ROBINSON & COLE LLP

**PETITION NO. 922**

ORIGINAL

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*Via Hand Delivery*



November 5, 2009

S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Petition of DFG-ERG CT, LLC for a Declaratory Ruling That a Certificate of Environmental Compatibility and Public Need Is Not Required for the Installation of a Fuel Cell Facility in Glastonbury, Connecticut**

Dear Mr. Phelps:

Enclosed please find the original and twenty-five (25) copies of a Petition for Declaratory Ruling submitted on behalf of DFC-ERG CT, LLC for the installation of a fuel cell facility in Glastonbury, Connecticut, together with a filing fee of $500.00.

Please feel free to contact me if you have any questions or require additional information. Thank you.

Sincerely,

Joey Lee Miranda

Enclosures

Copy to: Richard J. Johnson, Town of Glastonbury
Daniel A. Pennington, Town of Glastonbury
John A. Dobos, Jr., Connecticut Natural Gas
Jay Andruskiwec, Connecticut Natural Gas
Andrew J. Skok, DFC-ERG CT, LLC

**STATE OF CONNECTICUT**

**CONNECTICUT SITING COUNCIL**

| | | |
|---|---|---|
| IN RE: | : | |
| | : | |
| PETITION OF DFC-ERG CT, LLC FOR A DECLARATORY RULING THAT A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS NOT REQUIRED FOR THE INSTALLATION OF A FUEL CELL FACILITY IN GLASTONBURY, CONNECTICUT | : | PETITION NO. ____ |
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| | : | |
| | : | |
| | : | NOVEMBER 5, 2009 |

**PETITION FOR DECLARATORY RULING:**
**INSTALLATION HAVING NO SUBSTANTIAL ENVIRONMENTAL EFFECT**

## I. INTRODUCTION

Pursuant to Connecticut General Statutes section 16-50k, DFC-ERG CT, LLC ("DFC-ERG") hereby petitions the Connecticut Siting Council (the "Council") for a declaratory ruling ("Petition") that a Certificate of Environmental Compatibility and Public Need ("Certificate") is not required for the installation of the fuel cell generating facility (the "Project") described herein. The Project was selected pursuant to Connecticut Clean Energy Fund's ("CCEF") Project 150, Round 3 initiative. DFC-ERG submits that no Certificate is required because the proposed installation would not have a substantial adverse environmental effect.

## II. THE PETITIONER

DFC-ERG is a limited liability company organized under the laws of the State of Connecticut with an office located at 3 Great Pasture Road, Danbury, Connecticut 06813. DFC-ERG intends to develop this Project in cooperation with its partners, FuelCell Energy, Inc. ("FCE"), Enbridge, Inc ("Enbridge"), Energy East Corporation ("Energy East") and Linde

Cryostar, Inc. ("Cryostar").

FCE is a world leader in the development and manufacture of high temperature fuel cells for clean electric power generation. Energy East, which owns Connecticut Natural Gas ("CNG") and Southern Connecticut Gas ("SCG"), is a superior, regional energy services and delivery company with a proven track record of environmental stewardship. Enbridge is a major fuel supplier, a reputable and significant energy player in North America and has made major investments in clean technology development. Cryostar is a leader in supplying turbo-expanders for natural gas pressure let-down applications, having supplied 20 megawatts ("MW") of turbo-expanders in Europe over the past 20 years.

Correspondence and/or communications regarding this Petition should be addressed to:

Andrew J. Skok
DFC ERG CT, LLC
c/o FuelCell Energy, Inc.
3 Great Pasture Road
Danbury, CT 06813-1305
(203) 825-6068 (office)
(203) 825-4999 (fax)
askok@fce.com

A copy of all such correspondence or communications should also be sent to the Petitioner's attorney:

Joey Lee Miranda, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597
(860) 275-8200 (office)
(860) 275-8299 (fax)
jmiranda@rc.com

## III. FACTUAL BACKGROUND

### A. Public Benefit

A public benefit exists if a project "is necessary for the reliability of the electric power supply of the state or for a competitive market for electricity." Conn. Gen. Stat. § 16-50p(c)(1). The Project is located in Glastonbury, Connecticut. ISO New England ("ISO-NE") has identified Connecticut as a constrained area. As a result, the electric load of the region at times may exceed the ability of the electric generation resources in the region plus the available transmission capacity to import electric energy into the region. Therefore, the generation and the transmission within the region may not be able to supply the electric load without overloading lines and causing low voltages. The Project provides an additional source of generation to provide electric energy to loads within the congested area. The operation of the Project would serve to reduce the stress on the system during periods of peak demand and contribute to the reduction of load on overloaded transmission lines, which can result in low voltage conditions or black outs in the service areas.

### B. Site Selection

The Project will be installed at CNG's Pressure Letdown/Gate Station in Glastonbury, Connecticut (the "Site"). The Site was carefully selected using the following selection criteria:

- Availability of Fuel. The Site is located at the CNG gate station (the origination point of the local distribution system) and adjacent to the Algonquin gas transmission line. Natural gas is available continuously at this Site. The fuel supply will be firm service supply.

- Availability of Electrical Interconnection. The Connecticut Light and Power Company ("CL&P") is the local distribution utility. The CNG facility is serviced by CL&P's 23 kV Circuit. DFC-ERG has had discussions with CL&P regarding the

interconnection, and it is anticipated that the Project will be interconnected via this distribution circuit.

- Availability of Makeup Water. Adequate makeup water is available on-Site via the municipal potable water system. The Project will be designed with a zero discharge water treatment system to eliminate the requirement for the Project to be connected to a municipal sewer system.

- Availability of Adequate and Appropriate Land. The Project can be located on the existing parcel of land owned by CNG. *See* Preliminary Site Plan at Tab A. The Site is not located within either the 100- or 500-year floodplain or the coastal zone. There are no surface water bodies or wetlands on the Site.

### C. Proposed Installation

In cooperation with its Project partners, DFC-ERG proposes to develop, own and operate a combined Fuel Cell/Turbo-Expander energy system ("DFC-ERG®") providing approximately 3.4 MW of Connecticut Class I Renewable Energy under a long-term contract with CL&P. Natural gas for the DFC-ERG will be supplied through the CNG distribution system from an existing Algonquin gas transmission line adjacent to the Site. Other utilities necessary to support the operation of the Project will be delivered via existing infrastructure systems. The electrical energy produced will be delivered to the electricity grid through a 23 kV interconnection with CL&P.

This Project represents the integration of two environmentally superior, Connecticut Class I Renewable Energy electrical generation solutions:

1. One Direct FuelCell® ("DFC®") unit from FCE; and
2. Energy Recovery Generation ("ERG") using Cryostar's turbo-expander generator technology.

This unique hybrid configuration has been developed and is also being marketed by Enbridge. It generates electricity at efficiencies approaching sixty percent (60%). The FCE DFC is a commercial molten carbonate fuel cell. The ERG uses a turbo-expander that works on a

principle similar to that of a steam turbine, but rather than expanding steam for power generation, the expansion engine extracts inherent energy from natural gas transmission pipelines by recovering energy from pressure reducing stations. *See* Project Description attached at Tab B.

The DFC combined with the energy recovery turbo-expander will deliver a ten to fourteen percent (10%-14%) increase in annual electricity generation when compared to stand-alone DFC power plants. This will result in reduced energy consumption per megawatt-hour generated and reduced greenhouse gas ("GHG") emissions as an additional benefit over-and-above the near-zero criteria air emissions of the fuel cell. Electricity generation yield will vary daily and seasonally with the natural gas deliveries that flow through the Glastonbury letdown station.

### D. Local Input

On July 9, 2009, representatives of DFC-ERG met with Richard J. Johnson, Glastonbury Town Manager, and Daniel A. Pennington, Glastonbury Town Engineer, to discuss the Project. The Town of Glastonbury did not express any concerns about the Project.

### E. Notice of Petition

As a courtesy, notice of DFC-ERG's intent to file the Petition was sent via certified mail, return receipt requested, to the owners of the land abutting the Project Site on October 16, 2009. In addition, copies of this Petition have been sent to Richard J. Johnson, Glastonbury Town Manager, and Daniel A. Pennington, Glastonbury Town Engineer.

## IV. THE INSTALLATION WOULD NOT HAVE A SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

The Project will provide 3.4 MW of clean electrical energy without the environmental impacts normally associated with the use of natural gas as a fuel.

