. Specifically, CPV is submitting one hard copy of the attachments and a flash drive containing the attachments);

3. Analysis of Proposed Facility's Consistency with the Connecticut 2014 Draft Integrated Resource Plan;

4. Gas Interconnection Update; and

5. A copy of Judge Satter's unpublished decision in *Citizens for the Defense of Oxford v. Connecticut Siting Council,* No. CV990497075S (November 14, 2000), which discusses the public benefit standard the Connecticut Siting Council (Council) is required to apply to electric generating facilities. CPV Towantic, LLC requests that the Council take administrative notice of this decision.

Additionally, CPV Towantic, LLC requests that the Council take administrative notice of the following documents:

Connecticut Siting Council Decisions

1. **DOCKET NO. 189** - Lake Road Generating Company, L.P. Certificate of Environmental Compatibility and Public Need for an electric generating project located off of Lake Road in Killingly, Connecticut. (Findings of Fact), (Opinion), and (Decision and Order).

2. **DOCKET NO. 225** - Kleen Energy Systems, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of an Electric Generating Facility and Switchyard on River Road, Middletown, Connecticut.

United States Environmental Protection Agency

1. National Ambient Air Quality Standards for Particulate Matter; Final Rule, 78 Federal Register 3085 (January 15, 2013) available at http://www.gpo.gov/fdsys/pkg/FR-2013-01-15/pdf/2012-30946.pdf.

Please contact Franca L. DeRosa, Esq. or me at (860) 509-6500 with any questions.

Very truly yours,

BROWN RUDNICK LLP

Philip M. Small
Counsel for CPV Towantic, LLC

PMS/jmb
Enclosures
cc: Service List

61868710 v1-022345/0005

CERTIFICATE OF SERVICE

This is to certify that on this 3rd day of March, 2015, the foregoing document was sent via electronic mail, and/or first class mail, to the persons on the attached service list.

By: _____
Philip M. Small

SERVICE LIST OF PARTIES AND INTERVENORS

Status Granted	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Applicant	CPV Towantic, L.L.C.	Franca L. DeRosa, Esq. Philip M. Small, Esq. Brown Rudnick LLP 185 Asylum Street Hartford, CT 06103 (860) 509-6500 (860) 509-6501 — fax fderosa@brownrudnick.com psmall@brownrudnick.com
Party	Jay Halpern 58 Jackson Cove Road Oxford, CT 06478 h: (203) 888-4976 zoarmonster@sbcglobal.net Peter Thomas 72 Towantic Hill Road Oxford, CT 06478 (203) 720-1536	
Intervenor	Town of Middlebury	Attorney Dana A. D'Angelo Law Offices of Dana D'Angelo, LLC 20 Woodside Avenue Middlebury, CT 06762 (203) 598-3336 (203) 598-7283 – fax Dangelo.middlebury@snet.net Stephen L. Savarese, Esq. 103 South Main Street Newtown, CT 06470 203-270-0077 attystephensavarese@gmail.com

Intervenor	The Connecticut Light and Power Company (CL&P)	Stephen Gibelli, Esq. Associate General Counsel The Connecticut Light and Power Company P.O. Box 270 Hartford, CT 06141-0270 (860) 665-5513 (860) 665-5504 –fax gibels@nu.com John R. Morissette Manager-Transmission Siting and Permitting The Connecticut Light and Power Company P.O. Box 270 Hartford, CT 06141-0270 (860) 665-2036 morisjr@nu.com Christopher R. Bernard Manager, Regulatory Policy (Transmission) The Connecticut Light and Power Company P.O. Box 270 Hartford, CT 06141-0270 (860) 665-5967 (860) 665-3314 – fax bernacr@nu.com Stella Pace, Senior Engineer The Connecticut Light and Power Company Transmission and Interconnection Dept. P.O. Box 270 Hartford, CT 06141-0270 (860) 665-3569 pacess@nu.com Jeffery D. Cochran Northeast Utilities Service Company 107 Selden Street Berlin, CT 06037 860-665-3548 cochrjd@nu.com
Party	Town of Oxford	Kevin W. Condon, Esq. Condon & Savitt PC P.O. Box 570 Ansonia, CT 06401 203-734-2511 condonsavitt@comcast.net
Party	Naugatuck Valley Chapter Trout Unlimited	Robert M. Perrella, Vice President TU Naugatuck/Pomperaug Valley Chapter 278 W. Purchase Road Southbury, CT 06488-1004 johnnytroutseed@charter.net

Intervenor	Town of Southbury	Ed Edelson First Selectman Town of Southbury 501 Main Street Southbury, CT 06488 (203) 262-0647 (203) 264-9762 – fax selectman@southbury-ct.gov
Party	The Pomperaug River Watershed Coalition	Len DeJong, Executive Director Pomperaug River Watershed Coalition 39 Sherman Hill Road, C103 Woodbury, CT 06798 203-263-0076 LDeJong@pomperaug.org
Intervenor (approved 06/07/06)	Raymond Pietrorazio 764 Charcoal Avenue Middlebury, CT 06762-1311 (203) 758-2413 (203) 758-9519 – fax ray@ctcombustion.com	
Intervenor (approved 10/10/06)	GE Energy Financial Services, Inc.	Jay F. Malcynsky The Law Offices of Jay F. Malcynsky, P.C. One Liberty Square New Britain, CT 06051 (860) 229-0301 (860) 225-4627 – fax Jmalcynsky@gaffneybennett.com
Intervenor (Approved 11/13/14)	Borough of Naugatuck and Borough of Naugatuck Water Pollution Control Authority	Edward G. Fitzpatrick, Esq. Alicia K. Perillo, Esq. Fitzpatrick, Mariano, Santos, Sousa, PC 203 Church Street Naugatuck, CT 06770 203-729-4555 Fitz@fmslaw.org Alicia@fmslaw.org Ronald Merancy, Chairman Water Pollution Control Authority 229 Church Street Naugatuck, CT 06770 203-720-7000 Rjm62159@aol.com
Intervenor (Approved 1/8/15)	Wayne McCormack 593 Putting Green Lane Oxford, CT 06478 wayne@waynemccormack.com	

Intervenor (Approved 1/8/15)	Naugatuck River Revival Group, Inc.	Kevin R. Zak, President Naugatuck River Revival Group, Inc. 132 Radnor Avenue Naugatuck, CT 06770 203-530-7850 kznrrg@sbcglobal.net
Intervenor (Approved 1/8/15)	Westover Hills Subdivision Homeowners	Chester Cornacchia Westover Hills Subdivision Homeowners 53 Graham Ridge Road Naugatuck, CT 06770 203-206-9927 cc@necsonline.com
Intervenor (Approved 1/8/15)	Westover School	Kate J. Truini Alice Hallaran Westover School 1237 Whittemore Road Middlebury, CT 06762 203-758-2423 ktruini@westoverschool.org ahallaran@westoverschool.org
Intervenor (Approved 1/8/15)	Greenfields, LLC and Marian Larkin	Edward S. Hill, Esq. Cappalli & Hill, LLC 325 Highland Avenue Cheshire, CT 06410 203-272-2607 ehill@cappallihill.com
Intervenor (Approved 1/8/15)	Lake Quassapaug Association, LLC	Ingrid Manning, Vice President Lake Quassapaug Association, LLC P.O. Box 285 Middlebury, CT 06762 203-758-1692 Ingridmanning2@gmail.com
Intervenor (Approved 1/8/15)	Middlebury Land Trust, Inc.	W. Scott Peterson, M.D., President Middlebury Land Trust, Inc. 317 Tranquility Road Middlebury, CT 06762 203-574-2020 wsp@aya.yale.edu
Intervenor (Approved 1/15/15)	Quassy Amusement Park	George Frantzis Quassy Amusement Park P.O. Box 1107 Middlebury, CT 06762 203-758-2913 x108 George@quassy.com

Intervenor (Approved 1/15/15)	Middlebury Bridle Land Association	Nancy Vaughan Middlebury Bridle Land Association 64 Sandy Hill Road Middlebury, CT 06762 203-598-0697 ndzijavaughan@gmail.com
Intervenor (Approved 1/15/15)	Dennis Kocyla 28 Benz Street Ansonia, CT 06401 203-736-7182 Dennis3141@yahoo.com	
Intervenor (Approved 1/15/15)	Naugatuck Valley Audubon Society	Sophie Zyla Jeff Ruhloff Carl Almonte Naugatuck Valley Audubon Society 17 Stoddard Place Beacon Falls, CT 06403 203-888-7945 NVASeditor@mail.com
Intervenor (Approved 1/15/15)	Oxford Flying Club	Burton L. Stevens Oxford Flying Club P.O. Box 371 Woodbury, CT 06798 203-236-5158 bstevens@snet.net

1.

Additional FAA Information

Witness: **Lynn Gresock**
Clyde Pittman

Additional FAA Information

CPV Towantic, LLC ("CPV") submitted the following two documents to the Federal Aviation Administration ("FAA") on February 27, 2015 in connection with the FAA circularization process: (1) Letter from CPV's aviation consultant, Clyde Pittman of Federal Airways & Airspace, dated February 27, 2015 ("Pittman Letter"); and (2) Power Point presentation by CPV's aviation consultant ("Presentation"). These two documents and Mr. Pittman's resume are attached.

These documents address and rebut many of the assertions raised in this docket by Mr. Stevens and by Mr. Pietrorazio. Specifically, these documents address both the proposed stacks and thermal plumes. As the Pittman Letter submitted to the FAA outlines, thermal plumes from power plants have consistently been determined by the FAA to have minimal risk to aircraft. CPV notes that these issues are within the jurisdiction of the FAA, and are being duly considered within the FAA circularization process. However, CPV submits the following information in response to claims made during the February 24, 2015 hearing.

Invisible plumes do not pose significant risk, even to student pilots

Page 3 of the Pittman Letter describes three tests that the FAA conducted to "assess aircraft handling characteristics and responses when penetrating a convective thermal plume emanating from a power plant." As described in the Pittman Letter, the FAA concluded that the power plant plumes posed no threat to pilot or aircraft safety, even for "a student pilot with limited experience."

Further, if pilots are properly following applicable requirements and protocols, under visual flight rule ("VFR") conditions they must maintain a minimum altitude of 1,700 feet AMSL (720 feet above the proposed stacks in the vicinity of the Facility). Additionally, FAA regulation 14 CFR §91.119 requires aircraft under VFR conditions to maintain a minimum height of 500 feet above objects, including stacks, and 14 CFR §91.13 requires pilots not to behave in a reckless manner. As discussed in the attached Presentation, there are other existing tall structures, ground elevation and vegetation in close proximity to the proposed Facility site that would require pilots to maintain the 500 foot separation, except when descending to land. Under instrument flight rule ("IFR") conditions, the pilots would have to maintain a minimum elevation of 1,280 feet AMSL, which is a distance of at least 300 feet above the proposed stacks, and should rely on their instruments to maintain the published altitude.

Visible plumes will not impede the control tower's view of aircraft

Mr. Stevens expressed concern that visible plumes would significantly impair the ability of air traffic controllers in the Waterbury-Oxford Airport control tower to see aircraft. In fact, the visible plumes would only interrupt the controller's line of sight for very short periods. Specifically, at 41-109 nautical miles/hour (knots), which is the typical range for a Cessna

172 light sport aircraft,[1] a plane will travel 69-184 feet/second. As a result, a light sport aircraft would be expected to fully traverse a thermal plume in approximately 2 - 5 seconds.[2] Most likely, the aircraft's limited visibility to the air traffic controller would be even less due to the nature of plume rise. Given that a plume would only limit the controller's visibility for a very short period of time, there is no reason for a pilot to alter his/her course based on visibility issues.

Other airports have power plants in close proximity, including in the left downwind leg of their VFR traffic pattern

As previously discussed during the hearings, there are a number of other airports in Connecticut located near power plants with large stacks, including in Hartford (Brainard) and Bridgeport (Sikorsky). These Connecticut airports have operated for many decades without stack-related incidents.

Additionally, based on a review of all FAA Determinations of No Hazard ("DNH") from 1960 to the present, over 300 structures either built or pending have received a DNH for locations within 13,000 feet of airports in the United States. Many are located as close or closer than the proposed stacks.

Mr. Stevens asserts that he is unaware of any other situation in the United States in which a power plant is located in the left downwind leg of the traffic pattern, which he claims is the "worst" possible location. In fact, the critical phases (e.g., climb, descent) are considered the more vulnerable periods of flight; based on a cursory review of the DNH data, over 20 exhaust stacks that are at least 100 feet tall appear to be located in such an orientation. With regard to exhaust stacks in the downwind leg, six facilities were noted in a cursory review that focused on structures within 1.25 nautical mile ("NM")[3] of runways, including:

- A 348-foot tall exhaust stack associated with a pellet-burning facility located approximately 0.58 NM abeam and within the downwind leg of the Millinocket Municipal Airport Runway 34 in Maine. In addition, stack exhaust from this type of facility would have considerably higher moisture content and would be expected to result in more expansive exhaust plumes than for a combined cycle combustion turbine.
- Five 150-foot exhaust stacks associated with an electric generating facility firing both natural gas and fuel oil, located approximately 0.68 NM abeam and within the downwind leg and close to the descent area of the Westover Airbase and Metropolitan Airport Runway 23 in Chicopee, Massachusetts.
- Two 218-foot exhaust stacks associated with the Astoria Energy 550 MW combined cycle generating facility, located 0.82 NM abeam and within the downwind leg of LaGuardia Airport Runway 4 in New York.

[1] Maximum speed 118 knots; cruising speed 109 knots; stall speed 41 knots.
[2] Based on the 2012 SAIC Report which stated the minimum horizontal clearance for plumes associated with the proposed CPV Towantic Energy plant was 320 feet.
[3] The VFR traffic pattern for Category 'A' aircraft for Runway 18 at the Waterbury-Oxford Airport.

- One 175-foot stack associated with a 300 MW dual fueled combined cycle power plant, located 0.95 NM abeam and within the downwind leg of Faribault Municipal Airport Runway 12 in Minnesota.
- Two 160-foot "smokestacks" associated with the Hanscom Airforce Base, located 1.1 NM abeam and within the downwind leg of Hanscom Field Airport Runway 29 in Lexington, Massachusetts.
- One 175-foot boiler plant exhaust stack associated with the Maine Medical Center, located 1.2 NM abeam and within the downwind leg of Portland International Airport Runway 18 in Maine.

No stack- or plume-related incidents were noted in a review of NTSB records from 2007 to the present for the above airport runways.

<u>The heights of the proposed two stacks are not a problem for pilots</u>

At the February 24th hearing, Mr. Stevens testified that the height of the stacks for the proposed Facility do not pose a problem for pilots.

<u>Traffic patterns do not put small aircraft directly above the proposed two stacks</u>

The airport's FAA FAR Part 150 Noise Study, published in October 2008, indicates that Runway 36 handles approximately 73% of aircraft operations due to the prevailing northerly/northwesterly winds and the designation as the calm wind runway; airport procedures do not result in aircraft in the vicinity of the proposed stacks when using Runway 36.

Mr. Stevens claims that current traffic patterns put small aircraft directly above the stacks. Although it is possible for aircraft using Runway 18 to be above the location of the proposed stacks, known aircraft turning radii, published traffic patterns for Waterbury-Oxford Airport, and good aviation practice require Category 'A' aircraft (which would include light sport) to fly approximately 1.25 NM east of the runway in order to safely manage their approach. This would place the aircraft approximately 0.6 NM east of the proposed Facility stacks. Airspace further east would also be available to Category 'A' aircraft.

<u>Aircraft should be well above stack top height and not in a critical phase area</u>

Mr. Stevens also claims that the stacks would be within the area where the pilot starts his/her descent into the Waterbury-Oxford Airport. However, in accordance with FAA Order 7400.2k, the area abeam the runway is not the descent area; the climb/descent area is forward of the runway. Additionally, FAA-H-8083-3A, "The Airplane Flying Handbook, which Mr. Stevens references, states "Pattern altitude should be maintained until abeam the approach end of the landing runway."

Additionally, as stated on page 3 of the Pittman Letter, FAA Order 8260.3B, Change 21, specifies a 0.4 nautical mile Straight Segment Length. Therefore, the entire length an aircraft is abeam of the runway, a Category 'A' aircraft would fly in a level wing position.

Given the position of the proposed stack, this means that aircraft would be in level wing position for 1,544 feet past the location of the proposed stacks before becoming parallel to the runway end, and initiating a turn to begin its descent.

Mr. Stevens alleged adverse effects

In the next to last paragraph of his letter to the FAA, dated February 23, 2015, which was admitted as an exhibit by the Council, Mr. Stevens argues that the FAA should find a hazard to air navigation primarily due to impacts on aeronautical operations and traffic patterns. These claims are fully rebutted in the Pittman Letter (see page 4) and in the Presentation.

Former FAA approvals for Facility, including plume considerations

During the February 24th hearing, Mr. Stevens claimed that the FAA had last approved the stacks for the Facility in 1999 and "prior to any significant concerns about the production of plumes." This is not correct, as shown on the FAA Review History-Best Available Information, attached to CPV's Late Filed Exhibit 2b, dated January 22, 2015, and attached hereto.

First, the FAA's most recent approval (in the form of a Determination of No Hazard) of the stacks was issued in 2009 and expired in 2011. This followed previous Determinations of No Hazard and Extensions of Determinations of No Hazard in 1999, 2000, and 2002. Second, in 2009, the FAA specifically notes its review of information regarding plumes in issuing the Determination of No Hazard for this Facility.

Federal Airways & Airspace®

February 27, 2015

Attn: Darin Clipper, Specialist

Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
2601 Meacham Boulevard
Fort Worth, Texas 76193

Re: *Aeronautical Study Nos. 2014-ANE-1770-OE; 2014-ANE-1771-OE; 2014-ANE-1908-OE*

Dear Mr. Clipper:

Federal Airways & Airspace has been retained to advise CPV Towantic, LLC on its proposed project in Oxford, Connecticut with regard to airport, air navigation, and Federal Aviation Administration (FAA) concerns. In addition to the comments specifically provided in response to the circularization of this project, we noted that considerable mention during the Connecticut Siting Council process has been made of exhaust from the proposed stacks and associated potential effect on navigation.

We recognize that the FAA is only considering the structures in its determination process, and that the FAA has evaluated the potential effect of exhaust plumes from similar stacks many times in the past. Each time, as most recently documented in the FAA's January 21, 2015 memorandum, "the FAA has determined the overall risk associated with thermal exhaust plumes in causing a disruption in flight is low." The FAA also notes that "…thermal exhaust plumes in the vicinity of airports may pose a unique hazard to aircraft in critical phases of flight (particularly takeoff, landing and within the pattern)." Given some of the misrepresentations made in other permitting venues, we wish to provide facts to confirm that the locations of the proposed stacks (and associated exhaust plumes) do not overlay with "critical phases" for the Waterbury-Oxford Airport (OXC). We believe neither the stacks nor the associated exhaust should be considered a significant risk to navigation.

The Project is Not Located in a Critical Phase Area

The closest runway is 3,846 feet (0.63 NM) from the closest proposed stack. The stacks will be located abeam of the runway to the east at an elevation of 980 feet above mean sea level (AMSL).