### A. Natural Environment and Ecological Balance

Approximately 22,000 standard cubic feet ("scf") of nitrogen will be stored on Site. Nitrogen is non-toxic; however, it is a Department of Transportation ("DOT") Division 2.2 (non-flammable gas) hazardous material. There are no U.S. Environmental Protection Agency ("EPA") reporting requirements for nitrogen. Prior to operation, DFC-ERG will discuss the storage with the Glastonbury Fire Department and the Local Emergency Planning Committee ("LEPC"). The ERG turbo-expander and gear box contain lube oil. Secondary containment for the lube oil system will be provided within the ERG enclosure.

### B. Public Health and Safety

The roadways in the area are adequate for all deliveries to support the construction and operation of the Project. These same roadways have been used in the past to deliver major equipment to other facilities in the area. The limited number of truck trips necessary to support installation is not sufficient to have any adverse impacts on local roadways or traffic conditions. Operational personnel trips will be insignificant, as the Site will be visited periodically by two technicians. No Site access or traffic related issues have been identified that would prevent or delay the installation and operation of the Project.

The Project has been designed with significant attention to protecting the community sound environment. The core of the fuel cell technology (i.e., the direct fuel cell modules) will produce no significant sound. Ancillary equipment associated with the Project includes a blower that will pump fresh air through a silencer into the main process skid. Another blower in the main process skid will accumulate anode gas and mix it with air for residual oxidation and also serve the heat exchanger and heat recovery equipment. A cooling condenser, which is similar to

many used in residential applications, will be located above the water treatment cabinet to support equipment inside the cabinet and will produce sound only when the fan is actively providing cooling for the system. Relatively small transformers and electrical buses and inverters as well as fans providing ventilation to some of the equipment will produce modest sound. Noise from the ERG turbo-expander will be controlled by the ERG enclosure. Under normal conditions, these few noise sources would produce consistent sound throughout the day and night.

The noise levels associated with the Project were modeled at sensitive community receptors per the Regulations of Connecticut State Agencies ("RCSA") section 22a-69-1 *et seq.* The Site is categorized as a Class C Noise Zone, where the sound level is limited to 70 dBA at Class C receptors, 66 dBA at Class B receptors, and 61 dBA at Class A receptors during the daytime and 51 dBA at Class A receptors during the nighttime. Since adjacent properties are residential, they were evaluated as a Class A Noise Zone. The results of the modeling indicate that the Project can be operated at the Site within the applicable noise performance criteria. *See* Noise Assessment Study attached at Tab C.

**C. Scenic Values**

Based on a Visual Aesthetics Assessment Study (attached at Tab D), the proposed Project will have little impact on the visual character of the community. Generally, the potential visual impact is inherently small due to the low profile of the equipment in the context of the mature forest in the area. The Site was laid out to maintain as much existing vegetation as possible around the Project to shield the view from the roadway and the community. As a consequence, there will only be a fleeting view of the Project from one local roadway. While the proposed

equipment will be partially visible from the adjacent roadway, it will have a low profile similar to the low buildings at the existing CNG gate station.

**D. Historical Values**

A request was made with the Connecticut State Historic Preservation Office ("SHPO") regarding the Project's effect on historic, architectural or archaeological resources listed on or eligible for the National Register of Historic Places. The SHPO determined that "the proposed undertaking will have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places." *See* Correspondence at Tab E.

**E. Air Quality**

Air emissions from the DFC3000 fuel cell associated with the Project, assuming continuous year-round operation, are expected to be:

| Pollutant | Total Potential Emissions (tpy) |
|---|---|
| Oxides of Nitrogen ("$NO_x$") | 0.15 |
| Oxides of Sulfur ("$SO_x$") | 0.001 |
| Particulate Matter ("PM") | 0.07 |
| Carbon Monoxide ("CO") | 1.49 |
| Volatile Organic Compounds ("VOC") | 0.89 |

In addition to the emissions from the fuel cell itself, there will also be minor emissions associated with a 10 MMBtu/hr gas-fired startup burner that will be included with the fuel cell power plant. The burner is used at start-up only to heat the plant to its required operating temperature. Since the fuel cell is expected to run constantly, it is anticipated that the burner will only be used a few times a year. The criteria pollutant potential emissions (assuming 8,760 hours of operation) associated with the gas-fired burner along with the fuel cell are less than 15 tons per

year ("tpy") using conservative EPA AP-42 emission factors. There are no emissions associated with the ERG.

Total emissions from the proposed Project will be below levels that would render the Project a "major stationary source" as defined at RCSA section 22a-174-1(57). The Project's maximum emissions will operate well below the serious non-attainment area thresholds for VOC and $NO_x$. Thus, the Project will be a minor source and is not subject to Federal Non-Attainment New Source Review ("NSR"). Also, there is no requirement for emission offsets for this Project as it will be below the non-attainment NSR major source thresholds.

Per the EPA, the entire State of Connecticut is designated as attainment for $SO_2$ and CO. In December 2004, the EPA designated Fairfield and New Haven Counties as non-attainment areas for fine particles ("PM 2.5"). However, the Project is located in Hartford County, which is designated as an attainment area for PM 2.5.

A Permit to Construct and Operate Stationary Sources is not required for the Project because the potential emissions of any individual air pollutant are less than 15 tpy; the source is not a new major stationary source; and, the source is not a new major source of hazardous air pollutants. The Project is also not subject to the Department of Environmental Protection's ("DEP") "permit by rules" because the potential emissions from the fuel cell are less than 15 tpy. Thus, there are no registrations or applications required to be submitted to the DEP; nor are there anticipated to be any approvals from the DEP Air Bureau required prior to the construction and operation of the Project.

**F. Water Quality**

The Site is not located within either 100- or 500-year floodplains or the coastal zone.

There are also no surface water bodies or wetlands on the Site. The closest surface water bodies are Treat Pond, approximately 0.5 miles to the west; an unnamed pond, approximately 0.3 miles to the northwest; and a tributary of Salmon Brook, approximately 0.1 miles to the north. The Site is not in an aquifer protection area. Thus, no impacts to surface water bodies will occur from the installation and operation of the Project.

A certified Storm Water Pollution Prevention ("SWPP") Plan will be developed for both construction and operation of the facility, if required. Stormwater discharge approval for construction will be obtained under DEP's General Permit for Stormwater and Dewatering from Construction Activities. Stormwater discharge approval for operation will be obtained under DEP's General Permit for Stormwater Associated with Industrial Activities. Groundwater in the Site vicinity will not be impacted by the installation and operation of the Project. Limited excavation of soils will be required for installation of the Project and no wastewaters will be discharged on-Site.

The DFC power plant to be installed as part of this Project (i.e., DFC3000) will require approximately 8,500 gallons per day ("gpd") of raw water and will, as a result of the installation of a zero discharge water treatment system, not discharge any wastewater. The makeup water will be released as water vapor with the fuel cell exhaust gas. No makeup water is required nor wastewater discharged from the ERG unit. Water for operation is available via the municipal potable water system.

Sanitary wastes for the small number of personnel periodically operating and/or maintaining the Project will be handled by temporary portable sanitary facilities. These facilities will be maintained under contract with a local, licensed septage hauler. Any chemicals or other

hazardous materials necessary for the facilities will be contained to prevent release to the environment.

Adequate water supply and infrastructure are available to supply the Project. Therefore, no substantial adverse environmental effect will occur from the Project's water use and wastewater disposal. Neither a water withdrawal permit nor wastewater discharge permit are required from the DEP.

### G. Fish and Wildlife

The closest Natural Diversity Database Area lies approximately 0.5 miles to the west of the Site. A request was made with the Connecticut DEP for a review of the Natural Diversity Data Base Map. In response, the DEP indicated that "there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur at the site in question." *See* Correspondence at Tab F.

### H. Summary

Overall, the proposed installation would have an incremental visual impact and would not cause any significant change or alteration in the physical or environmental characteristics of the Site or the surrounding area. In fact, as discussed in Section V.A below, the Project will actually provide an environmental benefit to the State of Connecticut.

## V. PROJECT BENEFITS

In addition to the public benefit discussed in Section III.A above, the Project will also provide environmental benefits, energy price relief and other economic benefits to the State of Connecticut.

### A. Environmental

The Project will provide Connecticut ratepayers with access to 3.4 MW of reliable, clean, Class I renewable energy. Fuel cells provide reliable clean and renewable energy without dependence on weather or other ambient conditions throughout all seasons, time of day and demand conditions. The addition of the turbo-expander increases these benefits by further lowering the emission rates and providing additional power without the use of additional fuel.

### B. Energy Prices

The Project offers several unique benefits that can help suppress future energy prices in Connecticut. DFC-ERG power plants, like the one proposed, can be sited in urban areas and provide the capacity needed during peak load periods to reduce the congestion charges in the transmission constrained area. This will contribute to lowering the cost of electricity to customers throughout Connecticut. Because of the continuous, reliable output of the DFC3000 power plant, it can provide needed capacity in transmission constrained areas.

### C. Economic

The economic benefits associated with generation within the Connecticut load area have been addressed in numerous studies before the Connecticut General Assembly and Department of Public Utility Control. The Project will contribute to the relief of transmission congestion in Connecticut. Cost-effective improvements to the overall health of the electricity supply system will provide incentives for economic growth in the area.

In addition, the DFC3000 is manufactured by FCE using manufacturing and production facilities in Torrington and Danbury. FCE's 350-person Connecticut employment base will directly benefit from the manufacturing, construction and ongoing operation activities. However,

the largest value to the local economy is the impact that the Project will have on the overall market development of fuel cell technology. The successful development and operation of the proposed facility will create significant interest on the part of other customers. As the fuel cell market continues to expand, the State of Connecticut will benefit from the additional equipment manufactured in Connecticut to meet the increased demand. This economic benefit will be manifested in the purchase of materials for production, additional employment and the taxes associated with each.

## VI. CONCLUSION

For all the foregoing reasons, DFC-ERG requests that the Council issue a determination, in the form of a declaratory ruling, that the proposed installation as described above is not one that would have a substantial adverse environmental effect and, therefore, that a Certificate is not required.

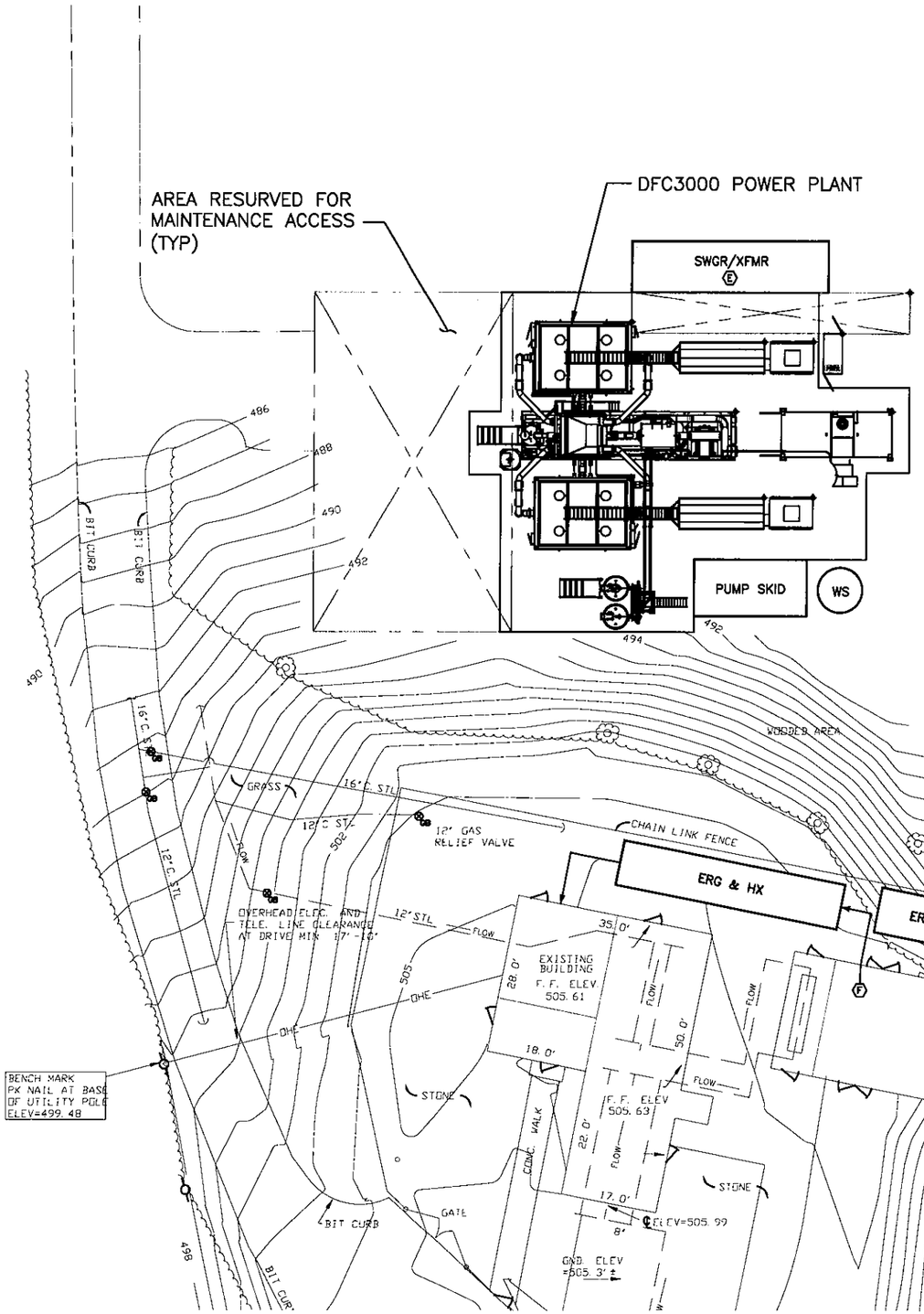
Respectfully submitted,
DFC-ERG CT, LLC

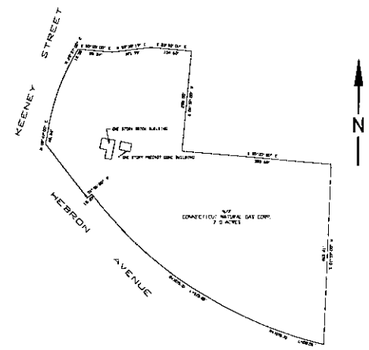
By _____

Joey Lee Miranda, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103
Phone: (860) 275-8200
Fax: (860) 275-8299
E-mail: jmiranda@rc.com

Its Attorneys

| REVISION HISTORY | | | | |
|---|---|---|---|---|
| REV | DESCRIPTION | BY | APPROVED | DATE |
| 1 | FOR INTERNAL REVIEW | KGG | CP | 05/22/08 |
| 2 | ISSUED FOR PROPOSAL | KGG | CP | 05/23/08 |
| 3 | GENERAL REVISIONS | MHB | CP | 07/20/09 |
| 4 | GENERAL REVISIONS | MHB | CP | 08/26/09 |




NOTE:
1. PLANT BOUNDARY INCLUDES ALL MAINTENANCE ACCESS ZONES.
2. AREA REQ'D. FOR FUEL CELLS = 0.135 ACRES
   AREA REQ'D. FOR ERG/HX = 0.016 ACRES
   AREA REQ'D FOR ELECTRICAL = 0.007 ACRES
   TOTAL ACREAGE = 0.158 ACRES
3. PROVISIONS FOR COMPRESSED GAS BOTTLE STORAGE, NEAR SITE REQUIRED.

LEGEND:

| | |
|---|---|
| CE | CONTROL ENCLOSURE |
| DFC | DIRECT FUEL CELL |
| DS | DESULFURIZATION SKID |
| EBOP | ELECTRICAL BALANCE OF PLANT |
| ERG | ENERGY RECOVERY GENERATOR |
| HX | HEAT EXCHANGER |
| MPS | MAIN PROCESSING SKID |
| SWGR | SWITCHGEAR |
| WS | WATER STORAGE |
| WTS | WATER TREATMENT SYSTEM |
| XFMR | TRANSFORMER |
| (E) | POINT OF ELECTRICAL INTERCONNECT |
| (F) | POINT OF FUEL INTERCONNECT |

GRAPHIC SCALE
20 0 20 40

INFORMATION FOR PROPOSAL PURPOSES ONLY,
NOT FOR CONSTRUCTION.
PRODUCT CONFIGURATION SUBJECT TO CHANGE.