As shown in Figure 1, Runway 18 has a left hand Traffic Pattern and small aircraft (Category 'A') when on the downwind leg for a Runway 18 landing are to be within 1.25 NM of the runway. The upwind leg for a Category 'A' aircraft is 0.25 NM from the runway centerline (please see Attachment 1). Thus, the FAA protects for a larger area than that defined by FAA-H-8083-3A, "The Airplane Flying Handbook." Runway 36 is also published as a "left hand" traffic pattern, which places the stacks east of the upwind leg for this runway, outside the protected area.

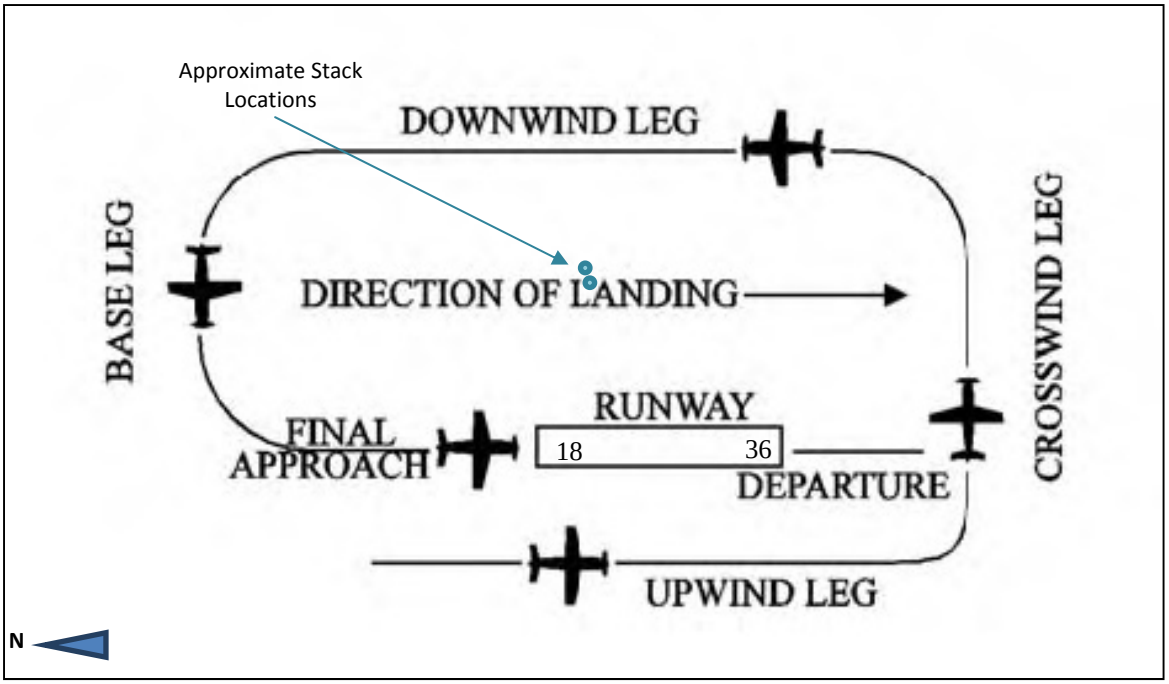


Figure 1: OXC VFR Traffic Pattern (Left-Hand) for Runway 18.

In accordance with FAA Order 7400.2K, Figure 6-3-9, the area abeam the runway is not the descent area. The climb/descent area is forward of the runway. FAA-H-8083-3A, Page 7-3 states the area abeam the runway is to be flown "at the specified traffic pattern altitude. " It also states, "Pattern altitude should be maintained until abeam the approach end of the landing runway." Thus, FAA Order 7400.2K and FAA-H-8083-3A agree the stacks are not in a location where a pilot is taught to start his/her descent to land.

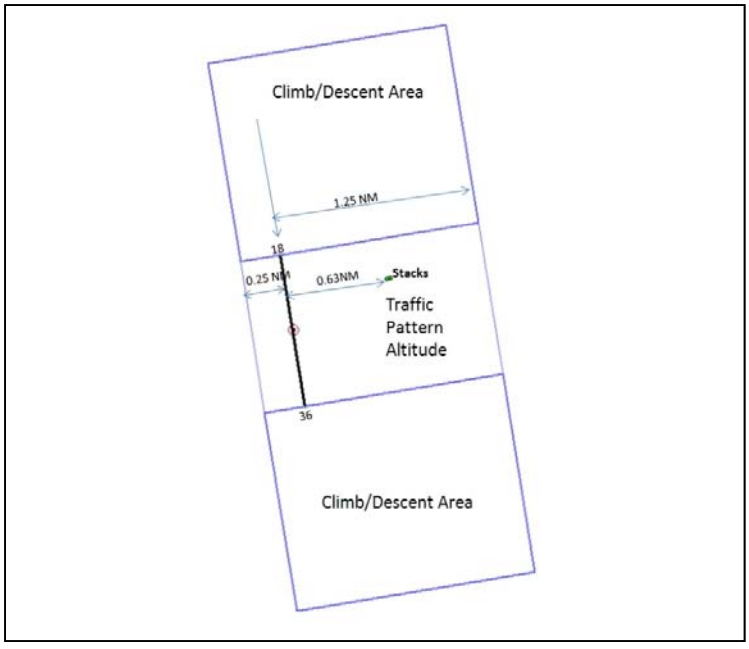


Figure 2: OXC Category 'A' VFR Traffic Pattern Runway 18 (Left).

Traffic Pattern Altitude (TPA) specified by the FAA, according to Aircraft Owners and Pilots Association (AOPA), is 1800 feet AMSL or 820 feet above the top of the proposed stacks. AOPA also lists the airport manager's recommended TPA as 1700 feet AMSL. This would be true for either runway, as shown in Figure 2. Please see Attachment 2 for explanation of AOPA recommended TPA.

Although most aircraft would be expected to fly at the TPA in the vicinity of the proposed project, certain activities under specific conditions could result in aircraft flying at lower elevations. Both Runway 18 and 36 have circling procedures for Category 'A', 'B', 'C' and 'D' aircraft. The IFR Circling Minimum Descent Altitude (CMDA) within the expanded Category 'A' circling area is 1280' AMSL, or 300' above the stacks; this reflects the lowest aircraft maneuver altitude in the vicinity of the project. This CMDA would be used when the cloud ceiling is lower than 1280 feet AMSL or the pilot could not see the runway to land;

however, it is not expected that the aircraft would be over the location of the proposed stacks when circling to land, as outlined below.

On May 2, 2013 the FAA expanded the criteria for protected areas for circling to land approaches because the previous circling areas did not always allow enough room for pilots to align the aircraft with the final approach and consistently achieve a stabilized approach. OXC now has the expanded circling areas published in their landing procedures. This increase in radii size accounts for greater true airspeeds and adverse wind gradients encountered at higher mean sea level (MSL) altitudes. These parameters would require aircraft on a normal circling approach to be, more likely than not, east of the stacks and not over the stacks when circling to land on Runway 18 or 36.

Even if an aircraft was circling at the CMDA in the vicinity of the proposed stacks, based on known aircraft turning radii, the aircraft would be in a level wing position. For example, the turning radius of a Category 'A' aircraft is defined in FAA Order 8260.3B as 1.3 NM. FAA Order 8260.3B, Change 21, specifies a 0.4 NM Straight Segment Length as the abeam distance past the end of the runway that is required for a Category 'A' aircraft with a velocity of 90 knots indicated airspeed and a bank angle of 25°. Therefore, Category 'A' aircraft would fly in a level wing position until at least 1,544 feet past the location of the proposed stacks before initiating a turn.

Missed approach paths and holding patterns associated with Runway 36 require left hand turns and would not occur over the proposed stack locations. Aircraft on a missed approach from Runway 18 would turn left, and could travel in the vicinity of the proposed stacks. However, the calculated height of aircraft in the vicinity of the stacks, given required climb rates, would be 484 feet above the stacks for Vertical Navigation (VNAV) conditions and 491 feet above the stacks for Lateral Navigation (LNAV) conditions. None of these aircraft would be considered in "critical phases" of flight.

The proposed stacks will not impact departure from either Runway 18 or 36. The published Takeoff Minimums specify straight-out departures. Runway 18 (to the South) has a standard climb of 200 feet per NM until 400 feet above the departure end of the runway (DER 36) is achieved or 2 NM before turning at the standard climb rate. The proposed stacks are not aligned with the end of the runways, and even if they were, would be lower than the substantially-buffered allowable heights (1223 feet AMSL for Runway 18 and 1144 feet AMSL for Runway 36). Therefore, there is no anticipated impact to any departure from Runways 18 or 36 at OXC.

Exhaust Plumes Have Been Determined to Have Minimal Risk

The FAA has published in 2014 a Guidebook for Energy Facilities Compatibility with Airports and Airspace, "ACRP Report 108." One of the purposes of the publication was to gain information on the effects of exhaust plume emissions. To meet this requirement the FAA conducted flight tests to "assess aircraft handling characteristics and responses when penetrating a convective thermal plume emanating from a power plant."

1. The Calpine Sutter Power Plant Test concluded; "the power plant plume did not represent a significant threat to GA aircraft operating at traffic pattern altitudes."
2. A second test, at the Indigo Energy Facility near Palm Springs, CA, concluded; "In all cases, the aircraft stabilized on its own within 1 second of exiting the plume. Consequently, the pilots had no difficulty maintaining control of their aircraft."
3. A third test, at the Walter E. Higgins Power Plant, near Primm, Nevada concluded; "Even at 500 ft above the facility, the aircraft was fully controllable and recovery from any dynamic upset was fully within the capability of a student pilot with limited experience."

Further, a report prepared for the FAA titled, "Analysis of the Impact of Vertical Plumes and Exhaust Effluent on Aviation Safety," published by SAIC in September 30, 2010 studies the question, "Can the vertical plumes induce unacceptable risk level to flying through aircraft and aircrew." The report

determined the expected time to transition a plume was 20 seconds or less. While aircraft in the immediate vicinity of the stack could experience the effect of turbulence or visual screening (under certain colder weather conditions), it would be momentary and no different than that associated with a small cloud.