CAGE CODE 63131

SIGNATURES
DRAWN: H.E.BOYKIN 05/10/08
ENGINEER: C.PAIS 05/12/08
APPROVED:
RELEASED:

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE ±1/16"

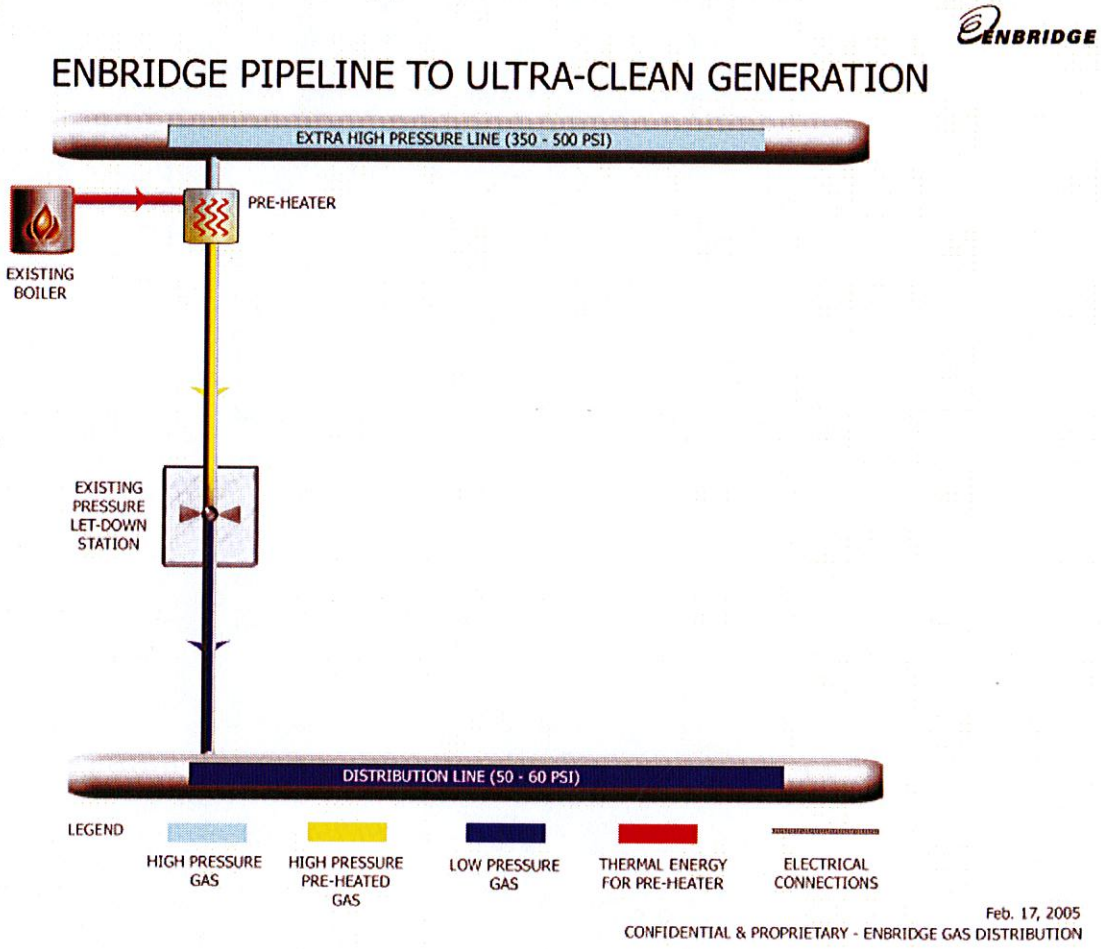
A REVISION INDICATOR
B FLAG NOTE

FuelCell Energy 3 Great Pasture Rd., Danbury, CT 06813

TITLE
PROPOSED DFC-ERG PROJECT
GLASTONBURY GATE STATION
PRELIMINARY GENERAL ARRANGEMENT

| SIZE | Location | DWG NO | REV |
|---|---|---|---|
| D | --- | 06-0042 | 4 |
| SCALE | NONE | SHEET | 1 OF 1 |

**Figure 1-1**
**Schematic of Typical Pressure Let Down Station**




The innovative approach proposed for the DFC-ERG® hybrid plant is represented in the schematic outlined in Figure 1-2 (as opposed to the conventional approach represented in Figure 1-1). The Project will maintain the existing pressure let down station as a back-up and/or overflow system to regulate the natural gas distribution system flow/pressure. As a primary means of regulating system pressures, a turbo expander will be engineered into the let down station operations. As natural gas flows into the turbo expander, the system allows gas expansion to reduce the system pressure while providing rotary shaft power. This rotary shaft power is used to turn an electrical generator for power generation. This expansion process, like the conventional pressure let down process, requires the upstream natural gas to be preheated.

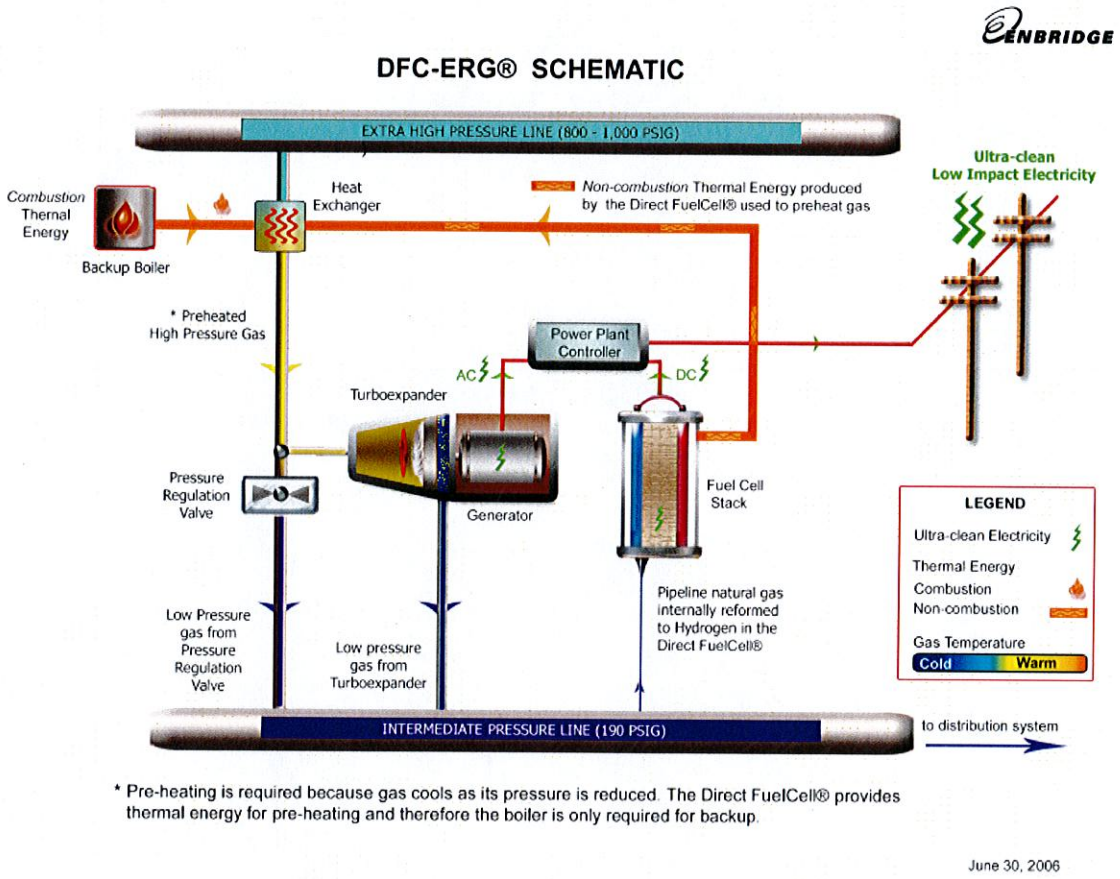
The integration of a high temperature fuel cell with the turbo expander process affords two key advantages:

1. High grade waste heat from the fuel cell, with near zero criteria emissions, can offset boiler combustion processes needed in today's pipeline operations for preheating.

2. Steady state (24 x 7) electrical generation from the fuel cell is integrated with variable power outputs of the turbo expander generator to improve electrical capacity factors.

The use of the fuel cell also provides an enhanced electrical grid connection for both power generation technologies, thereby increasing benefits to the electrical utilities with the use of large stationary power conditioning systems. System controls and integration requirements will be addressed by the development team.