In fact, this particular project (in a different configuration) was specifically evaluated both by SAIC in 2010 and by MITRE, Inc. in 2012. The SAIC report concluded that the plume-induced condensation clouds do not affect aviation safety. The MITRE report, using the same input data with a different model, concluded that the aircraft upset criteria were never reached for the project. A maximum horizontal distance for the plume with the potential to result in a "momentary loss of control" was calculated as 300'. The previous configuration had higher exhaust temperature and more rapid velocity that the current configuration; we would expect those prior results to conservatively reflect those from the current project.

Conclusion

An analysis of airport operations, FAA requirements, and studies of plume effect have indicated:

- No change in VFR operation regular course or altitude is required.
- There will be no impact to the ILS or Localizer to Runway 36, or to any of the RNAV procedures to Runway 36.
- An analysis of all instrument procedures to Runway 18 did not identify any impact associated with the project.
- The project structures and operation will not derogate airport capacity/efficiency.
- The project will not affect plans on file with the FAA. There are no plans on file to construct a new runway at this airport. While there is a proposed amendment 2 for the RNAV (GPS) Runway 18 (scheduled publication date: 6/25/2015), I do not expected to alter the inbound course or require a left turn when initiating the missed approach.
- Power plants in the vicinity of airports do occur, some even in the approach, such as PQL (Trent Lott International) with a 645 ft AMSL stack in the approach to Runway 17. This stack has not affected the capacity or efficiency of the airport. The airport even has a plan on file to extend Runway 17 towards the stack.

Therefore, we believe that neither the stacks nor the associated exhaust should be considered a significant risk to air navigation.

Thank you for your consideration. Should you have any questions or require additional information, please feel free to contact me at 321-777-1266.

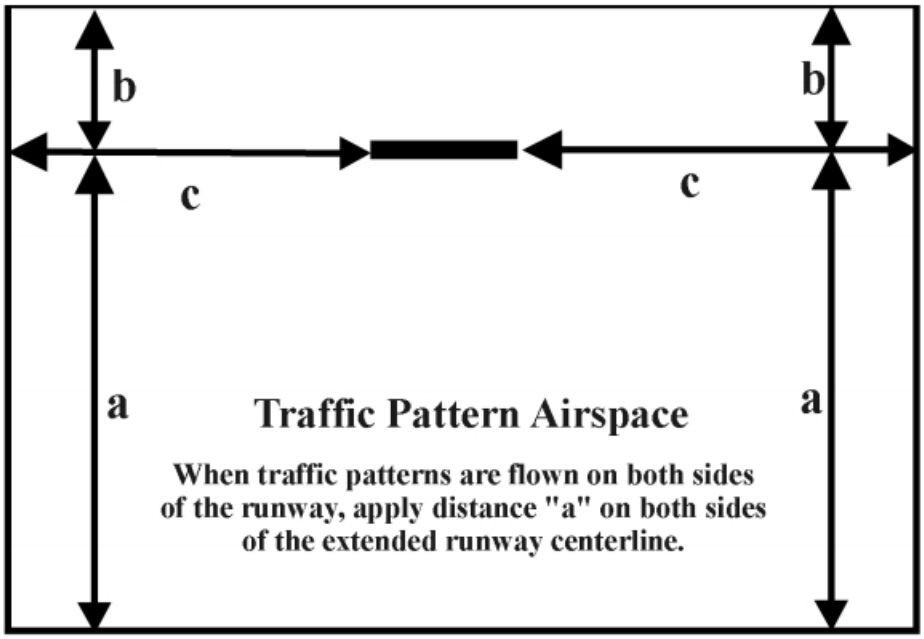
Sincerely,

Clyde Pittman
Aerospace Engineer.

Attachment 1: FAA Order 7400.2K, Change 1

FIG 6–3–9

TRAFFIC PATTERN AIRSPACE



Aircraft Category	Distance (nautical miles)			
	a	b	c	d*
A	1.25	.25	1.25	.375
B	1.5	.25	1.5	.5
C	2.25	.5	2.25	.875
D	4.0	.5	3.0	1.0

Attachment 2: AOPA Traffic Pattern Altitude

Operations & More Information

Lat/Long:	N41 28.7133' / W73 8.1150'
Charts:	NACO: New York Sectional
Mag Var:	14W (1995)
ARTCC:	New York (ZNY)
FSS:	Bridgeport (BDR) 1-800-WXBRIEF
NOTAM Facility:	OXC
Approach/Departure Control Facility	N90
Pattern Altitude:	(M) Tpa for Acft Up to 12500 Lbs 973 Ft Agl; Acft Ovr 12500 Lbs 1473 Ft AGL (AM) Light Aircraft: 1700 MSL; Heavy Aircraft: 2200 MSL
Wind Indicator:	Lighted
Seg. Circle:	Yes
Lighting:	Pilot Activated Lighting: high intensity: 7 clicks in 5 secs medium intensity: 5 clicks in 5 secs low intensity: 3 clicks in 5 secs (M) Actvt HIRL Ry 18/36 - CTAF

CPV Towantic Energy Center

2014-ANE-1770 and 1771-OE

2014-ANE-1908, 1909, 1910, 1911, and 1912-OE

2014-ANE-1923, 1924, 1925, and 1926-OE

Prepared by Federal Airways & Airspace®

Federal Airways & Airspace®

The Project

- Proposed dual-fueled electric generating facility
- CPV Towantic recently cleared the ISO-NE capacity auction
  - The project is a needed new source of electrical power that will now be counted on to serve Connecticut and other New England states
  - Providing clean energy that will replace retirement of existing power generating facilities
  - Providing energy reliability for the state and the region
- Located at the intersection of high voltage electrical power transmission and natural gas pipelines.
- Located within the Airport Economic Development Zone, established in 2013 by the State of Connecticut, and the Woodruff Hill Industrial Park.

Summary of Prior FAA Review History

- The project was first issued Determinations of No Hazard for two stacks and other associated structures in 1999
  - 150-foot stacks were reviewed in 2009 (2008-ANE-416-OE, 2008-ANE-417-OE) and a circularization process resulted in Determinations of No Hazard associated with penetration of:
    - VFR Horizontal Surface
    - Circling Minimum Descent Altitude
  - Most recent extensions/approvals for other structures were issued in 2011
- Prior cases were withdrawn in 2012 to consider potential project updates

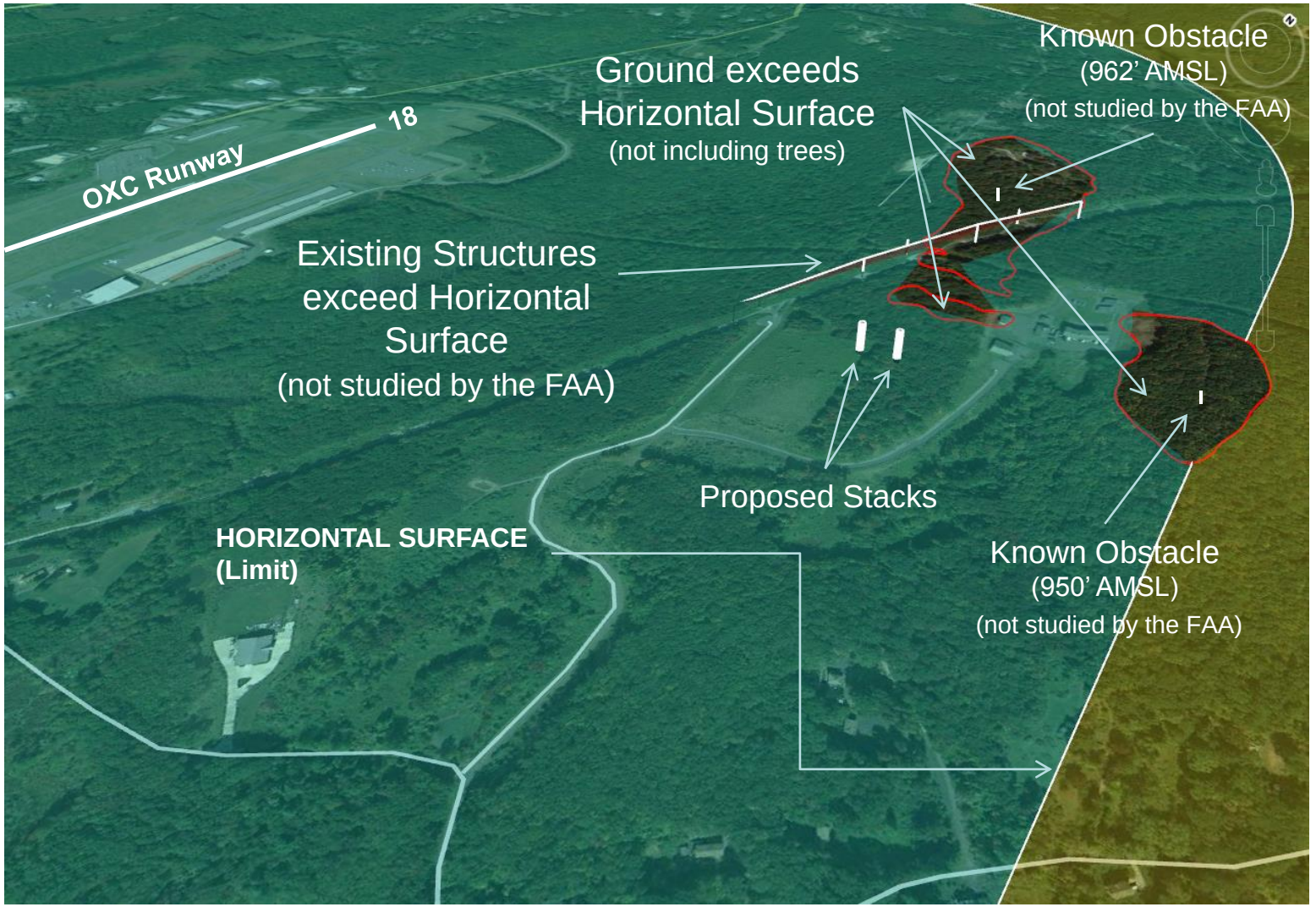
Current Submittal

- Updated project includes changes that reduce potential affect on airport surfaces
  - Project stacks relocated 378 feet to the east to avoid the Runway 18 LNAV Procedure, Primary Area
  - Base ground elevation reduced 1 foot to avoid penetration of the Circling Minimum Descent Altitude
  - Structure heights decreased (e.g., three smaller enclosures replacing a single taller building)
- Updated project stacks and other elements were resubmitted to FAA in 2014 with 1A surveys
- Notifications of Presumed Hazard issued due to penetration of the VFR Horizontal Surface

Discussion

- The VFR Horizontal Surface extends 5,000 feet from the airport at a height of 876 feet AMSL horizontal
- The proposed stacks and other project structures do exceed the OXC Horizontal Surface, as was the case for prior Determinations of No Hazard.
- Ground elevation and existing undocumented structures penetrate the Horizontal Surface at locations near the project.
  - Five unmarked and unlit electric transmission towers
  - 1A surveys indicate the tallest was constructed in 2013-14, with a height of 960.94 feet AMSL
  - Ground elevation penetrates the VFR Horizontal surface, which does not include the substantial tree growth (estimated at > 50 feet AGL)
  - Known obstacles with a height of 962 and 950 feet AMSL, not studied by the FAA

Existing Penetrations



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Traffic Pattern Altitude (TPA)

- Aircraft should be at a minimum of between 720 feet and 823 feet above the top of the stack when flying the VFR, and generally more.
  - Aircraft up to 12,500 lbs are to maintain 973 feet above ground level (1,803 feet AMSL; 823 feet above the stacks).*
  - Aircraft over 12,500 lbs are to maintain 1,473 feet above ground level (2,203 feet AMSL; 1,323 feet above the stacks).*
  - Airport Manager recommends light aircraft 1,700 feet AMSL and heavy aircraft 2,200 feet AMSL (720 feet and 1,220 feet above the stack, respectively).
- FAA Order 7400.2 states that structures up to 500 feet AGL may be acceptable in the level portion of TPA

* Source: AOPA

Circling and Other Air Traffic

- The project avoids penetrations to the Circling Minimum Descent Altitude
- Missed approach procedures should not occur in the vicinity of the proposed structures
  - Runway 36 ILS/LOC Procedure will have aircraft turning in the opposite direction
  - Runway 18 Procedure will have aircraft at a higher elevation
- The project is not located in the climb or descent area for either Runway 18 or Runway 36

VFR Horizontal Surface Implications

- With an air traffic pattern altitude in this area of 1,700 feet AMSL, minimum aircraft height would still be considerably above stack height.
- Existing penetrations are located in this area with no known history of issue.
- Providing obstacle lighting on the project stacks would improve the conspicuity of the existing terrain, trees, and transmission line penetrations.

Conclusion

- Approval of the stacks with obstacle lighting will not alter or affect any VFR aircraft any more than the existing undocumented penetrations already do.
- The cumulative effect of the stacks will not change the aeronautical environment from what exists today.
- The stacks will improve safety within the aeronautical environment by acting as a marker for existing, unmarked, undocumented penetrations.

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Work Experience

Director of Engineering

Federal Airways & Airspace® — Satellite Beach, FL — 1998 - Present

Designed and developed Airspace OMS Advanced Software (Airspace® Manager, TERPS® Advanced and Airspace® Survey). The Airspace OMS Commercial software is used throughout the United States to determine height restrictions specified under FAR Part 77 and assess the aeronautical impact of structures on Instrument Flight Procedures.

Supervisor of Electronic Engineering, AGL-472

Federal Aviation Administration — Chicago, IL — 1995 – 1997

- Managed Electronic Engineering Program for the Federal Aviation Administration Great Lakes Region.
- Program Manager for Automated Flight Data Processing System used in new Chicago O'Hare Airport Traffic Control Tower and TRACON.

Supervisor of Spectrum Engineering, AGL-483

Federal Aviation Administration — Chicago, IL — 1992 – 1995

- Managed and assigned aeronautical spectrum for all aviation electronic facilities for the Federal Aviation Administration's Great Lakes Region.
- Created and established 1st National Spectrum Monitoring Network that was designed to target and apprehend Phantom Controllers.
- Great Lakes representative at National Airspace Improvement Committee.

Program Manager, AGL-427

Federal Aviation Administration — Chicago, IL — 1978 – 1992

- Managed Terminal Systems (ATCT) Program for the Federal Aviation Administration's Great Lakes Region.
- Managed Communications & Interfacility System's Program for the Federal Aviation Administration's Great Lakes Region.
- Managed Instrument & Visual Landing Systems Program for the Federal Aviation Administration's Great Lakes Region.
- Managed Environmental Systems Program for the Federal Aviation Administration's Great Lakes Region.
- Designed and implemented Automated Budget System Program.
- First FAA implementation of computer managed program schedules.
- Managed Airways Facilities aeronautical studies program.
- Great Lakes, Airway Facilities Division representative at National Airspace Conferences.

Electrical Engineer, AGL-436

Federal Aviation Administration — Chicago, IL — 1977 – 1978

- Designed electrical distribution systems for on airport communication and navigation system for the Federal Aviation Administration's Great Lakes Region.
- Attended FAA Academy at Oklahoma City on Visual Guidance Systems.

Electronic Engineer, AAF-420

Federal Aviation Administration — Washington, D.C. — 1977 – 1978

- Managed the electronic system outage program for electronic landing system for the entire FAA.

Electronic Engineer, ASO-450

Federal Aviation Administration — Atlanta, GA — 1972 – 1977

- Installed and commissioned electronic systems (ILS, VOR, ATCT, ASR, and ARTCC Radar & Computer Systems) throughout the Southeast US, Puerto Rico, and US Virgin Islands.
- Attended FAA Academy at Oklahoma City on Electronic Landing Systems. Highest Class Grade.
- Designed the electronic weather system for the Airport Traffic Control Tower at Atlanta Harts Field.

Education

University of Florida — Gainesville, FL — 1966-1971
- **BS Electronic Engineering**

NASA School — Kennedy Space Center, FL — 1971-1972
- **Launch Complex 39 Egress Systems -** Emergency Evacuation
- **Logic Design -** Utilizing Digital Circuits
- **Digital Systems Engineering -** Utilizing Digital Circuits
- **Toxic Propellant Safety -** Understanding Rocket Fuel safety

FAA Academy — Oklahoma City, OK — 1975-1978
- **ILS Equipment -** ILS installation and setup
- **Instrument Landing Systems Concepts -** Design and Construction of Instrument Procedures (Terminal & Enroute)
- **Advanced ILS/VOR Principles -** Electronic Landing Systems.
- **Visual Landing Aids -** Visual Landing Systems. Highest Class Grade

Harper College — Schaumburg, IL — 1978 - 1980
- **Environmental Impact -** Organic Chemistry II, Organic Chemistry I, Zoology, Basic Organic Chemistry, Environmental Biology

FAA Academy — Oklahoma City, OK — 1981 - 1981
- **Obstruction Evaluation and Airport/Airspace Analysis** - FAR Part 77, Airport Layout Plans, Airport Airspace Analysis

OPM — Chicago, IL — 1983 - 1983
- **OPM Budget Estimating Techniques -** Data Management

Harper College — Schaumburg, IL — 1983 - 1983
- **Electronic Spreadsheet for Microprocessors -** Data management
- **Data management for Microprocessors -** Data Management
- **Computer and Data Processing -** Data management

Data General — Schaumburg, IL — 1984 - 1985
- **AOS/VS User Training -** Operating System Training
- **How to Generate and Run AOS/VS -** Operating System

FAA Academy — Oklahoma City, OK — 1984 - 1986
- **Flight Procedures Analysis -** TERPS. Highest Class Grade
- **Program Analysis and Review -** Data Management

Harper College — Schaumburg, IL — 1986 - 1986
- **Computer Aided Design (AutoCAD) -** Graphics Development

FAA Academy — Palm Coast, FL — 1994 - 1995
- **Management Phase I** - Introduction to management
- **Management Phase II -** Team Building

Microsoft Partner — Chicago, IL — 1997 - 1997
- **Computer Software Design** – Software Engineering and Design

Florida Institute of Technology — Melbourne, FL — 1997 - 1997
- **Aeronautical Studies -** Automated Processing of Aeronautical Studies Using AutoCAD

Harper College — Schaumburg, IL — 1998 - 1998
- **Web Hosting -** Design and host world wide web pages

Security Clearance	Top Secret Clearance 1997-1993 & 1971 - 1972
Civil Service Grades	GS-855-14 (1992 – 1997), GS-801-14 (1991-1992), GS-801-13 (1978 – 1991), GS-850-12 (1977 – 1978), GS-855-11 (1976 – 1977), GS-855-09 (1972-1976), GS-855-07 (1971 – 1972)