**Figure 1-2**
**Schematic of DFC-ERG® incorporated into Pressure Let Down Station**




The turbo expander generator technology used in pipeline energy recovery systems, as supplied by Linde Cryostar, have been used in over 20 installations to generate electricity from natural gas distribution networks. The earliest installation dates back to 1986. Enbridge has completed the installation of the first DFC-ERG® installation with the Cryostar's expansion generator technology at Enbridge's Toronto, Ontario headquarters. This facility has been operating successfully for over six months.

SatCon Power Systems has demonstrated the successful use of their large stationary inverter and power conditioning system (PCS) to compensate for electric grid variations through real and reactive power control. The combination of VAR compensations and power management control makes the PCS a versatile tool for electric utilities working to control localized power quality

issues. By enabling grid access through the inverter the electricity from these hybrid plants can offer increased value to electrical utilities.

**Design and Performance**

The DFC-ERG® power plant is based on the same technology as FCE's DFC®300 (300 kW), DFC®1500 (1,400kW), and DFC®3000 (2,800 kW). In the DFC®1500 and DFC®3000 units, each fuel cell module contains four standard stacks.

The DFC-ERG® power plant is designed for outdoor application. "Hot" start-up can be accomplished in approximately 10 to 32 hours depending on the length of the shutdown. Start-up from hot standby can be accomplished in several hours. "Cold" start-up, or start-up from ambient to hot standby can be achieved in approximately three days.

The inverter is rated at 13.8 kV, 60 Hz, 3-phase, 3,100 kVA at power quality requirements of IEEE 519. The inverter, provided as a standard component, will have the ability to automatically regulate the output power factor to specific owner requirements from 0.9 to 1.0 power factor

Controls for the Plant provide for automatic synchronization with a utility source through a UL1741 certified inverter.

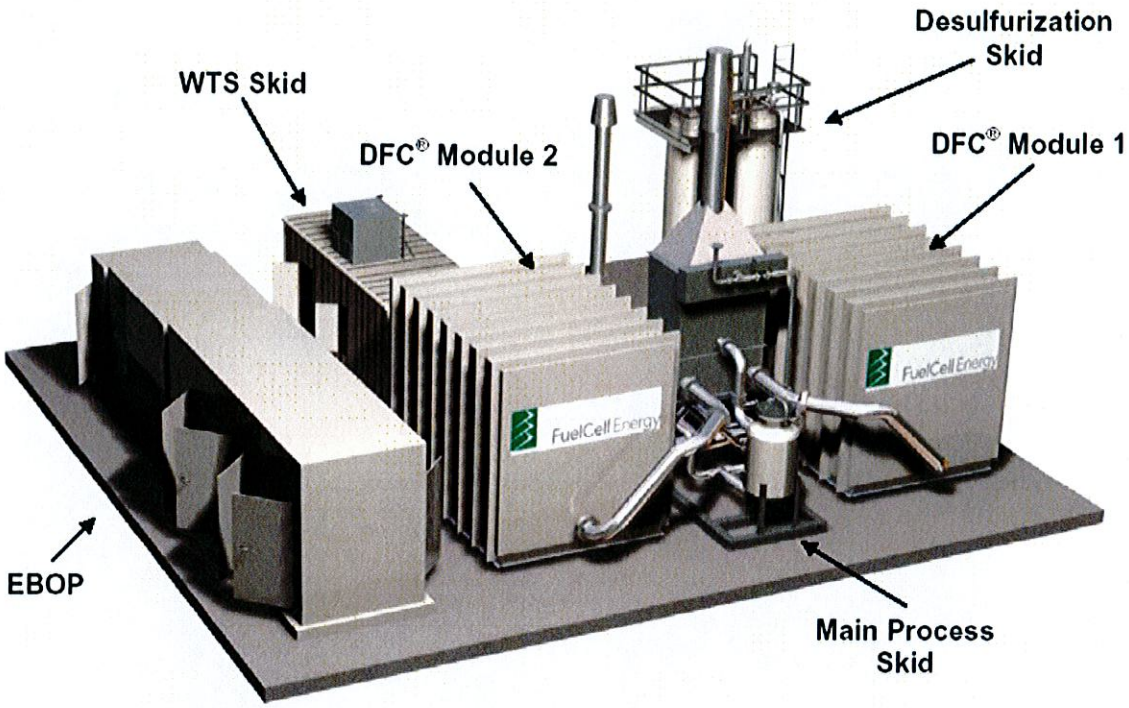
The DFC-ERG® does not require a separate connection for start-up or station service power. Start-up power is back-fed through the same breaker, otherwise all parasitic power is provided by the fuel cell power plant. For the Project, the parasitic load under normal operations is approximately 350 kW.

**DFC®3000 Fuel Cell Technology**

The DFC®3000 is capable of providing high quality baseload electric power using an efficient, environmentally clean fuel cell technology. The powerplant is designed to operate on natural gas and anaerobic digester gas (with auxiliary equipment) as the fuel source. The powerplant consists of multiple skids classified into three major subsystems (as shown in Figure 1-3), these subsystems are as follows:

- **Mechanical Balance of Plant (MBOP):** The MBOP is comprised of three separate skids; the Desulfurization skid, the Main Process skid, and the Water Treatment System (WTS) skid. The MBOP supplies fresh air, cleans and heats fuel and water, and includes the powerplant control system.
- **DFC® Module:** The DFC®3000 powerplant includes two DFC® Modules. Each DFC® Module contains four fuel cell stacks. The DFC® module performs the electrochemical conversion of the continuous fuel supply into DC electric power.
- **Electrical Balance of Plant (EBOP):** The EBOP is comprised of multiple skids; it includes an inverter, a transformer and a switchgear section. The EBOP converts the fuel cell DC power into utility grade AC power.

**Figure 1-3**
**DFC-3000 Power Plant**

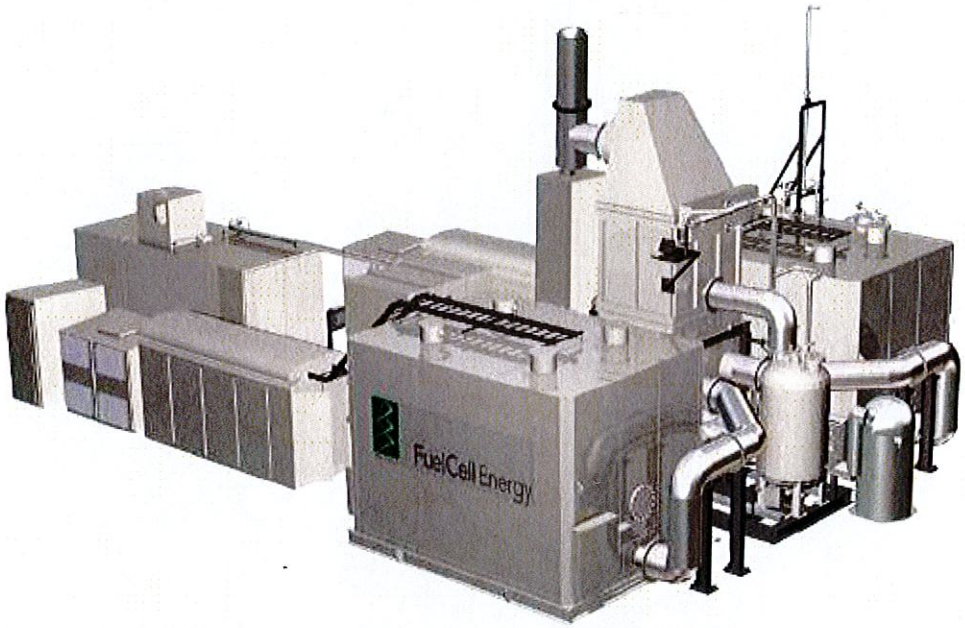



**Cryostar ERG Technology**

Cryostar ERG is a skid mounted turbo-expander including the following balance of plant equipment:

- high-speed expander wheel and pressure casing;
- gearbox with gearpump, low speed coupling;
- pneumatically operated variable inlet guide vanes; and
- complete lube oil system consisting of reservoir, oil heater, lube oil pump, lube oil cooler, dual oil filter and all safety instruments for hazardous area.

# Noise Assessment Study




*DFC-ERG Glastonbury Project*

***Glastonbury, Connecticut***

September 22, 2009

Prepared For:

**DFC-ERG CT, LLC**
3 Great Pasture Road
Danbury, CT 06813

Prepared By:

**Modeling Specialties**
30 Maple Road
Westford, MA 01886

Modeling Specialties

# Environmental Noise Assessment
# Glastonbury Fuel Cell Project

## Background

The DFC-ERG Glastonbury Project is a proposed at the existing Connecticut Natural Gas (CNG) gate station adjacent to Hebron Avenue in Glastonbury, Connecticut. The facility will generate approximately 3.4 MW of Class I Renewable Energy electricity under a long-term contract to Connecticut Light and Power ("CL&P") under the Connecticut Clean Energy Fund's ("CCEF") Project 150 Program. The process combines two Connecticut Class I Renewable Energy resources, uses proven commercial technologies, is ultra-clean, and is more efficient than any other electricity generating technology in its size range.

This analysis evaluates the potential noise impact of the proposed Project. The study is based on equipment configuration provided by FuelCell Energy, Inc. ("FuelCell Energy"). The assessment is based on the criteria provided by the Connecticut Department of Environmental Protection (CDEP). Ambient sound levels in the area were established by direct measurements of the daytime and nighttime sound using standardized equipment. Sound levels from the proposed equipment were estimated based on vendor design and measured sound from similar equipment configurations. Sound level modeling techniques were used to estimate the potential impacts at receiving locations. The study indicates that the facility will comply with the CDEP performance requirements for noise at the nearest residences.

## Overview of Project and Site Vicinity

The Project site is located at the existing Glastonbury gate station. The developed area of the existing site has a utility character with low profile buildings and various transfer pipes. It is largely shielded from public view by the forested site and the elevated terrain. The surrounding area is residential in character. The bulk of the site is currently and will remain densely forested. The site borders Chalker Hill Road to the south and west. The site also has frontage on Hebron Avenue to the north. East of the site is additional undeveloped forest land. Existing sources of sound in the area include traffic along Hebron Avenue and other roadways, as well as some sound from residential activities and the existing site.

# Noise Analysis: Discussion of Analysis Methods

There are a number of ways in which sound (noise) levels are measured and quantified. All of them use the logarithmic decibel (dB) scale. Following is a brief introduction to the noise measurement terminology used in this assessment.

*Noise Metrics*

The Sound Level Meter used to measure noise is a standardized instrument.[1] It contains "weighting networks" to adjust the frequency response of the instrument to approximate that of the human ear under various circumstances. One of these is the *A-weighting* network. A-weighted sound levels emphasize the middle frequency sounds and de-emphasize lower and higher frequency sounds; they are reported in decibels designated as "dBA." Figure 2 illustrates typical sound levels produced by sources that are familiar from everyday experience.

The sounds in our environment usually vary with time so they cannot simply be described with a single number. Two methods are used for describing variable sounds. These are *exceedance levels* and *equivalent levels.* Both are derived from a large number of moment-to-moment A-weighted sound level measurements. Exceedance levels are designated $L_n$, where "n" can have any value from 0 to 100 percent. For example:

- $L_{90}$ is the sound level in dBA exceeded 90 percent of the time during the measurement period. The $L_{90}$ is close to the lowest sound level observed. It is essentially the same as the *residual* sound level, which is the sound level observed when there are no loud, transient noises.
- $L_{50}$ is the median sound level; the sound level in dBA exceeded 50 percent of the time during the measurement period.
- $L_{10}$ is the sound level in dBA exceeded only 10 percent of the time. It is close to the maximum level observed during the measurement period. The $L_{10}$ is sometimes called the *intrusive* sound level because it is caused by occasional louder noises like those from passing motor vehicles. By using exceedance levels, it is possible to separate prevailing, steady noises ($L_{90}$) from occasional, louder noises ($L_{10}$) in the environment.
- The *equivalent level* is the level of a hypothetical steady sound that has the same energy as the actual fluctuating sound observed. The equivalent level is designated $L_{eq}$, and is also A-weighted. The equivalent level is strongly influenced by occasional loud, intrusive noises.

When a steady sound is observed, all of the $L_n$ and $L_{eq}$ are equal. This analysis is based on the $L_{eq}$ metric. All broadband levels represented in this study are weighted using the A-weighting scale.

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1 *American National Standard Specification for Sound Level Meters*, ANSI S1.4-1983, published by the Standards Secretariat of the Acoustical Society of America, Melville, NY.

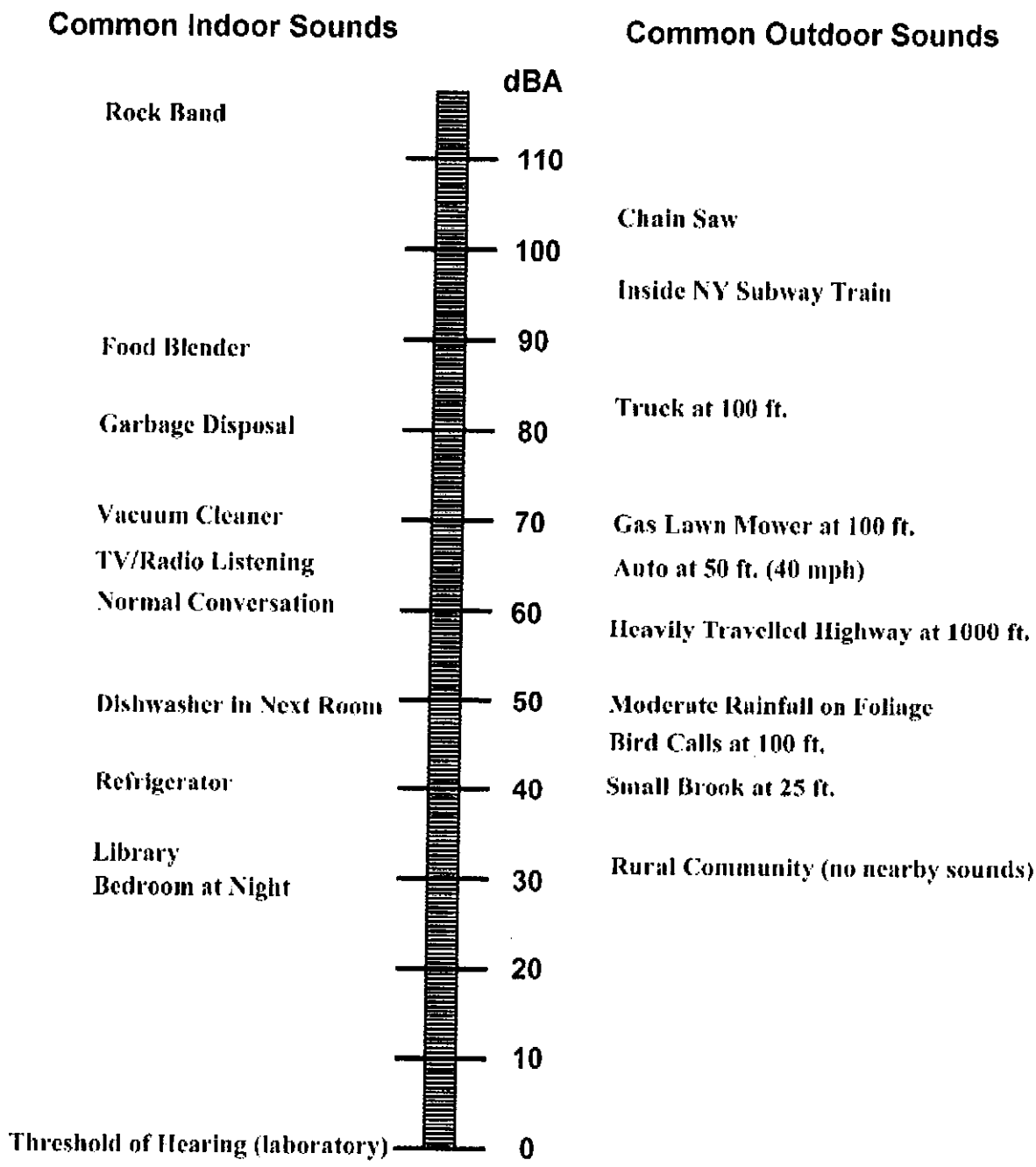



**Figure 1:**
Typical Sound Levels from Everyday Experience

In the design of noise control treatments, it is essential to know something about the frequency spectrum of the sound of interest. Noise control treatments do not function like the human ear, so simple A-weighted levels are not useful for noise-control design or the identification of tones. The frequency spectra of sounds are usually stated in terms of *octave band sound pressure levels*, in dB, with the octave frequency bands being those established by standard.[2] The sounds in the community were measured in 1/3 octave band levels. The sounds expected as a result of this project have been evaluated with respect to the octave band sound pressure levels as well as the A-weighted equivalent sound level. For simplicity, they are summarized in this report in terms of the combined A-weighted level.