Awards and Recognition

- Director of Engineering of Airspace® and TERPSs® Software used nation wide for the analysis of structures to ensure compliance with Federal Aviation Regulations Part 77 and Instrument Approach Procedures, FA&A
- Managed the development of Automated Flight Data Processing System (AFDPS) (see attached Chicago Tribune article 2/22/1998) , FAA
- Automation Presentation at Seattle Airspace Conference, FAA
- Development various devices to aid hearing impaired (see attached KSC Spaceport article October 1971)
- Presentation at Seattle Airspace Conference on Automation
- Outstanding Performance for Development of AFDPS, 1996, FAA
- Distinguished Performance for Supervision, 1993, FAA
- Quality within Grade Award, 1993, FAA
- Outstanding Performance 1992, FAA
- Letter of Appreciation from Congressman Les Aspen (WI) for outstanding work on Kenosha, WI ATCT, 1992
- Certificate of Recognition for work on VSCS Program, 1991, FAA
- Exceptional Performance, 1991, FAA
- Exceptional Performance, 1990, FAA
- Exceptional Performance, 1989, FAA
- Letter of Appreciation from Ohio Department of Transportation, Chief Bureau of Aviation John B. Cornett, 1989, ODOT
- Outstanding Performance 1988, FAA
- Quality within Grade Award, 1988, FAA
- Exceptional Performance, 1987, FAA
- Exceptional Performance, 1986, FAA
- Exceptional Performance, 1985, FAA
- Exceptional Performance, 1984, FAA
- Exceptional Performance, 1983, FAA
- Outstanding Performance 1982, FAA
- Quality within Grade Award, 1982, FAA
- Exceptional Performance, 1981, FAA

CPV Towantic

FAA Review History – Best Available Information

Date	Action
6/21/1999	FAA issued a Determination of No Hazard for original location of stacks at elevation of 146 feet AGL or 980 feet AMSL (1999-ANE-52-OE)
2/17/2000	Towantic moved the stack locations about 300 feet and raised the elevation to 150 feet AGL
9/15/2000	The Determination of No Hazard was extended to 2/25/2002
1/31/2001	The FAA denied a petition for discretionary review, rejecting a claim about water vapor impacts and the stack relocations
7/24/2002	The Determination of No Hazard was extended to 1/24/04
2004 – 2007	Work on the project was suspended due to bankruptcy proceeding of project's then owner
3/31/2008	Form 7460-1 was filed for the two stacks (150 feet AGL/981 feet AMSL) and five other buildings in the development; the FAA initiated Aeronautical Studies 2008-ANE-416-OE and six others
5/20/2008	A Notice of Presumed Hazard was issued by FAA for the two stacks and three other structures; issues raised were the TERPS Circling Minimum Descent Altitude (exceeded by 18 feet), the Part 77 surface (exceeded by 105 feet), and Traffic Pattern Altitude. (2008-ANE-416-OE and 2008-ANE-417-OE)
Balance of 2008	Exchange of information to support circularization. During the circularization process, a single complaint was registered relative to the stack exhaust.
3/19/2009	FAA Determination of No Hazard issued for the 150-foot stacks (981 AMSL and within approximately 50 feet of identified location); lighting was required and the determination expired on 9/9/2010 (2008-ANE-416-OE and 2008-ANE-417-OE)
4/15/2009	Petition for discretionary review submitted by Mr. Raymond Pietrorazio citing FAA's analysis failing to take into consideration the effects of emissions in the Determinations of No Hazard
8/5/2009	FAA denies request for discretionary review reaffirms its Determination of No Hazard for Stacks #1 and #2 (2008-ANE-416-OE and 2008-ANE-417-OE) and other site structures (2008-ANE-420-OE through 2008-ANE-422-OE), sets expiration date for determinations of 3/5/2011
3/3/2011	Extensions to Determination of No Hazard granted for Air Cooled Condenser (2008-ANE-420-OE), Main Building (2008-ANE-421-OE) and Switchyard Towers (2008-ANE-422-OE)
6/13/2011	New applications submitted to FAA for Stack #1 and #2 (2011-ANE-1219-OE and 2011-ANE-1220-OE). FAA representative cited the need for new applications was triggered by the approval of new LPV approaches at the airport, although the new LPV matched the footprint of the existing ILS [not penetrated by the current layout]
6/17/2011	Determinations of No Hazard issued for two oil storage tanks (2011-ANE-825-OE and 2011-ANE-826-OE)
9/6/2011	FAA Notice of Presumed Hazard issued (2011-ANE-1219-OE and 2011-ANE-1220-OE)
2/2012	Applications withdrawn and aeronautical studies terminated due to pending addition of new joint venture partner and schedule uncertainty – although some coordination with the FAA continued; CPV Power Development, Inc., through its wholly owned subsidiary, acquires a majority interest in the project entity (now CPV Towantic, LLC)
6/6/2014	Form 7460-1 was filed for the two stacks (981 feet AMSL with base elevation of 831 feet) relocated further east
8/19/2014	Notice of Presumed Hazard issued citing the VFR Horizontal Surface and Expanded Category "A" Circling Approach Procedure (2014-ANE-931-OE and 2014-ANE-932-OE)

Date	Action
8/21/2014	Aeronautical study was terminated to adjust graded base elevation
8/26/2014	Form 7460-1 was filed for the two stacks (980 feet AMSL with base elevation of 830 feet), with 1A accuracy surveys (2014-ANE-1770-OE and 2014-ANE-1771-OE)
9/9/2014	Form 7460-1 filed for majority of other project-related structures that would penetrate the VFR Horizontal Surface, with 1A accuracy surveys
9/12/2014	Form 7460-1 filed for the four corners of the administrative/control/engineering building, with 1A accuracy survey; all elements of the project are linked for FAA review purposes
11/17/2014	Notices of Presumed Hazard issued for each filed facility element, as expected, citing the VFR Horizontal Surface
1/16/2015	Date by which further study, including a circularization for public comment, will be requested

3.

Analysis of Proposed Facility's Consistency With the Connecticut 2014 Draft Integrated Resource Plan

Witness: **Danielle Powers**
Tanya Bodell
Andrew J. Bazinet

ANALYSIS OF PROPOSED FACILITY'S CONSISTENCY WITH THE DRAFT 2014 INTEGRATED RESOURCE PLAN FOR CONNECTICUT

The January 29, 2015 hearing included considerable discussion of the consistency of CPV Towantic's ("CPV") proposed Facility with the draft Integrated Resource Plan for Connecticut (Draft IRP") issued by the Department of Energy and Environmental Protection ("DEEP" or the "Department") on December 11, 2014. In this document, CPV highlights statements in the draft IRP demonstrating that CPV Towantic Energy Center is consistent with and furthers the goals and policies of the draft IRP and, thereby, provides substantial public benefits to Connecticut and its residents.

CPV adds that Connecticut ratepayers will be shouldering a portion of the region's capacity costs due to the shortage of resources realized in ISO-NE's eighth Forward Capacity Auction (FCA8), that took place in February 2014, for the period June 1, 2017 thru May 31, 2018. The cost of capacity tripled for FCA8. Notably, ISO-NE's ninth Forward Capacity Auction (FCA9) that took place February 2015 procured greater than 1,400 MW of new resources, including the CPV Towantic Energy Center which will now be relied on by Connecticut and the entire New England region to maintain reliability and stabilize capacity costs.

CPV's witnesses can further elaborate on the relationship of the Facility to the draft IRP and on the resulting public benefits in the upcoming hearing sessions.

Emission and Cost Reductions From Natural Gas Generation

Page ii—"**Replacement of Coal and Oil Generation with Natural Gas Generation Has Lowered Costs And Emissions from Historic Highs**. Air pollution emissions in Connecticut have decreased markedly, as low cost natural gas-fired generation continues to displace coal and oil-fired generation."

New England Capacity Shortage and Implications for Connecticut

Page iii—"**New Power Plant Needs In Other States Will Drive Up Capacity Prices for the Region**…. The 2014 IRP projects that Connecticut will continue to have plenty of capacity through 2024, and beyond…. At the regional level, however, the New England capacity surplus is rapidly dwindling. Beginning in 2017, the region will face a capacity shortage of 143 MW primarily due to the announced retirements of 4,100 MW of non-gas

generation resources and a reduction in capacity imports. This shortage is expected to worsen over time…. [C]apacity prices will increase accordingly. Connecticut ratepayers will have to shoulder a portion of the region's capacity costs, which could add to retail generation rates beginning in 2017/18…."

Page vi—"Department's concern that the upcoming February 2015 auction may not attract the new capacity that is needed, driving up capacity prices and threatening system reliability."

Page 13—"As noted above, past IRPs, including the 2012 IRP, projected sufficient supply throughout the ten-year time horizon. The 2014 IRP foresees a supply shortage much sooner, due primarily to recently announced generation retirement."

Page 13—While resources within Connecticut are expected to be sufficient to meet Connecticut's local sourcing requirement, "Connecticut's reliability and generation prices would be as affected as other states if the entire region as a whole had insufficient supply."

Pages 15-16—"[T]he region will need new generating capacity, increased transmission capability, or demand reductions starting in the summer of 2018. By the summer of 2020, new generation entry, as well as additional demand response, will begin to become economic, with approximately 860 ME of new generation and 700 MW of new demand response projected to enter by 2024."

Page 68—"*Impact of alternative scenarios on resource adequacy* …. "Region-wide, the resource adequacy need becomes much larger in the Tight Supply scenario. More than 2,000 MW of new supply is needed as early as 2018 in the Tight Supply market scenario, rising to 4,000 MW by 2024 (about a third of which is projected to come from new demand response in all years)."

Page 83—If FCA9 "does not deliver new generation resources when called upon to meet capacity *needs … Connecticut's rates and reliability would be significantly impacted."*

Page B-7—List of existing units which have announced their plans to retire soon.

Demand Response and Other Uncertainties

Page vi—"A recent decision from the D.C. Circuit Court has created legal uncertainty about whether DR can continue to participate in the ISO-NE wholesale electric markets, and this uncertainty can drive up costs and compromise reliability if it affects DR's participation in the February, 2015 capacity auction.".

Page 5—"On the regional and federal levels, regulatory uncertainty is creating disruptive and potentially costly threats to the reliability of the ISO-NE system and the economics of New England. The past year has seen FERC in court decisions that 1) dramatically affect the role of demand response (DR) in the market …[and] 2) foster substantial uncertainty

regarding the states' ability to contract for renewables to meet state mandates (various court decisions)…."

Page 12— Further discussion of the uncertainty as to ability of DR to participate in the forward capacity market ("FCM").