***Noise Regulations and Criteria***

Sound compliance is judged on two bases: the extent to which governmental regulations or guidelines are met, and the extent to which it is estimated that the community is protected from excessive sound levels. The governmental regulations that may be applicable to sound produced by activities at the Site are summarized below.

- ***Federal***

Occupational noise exposure standards: 29 CFR 1910.95. This regulation restricts the noise exposure of employees at the workplace as referred to in Occupational Safety and Health Administration requirements. The facility will emit only occasional sounds of modest levels, as demonstrated by this study.

- ***State***

The state of Connecticut regulates noise at Regulation Title 22a, Sections 69-1 through 69-7.4, Control of Noise. The project is a Class C (Industrial) emitter. Adjacent properties are zoned residential and were evaluated as a Class A Noise Zone. The corresponding criteria are shown in the following table based on zoning of the source and receiving land uses.

**Table 1: Connecticut DEP Noise Standards, by Zoning District**

| | Receptor's Zone | | | |
|---|---|---|---|---|
| Emitter's Zone | Industrial | Commercial | Residential/Day | Residential/Night |
| Residential | 62 dBA | 55 dBA | 55 dBA | 45 dBA |
| Commercial | 62 dBA | 62 dBA | 55 dBA | 45 dBA |
| Industrial | 70 dBA | 66 dBA | 61 dBA | 51 dBA |

2 *American National Standard Specification for Octave, Half-octave and Third-octave Band Filter Sets*, ANSI S1.11-1966 (R1975).

- *Local*

  As part of an interstate transportation project, the gas pipeline is generally regulated at the State level. In this study, Modeling Specialties has evaluated the site based on the Connecticut Department of Environmental Protection (CDEP) criteria at sensitive locations. A review of the Town Charter and Code of Ordinances has not identified any quantitative local noise standards.

## Existing Community Sound Levels

A site survey and noise measurement study was conducted for the proposed facility on July 6, 2009. The sound levels were established near the site by direct measurements of twenty-minute duration in both daytime and nighttime periods. The moment-to-moment sound levels fluctuate based on the community events that occur during that moment. Measurements were taken along the Right-of-Way to the west (Figure 2). This location was chosen to represent the nearest residences, largely outside the influence of site sounds except during late night. Additional measurements were taken of several existing site equipment sources of sound.

Attended sound level measurements were made using a Rion NA-28 sound level meter. These measurements create a baseline community sound level and capture the frequency-specific character of the sound. The meter was mounted on a tripod, approximately 5 feet above the ground. The microphone was fitted with the factory recommended 3-inch foam windscreen. The attended meter was programmed to take measurements for 20 minutes and then to store processed statistical levels. The meter meets the requirements of ANSI S1.4 Type 1 – Precision specification for sound level meters. The meter was factory verified within one year of the study. It was calibrated in the field using a Rion NC-74 acoustical calibrator before and after each measurement session. The field calibrations indicated that the meters did not drift during the study. The attended meter was also equipped with a real time octave band filter set. The filter complies with the requirements of the ANSI S1-11 for octave band filter sets.

The results of the ambient sound level measurements are summarized in Table 2. The $L_{eq}$ is the overall average of sound energy. The $L_{90}$ characterizes the residual or background sound level. Occasional intrusions like vehicle pass-byes cause the levels to momentarily be raised higher than the background level. These would affect the Leq but not the L90. The primary existing sound source at the existing compound is from the pressure let-down system.

**Table 2: Ambient Sound Level Measurements on July 6, 2009**

| Location | Time | Period | $L_{eq}$ | $L_{90}$ |
|---|---|---|---|---|
| Chalker Hill Road | 1:15 AM | Night | 49 dBA | 38 dBA |
| Chalker Hill Road | 4:17 PM | Day | 64 dBA | 52 dBA |

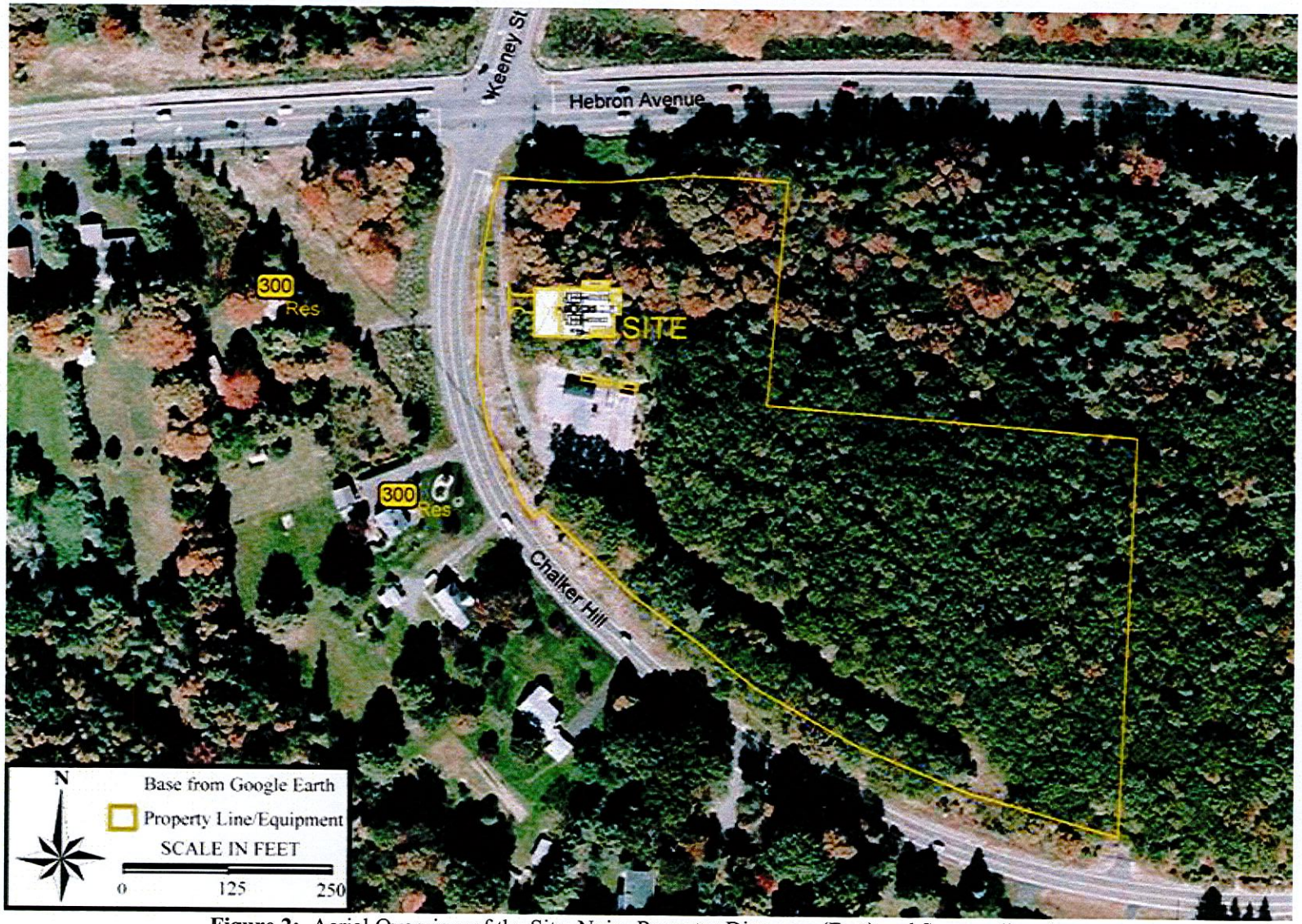



**Figure 2:** Aerial Overview of the Site, Noise Receptor Distances (Feet) and Surrounding Area

During the daytime, the sound field was dominated by steady traffic on Hebron Avenue. Other sources of sound include residential activities, local birds, and site equipment. Nighttime traffic levels were sparse and the existing site became the dominant sound source within an area of approximately one block. During periods when no traffic was in the area, only the facility could be heard.

## Expected Sounds from the Proposed Installation

The proposed installation has been designed with significant attention to protecting the community sound environment. Most of the equipment planned for the installation will produce no sound. The fuel cell technology does not require many of the mechanical sources of noise that are typical of power generation facilities. But the process will emit some sound energy, which is quantified and modeled at sensitive areas. This analysis represents the most likely sound levels to be expected as a result of the normal operation of the facility using manufacturer's data for the equipment.