Page 19—Uncertainty about effect that the new Performance Incentive Program will induce existing resources to retire, and ability of DR to participate in the FCM. "The combination of all of the FERC and federal court decisions creates a very uncertain market future with substantial price and reliability risks for ratepayers that may require coordinated state actions."

Page 82—"The Department is very concerned that the uncertainties raised by the D.C. Circuit and other recent judicial actions have the potential to undermined resource adequacy and drive up energy prices in the near term, at a time when the region is also facing a shortage of generation capacity and retirements of substantial amounts of non-gas resources."

Need for Flexible generation

Page 19—**"Forecast: Supply and Demand for Flexible Capacity to Meet Operational Needs."**

Page 19—"In order to maintain continuous real-time supply-demand balance, ISO-NE needs to be able to compensate for rapid changes in system conditions by having fast-acting, flexible resources at its disposal."

Page 21—"Natural gas generators have lower emissions and are also very flexible, allowing them to ramp up quickly in response to changes in load."

New Generation Projects

Page 74—"Barring any market failures, the ISO-NE regional capacity market should attract new capacity to supply the existing regional need, which could include generation facilities constructed in Connecticut."

Page 84—Footnote 145 "Several projects are already in development including the 560 MW CPV Towantic project in Connecticut…. Other potential projects not yet permitted could take longer to develop."

Dual fuel benefits

Page 88—"New England's natural gas electric generation fleet faces a high probability of experiencing critical shortages on 24 to 34 days every winter by 2020."

Page 93—"Solution to the region's winter peak reliability problem includes "dual-fired generation capability" among other options.

Page 99—"In the shorter term before long-term solutions can be built, DEEP recommends that dual-fuel generation, demand response measures and the seasonal purchase of LNG cargos be deployed by ISO-NE through the winter reliability program for 2014/15."

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4.

GAS INTERCONNECTION UPDATE

Witnesses: Andrew Bazinet
Jon Donovan

Gas Interconnection Update

In the hearing for Docket No. 192B conducted on February 24, 2015, CPV Towantic responded to a question from Mr. Perrone regarding the underground routing of the natural gas interconnection. Andrew Bazinet referenced ongoing discussions with Spectra Energy regarding the scope and design of the proposed Project's gas interconnection.

In Q2-2014 CPV Towantic initially engaged Spectra in a dialogue regarding interconnection to the Spectra's Algonquin pipeline system. Discussion with Spectra's team at that point in time indicated pipeline pressures would be sufficient to support operation at the CPV Towantic Energy Center. As talks advanced, Spectra continued to provide additional information. CPV Towantic's analysis of this most recent data, provided by Spectra on February 26, 2015, indicates that on-site gas compression may be required. The inclusion of gas compression, should it be necessary, will not require extensive site plan modification or materially affect the proposed Project's impacts with respect to air emissions, noise, visual profile, thermal efficiency or safety:

- Layout - the relatively small amount of surface area required for on-site gas compression will allow for its inclusion without major updates to the Project's layout and civil design;
- Air emissions - the equipment being evaluated would utilize electricity and therefore would not produce any air emissions;
- Noise - the gas compression equipment vendor will provide a near-field noise guarantee that will allow the Project to easily comply with the 70 dBa and 51 dBa Connecticut noise standards;
- Visual - the expected dimensions of the equipment and any enclosures are well within the Project's visual envelope;
- Efficiency - CPV has contingency in its current auxiliary load calculations for the plant such that no impact to net plant efficiency is expected; and
- Safety - consistent with CPV Towantic's testimony at the February 24 hearing, the gas compressors will be part of a system that features instrumentation, detection and isolation measures with quick acting valves to ensure safety is maintained throughout operation.

While it is not definitively known if on-site gas compression will be required, CPV Towantic proposes a final update be provided during the Development & Management Plan phase of this proceeding.

5.

Judge Satter's Unpublished Decision in Citizens for the Defense of Oxford v. Connecticut Siting Council

Not Reported in A.2d, 2000 WL 1785118 (Conn.Super.)
(Cite as: 2000 WL 1785118 (Conn.Super.))

Only the Westlaw citation is currently available.

UNPUBLISHED OPINION. CHECK COURT RULES BEFORE CITING.

Superior Court of Connecticut.
CITIZENS FOR THE DEFENSE OF OXFORD,
v.
CONNECTICUT SITING COUNCIL, et al.
No. CV990497075S.

Nov. 14, 2000.

MEMORANDUM OF DECISION

SATTER.

***1** This is an appeal by the plaintiff, Citizens for the Defense of Oxford, (hereinafter "CDO") from a decision of the defendant, Connecticut Siting Council, (hereinafter "Council"), granting the application of defendant Towantic Energy, LLC, (hereinafter "Towantic") for a certificate of environmental compatibility and public need for the construction, maintenance, and operation of an electric generating facility to be located in Oxford, Connecticut.

In its brief, the Council asserted plaintiff CDO lacked standing to bring this appeal because it failed to establish either classical or statutory aggrievement. When CDO submitted a list of witnesses it intended to call on the issue of aggrievement, had those witnesses in court to testify, and further, at the request of the court made an offer of proof on that issue, the Council withdrew that defense. Thus the court finds that CDO has been aggrieved and has standing to bring this appeal.

The facts are as follows. The Council is a state agency having jurisdiction over the siting of electric generating facilities pursuant to §§ 16-50i(a)(3) and 16-50x. On December 7, 1998, Towantic filed an application with the Council for a certificate of environmental compatibility and public need for the construction, maintenance, and operation of an electric generating facility primarily fueled by natural gas and to be located in Oxford, Connecticut. The Council conducted five days of public hearings on the application. The plaintiff CDO, defendant Towantic and several intervenors, including the Town of Middlebury, participated, offered evidence and argued to the Council. On June 23, 1999 the Council issued its findings of fact, opinion, decision and order granting the certificate to Towantic for the facility but with several conditions attached. The Council found that the proposed facility would offer the following public benefits: (1) improve reliability of electric supply; (2) displace existing generation plants that are more costly or have significantly higher air emissions; and (3) enhance the potential for economic development in Oxford. The Council further found that the facility would result in air quality improvement in the region. It also determined Towantic's choice of dry-cooling, rather than wet-cooling technology significantly reduced the need for water, from the Heritage Water Company (hereinafter "Heritage"), although the facility use of water would require Heritage to seek new sources earlier than without the facility. In response to concerns about potential impacts of water use on the Pomperaug River, the Council required Towantic to develop a plan for on-site water storage and to participate in a study of the river using Instream Flow Incremental Methodology.

Pursuant to Connecticut General Statutes § 16-50x(d), the Town of Oxford Conservation Commission and Planning and Zoning Commission issued orders to regulate and restrict the proposed facility, and approved the facility with certain conditions. The plaintiff filed an appeal from the orders of those commissions with the Council and the Council consolidated that appeal with the proceedings on Towantic's application. The Council affirmed the orders of those two commissions with modifications to make them consistent with the

Council's decision and, for the same reasons, it granted the certificate.

The standard of review by this court in an administrative appeal is set forth in § 4-183(j), as construed by numerous court decisions. Essentially, "[the] court shall not substitute its judgment for that of the agency as to the weight of the evidence on questions of fact." (Section 4-183j.) The court shall affirm a decision of the agency unless it finds that administrative findings, inferences, conclusions or decisions are in violation of constitutional or statutory provisions; in excess of the statutory authority of the agency; made upon unlawful procedure; affected by other errors of law; clearly erroneous in view of the reliable, probative and substantial evidence on the whole record; or "arbitrary or capricious or characterized by abuse of discretion or clearly unwarranted exercise of discretion." *Id.* Factual determinations must be sustained if they are "reasonably supported by substantial evidence in the record taken as a whole." *Office of Consumer Counsel v. Department of Public Utility Control,* 246 Conn. 18, 36, 716 A.2d 78 (1998). Substantial evidence exists if "administrative record affords a substantial basis of fact from which the fact in issue can be reasonably inferred." *Connecticut Building Wrecking Company v. Carothers,* 218 Conn. 580, 601, 590 A.2d 447 (1991). In making factual determinations an administrative agency "is not required to believe a witness, even an expert, nor is it required to use in any particular fashion any of the materials presented to it so long as the conduct of the hearing is fundamentally fair." *Huck v. Inland Wetlands and Watercourses Agency,* 203 Conn. 525, 540, 525 A.2d 940 (1987).

***2** The plaintiff asserts that the Council made two errors of law which require this court remand this case to the Council for further proceedings: (1) the Council failed to find a need for the facility as a necessary precursor to its finding a public benefit of the facility; (2) Council failed to require Towantic to provide it with information about the impact of the proposed withdrawal of water from the Pomperaug River by the proposed facility.

CDO made a number of other claims in its appeal to this court. Since they have not been briefed, they are deemed abandoned. *Bridgeport Hospital v. Commission on Human Rights and Opportunities,* 232 Conn. 91, 115, 653 A.2d 782 (1995); *Connecticut National Bank v. Giacomi,* 242 Conn. 17, 44-45, 699 A.2d 101 (1997).

Also, in its brief, CDO claimed the Council erred in confirming the decision of the Oxford Planning and Zoning Commission because the chairman of that commission allegedly had a conflict of interest. However, the Council's review of local zoning commission orders is de novo and based on the evidence developed in the Council's proceedings, not on the record of the local proceedings. *Preston v. Connecticut Siting Council,* 20 Conn.App. 474, 483-86, 568 A.2d 799, cert. denied, 214 Conn. 803, 573 A.2d 316 (1990). When this was pointed out to CDO's counsel at the hearing before this court, she abandoned that claim of error.

CDO also claims as a ground for appeal that its president and counsel were mistreated by the Council during the hearing. CDO's brief does little more than assert that some misconduct took place but does not adequately state how such conduct constituted unlawful procedure. The brief does not even make reference to pages of the transcript. CDO sought to bolster this claim by the submission of extra-record affidavits to demonstrate the impact upon its president and counsel. However, these have been stricken and cannot be considered by this court on this issue. *Connecticut National Bank v. Giacomi,* 242 Conn. 17, 44-45, 699 A.2d 101 (1997); *United Cable Television Services v. Department of Public Utility Control,* 235 Conn. 334, 356-67, 663 A.2d 1011 (1995). CDO's brief said: "Citizens do not ask any remedy other than to ask that, in reflecting on whether a remand would be appropriate on other grounds, as proposed, this court give consideration to what happened and what and how it might be made right." Thus, CDO is conceding there was no substantial prejudice or er-

ror resulting from the alleged misconduct and this court deems that CDO has abandoned that claim.

*3 Intervenor Town of Middlebury asserts as an error of law that the Council lacks sufficient evidence in the record to conclude that the facility has an adequate source of public water from Heritage with sufficient present capacity to provide water to the facility for the expected life of the facility.

I.

CDO contends that the Council must first determine the need for the proposed electric generating plant before it can reach the question of the public benefit of the plan and here, because the Council failed to do that, the case should be remanded for that determination.

This assertion misconstrues the law. Before the Restructuring Act of 1998, § 16-50p provided that before the Council granted a certificate to a facility having a substantial adverse environmental effect, it shall find and determine "a public need for the facility and the basis of the need ..." The 1998 Act added § 16-50p(c) to the effect that for electric generating facilities the Council shall not grant a certificate "unless it finds and determines (A) a public benefit for the facility";

Clearly, the standard of benefit differs from that of need. The meaning of "benefit" is something that "aids or promotes well being," *Webster's Third New International Dictionary,* 204 (1993), while "need" is commonly defined as "a necessary duty" or "a want of something requisite, desirable or useful." *Id.* at 1512, 663 A.2d 1011.

Subsection (c) of § 16-50p provides: "A public benefit exists if such a facility is necessary for the reliability of electric power supply of the state or for competitive market for electricity."

The Council took into consideration the issue of reliability of the electric power supply of the state when it stated:

Reliability of electric supply is of great importance in Connecticut, a service-oriented state that has become increasingly dependent on high technology and a reliable electric supply. To improve the reliability of the electric supply system of the state, the proposed facility would operate on natural gas with a proven technology to augment and replace other existing generation facilities in the state. The existing facilities include older, more costly, nuclear facilities that have retired prematurely, and the facilities that have higher levels of pollution emissions.

*4 The Council specifically found: (1) the state is an importer of electric power and the electric transmission system has a limited capacity to import electricity into the state; (2) the recent retirements of Connecticut Yankee and Millstone and the potential early retirement of Connecticut's remaining nuclear units may result in insufficient in-state electric supply. New England is projected to need an additional 981MW [million watts] by year 2001 and 4,941MW by 2008 to maintain reliability of the regional bulk power system. Even if the existing operating nuclear units operate to the end of their license period, Connecticut is expected to need 874MW by 2001 and 1,916MW by 2008 to maintain reliability of the state's bulk power system; (3) the proposed facility will reduce dependence on large nuclear and older, more polluting fossil fuel generators both in Connecticut in New England. Thus the Council did conclude the facility was necessary to maintain the reliability of Connecticut's power supply.

Moreover, the Council found the following additional significant public benefits to the state from the facility: (1) by operating on natural gas it would improve the air quality in the region; (2) by using the technology of dry-cooling rather than wet-cooling it would maximize water conservation and reduce atmospheric drift associated with evaporative cooling; (3) it would enhance the economy of the Town of Oxford and the State of Connecticut. The Council also found the facility did not pose a threat to endangered species or adversely affect his-

toric, or architectural, or archeological resources.

In its brief CDO apparently concedes that the findings of fact of the Council are "anchored in the record and appear to be comprehensive, at least to the unprepared reader." To the extent that it does contest the Council's findings, it does so by referring to other evidence in the record presented by it or its supporters that it claims the Council should have given weight to. However our law is clear that the Council had a right to evaluate the credibility of the witnesses and to give the weight it found appropriate to the evidence. As § 4-183j provides, "The court shall not substitute its judgment for that of the agency as to the weight of the evidence on questions of fact."

What CDO's opposition to the Council's decision really comes down to is that "the huge facility will profoundly and forever alter the slow-paced rural character of this lovely, small town." That, however, is not a consequence the Council had to consider. Pursuant to (c) of § 16-50b the Council had to consider (a) the public benefit; (b) the probable environmental impact, including a specification of every significant adverse and beneficial effect that conflict with policies of the state concerning national environment, ecological balance, public health and safety, scenic, historic and recreational values, forest and parks, air and water purity, and fish and wildlife; and (c) why the adverse effects are not sufficient reason to deny the application. The court finds that substantial evidence in the record supports the Council's conclusion that the facility confers a public benefit, the benefits to the public outweigh potential detriments to the environment, and the adverse effects are not sufficient reason to deny the proposed project. Thus the court concludes that the first ground of appeal of CDO is without merit.

II

***5** As the second ground of this appeal CDO contends that the Council had a duty to investigate the environmental impact of the proposed facility, and its failure to require Towantic to provide it with information on the impact of the proposed withdrawals of water from the Pomperaug River to supply the facility was an error of law.

The record reveals considerable evidence by Towantic's expert as to the effect of the facility on the available water in the area. Specifically, the Council found that by 2002 Heritage Water Company (Heritage) would be able to pump water up to its registered diversion permit limit of 2.052 million gallons per day (GPD). It found that the proposed facility would use as an annual average 59,000 GPD, with a peak daily demand of 100,000 GPD. Measuring Heritage available water capacity against its peak daily demand, the Council found that in the absence of the proposed facility's water use, Heritage would have sufficient capacity to meet demand until 2020 at which point Heritage would be required to find new sources of supply. Assuming the proposed facility as a customer, Heritage would have sufficient supply to meet demand until 2016. Thus, the additional demand of the proposed facility would accelerate by four years Heritage's need to obtain new supply sources.

A witness of the Department of Environmental Protection suggested that Heritage might have supply problems in the year 2002. However, the Council chose to believe the testimony of Towantic's expert in which he criticized the underlying assumptions the Department of Environmental Protection used reaching its conclusion.

As indicated above, the Council had the right to determine the credibility of witnesses and the weight to be given to their testimony and this court will not disturb those conclusions of fact.

Plaintiff also contends that the Council failed to require additional evidence concerning the possible impacts on the Pomperaug River from the facility's use of water. The opinion of the Council reveals that it did recognize concerns about the Pomperaug River and required significant actions by Towantic

as one of the conditions of the certificate. It required that Towantic participate in and fund the study of the river using Instream Flow Incremental Methodology to monitor the quality and quantity of the river s water.

Again, the court concludes that the record provides substantial evidence for the Council's finding as to the impact of the facility upon water supply and the Pomperaug River, and CDO's attack of these findings is of no avail.

III.

Intervenor, Town of Middlebury, asserts that there is insufficient evidence for the Council to conclude that the proposed facility has an adequate source of public water from its supplier Heritage to provide water to the plant for the expected life of the plant. It requests that the case be remanded to the Council for a factual determination as to whether or not Towantic can obtain a sufficient water supply for the proposed plant.

Middlebury cites no relevant statute, regulation or case requiring the Council to determine, as a condition of issuing a certificate of environmental compatibility, that adequate water supply be guaranteed for the life of the plant.

***6** The statute establishing the standards the Council must apply in issuing a certificate are set forth in § 16-50b(c)(1), as follows: (1) a public benefit for the facility; (2) an assessment of the probable adverse and beneficial environmental impacts of the facility; and (3) why the adverse effects are not sufficient reason to deny the application. No mention is made of a guarantee of adequate water for the plant over its life.

The Council, in evaluating the environmental impact of the facility, considered both the capacity of Heritage to supply water and the consequences of diversion of water from the Pomperaug River. The Council found that with or without the proposed facility, Heritage would have to obtain additional water supply during the life of the facility by expanding the existing well field, developing another source in the Town of Southbury, developing new supplies outside the Pomperaug River in Middlebury or Oxford, establishing an interconnection with another utility to purchase water. It noted that Heritage is now seeking those other sources of water supply. It concluded "moreover, the departments of public utility control, public health, and environmental protection have approved HWC's 1997 water supply plan, and we see no immediate or near term water supply problem for this project."

While there was a conflict of testimony among the experts on the issue of the availability of water for the plant, the Council had the right to believe Towantic's experts and its factual conclusions are supported by substantial evidence in the record.

The Council also expressed its concern with the diversion of water from the Pomperaug River basin. In order to prevent an overuse of the basin, the Council ordered Towantic to develop a plan to use on-site water storage for facility operations during low flow conditions and fund a study of river using the Instream Flow Incremental Methodology before commencing commercial operation to insure that quality and quantity of water is not effected by the facility.

Intervenor Middlebury relies upon *City of Waterbury v. Town of Washington,* Complex Litigation Docket No. X01-UWY-CV97140886, 36 (Waterbury, February 2000) (Hodgson, J.) for the proposition that increasing the diversion of water from a river requires the approval of the Department of Environmental Protection. In that case an injunction was sought against the City of Waterbury for unlawfully diverting water from the Shepaug River by building a dam across the river. However, the claim was brought against a water supplier, not a customer, as Towantic is here, and so it is not apposite to the standards the Council is required to apply in issuing a certificate of environmental compatibility for the Towantic facility.

Thus, the court concludes that none of the grounds of appeal of plaintiff CDO and intervenor Middlebury have merit, and, as a consequence, this appeal is dismissed.

Conn.Super.,2000.
Citizens for Defense of Oxford v. Connecticut Siting Council
Not Reported in A.2d, 2000 WL 1785118 (Conn.Super.)

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