A computer model was developed for the facility's sound levels based on conservative sound propagation principles prescribed in the acoustics literature. Most of the equipment sources will produce gentle sound of a continuous nature. Each of the potential sources during routine operation of the facility was identified. The sound from each facility-related source is estimated at the source and at the community receptors. The sum of the contributing sources is used to represent the predicted sound level at the modeled location. Identifying specific receiving locations is a key element of the noise modeling, since sound levels decrease exponentially with increasing distance. The distances used in this study represent the distance between the sources and the nearest representative sensitive receptor. The results of the modeling show that the proposed equipment will meet the CDEP standards and will have little negative impact on the community sound field.

### Sources of Project Sound

There are several sources of modest sound at the facility. Under normal conditions, the few noise sources will produce consistent sound through the day and night. At least one source, the cooling condenser on the Water Processing Skid, will cycle on and off based on the process temperature and cooling requirement. For this conservative study, all sources are analyzed as continuous sources.

The design of the facility is based on the proposed equipment layout shown in Figure 1. The hybrid fuel cell facility will include a single DFC-3000 fuel cell plant and a small turbo-expander (also referred to as the ERG – Energy Recovery Generator). The ERG and associated support equipment will be located inside weatherproof enclosures. The DFC-3000 fuel cell is manufactured in Connecticut by FuelCell Energy, Inc and the ERG is manufactured by Linde Cryostar. As shown in Figure 1, the DFC fuel cell will be located outside of the gate station compound, and the ERG and associated heat exchangers and control system, will be located inside the existing gate station compound.

The Project will be supplied natural gas through the CNG distribution system from an existing gas transmission line that runs through the property. Other utilities necessary to support the operation of the Project will be delivered via existing infrastructure systems. The electrical energy produced will be delivered to the electricity grid through a 23 kV interconnection with CL&P. Figure 4 shows a block model of the DFC-3000 power plant in its generic configuration, indicating the various noise sources.

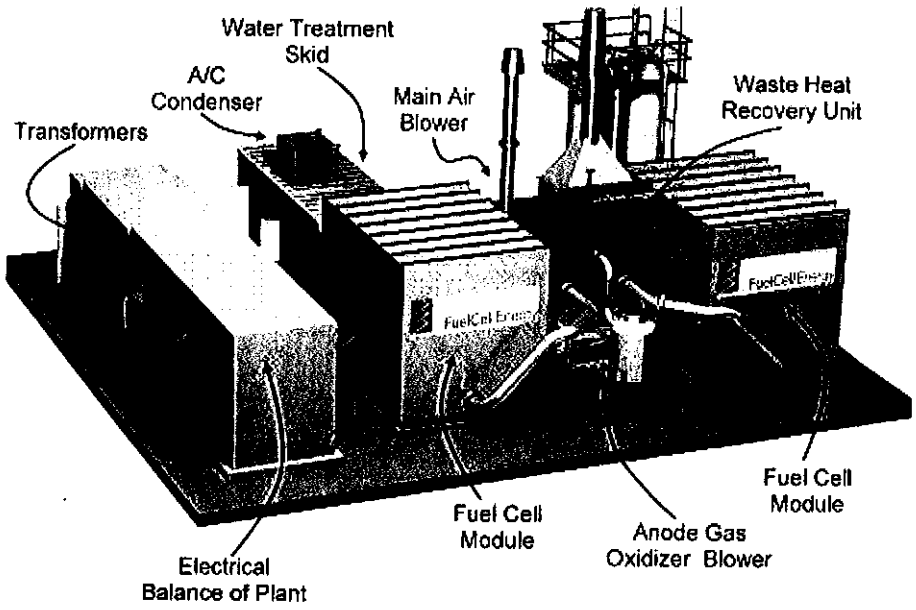



**Figure 4:**
Graphical Summary of Individual Sources of Sound on a typical DFC-3000 Power Plant.

The proposed layout of the Glastonbury installation is shown in Figure 5. The analysis is based on the contributions of individual sources and propagation losses to the analyzed receptors. Results are shown in Table 3 and illustrated in Figure 6.

**Table 3: Summary of Noise Modeling Results**

| Receptor | Distance (ft) | Project Sound (dBA) | Criterion (dBA) |
|---|---|---|---|
| Property Line, N | 250 | 47 | |
| Property Line, E | 200 | 49 | |
| Residence, West | 300 | 45 | 51 |
| Residence, SW | 300 | 43 | 51 |

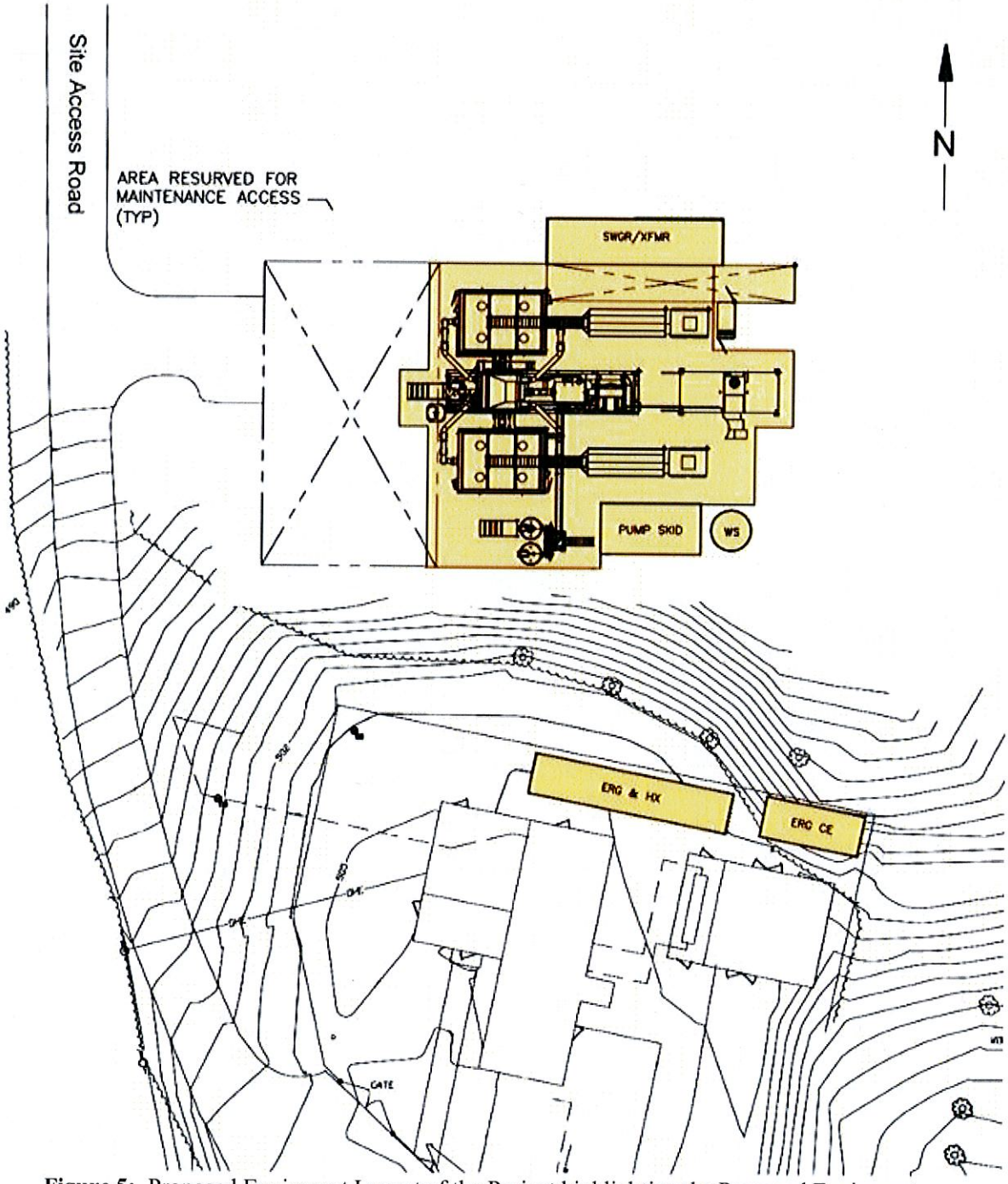



**Figure 5:** Proposed Equipment Layout of the Project highlighting the Proposed Equipment

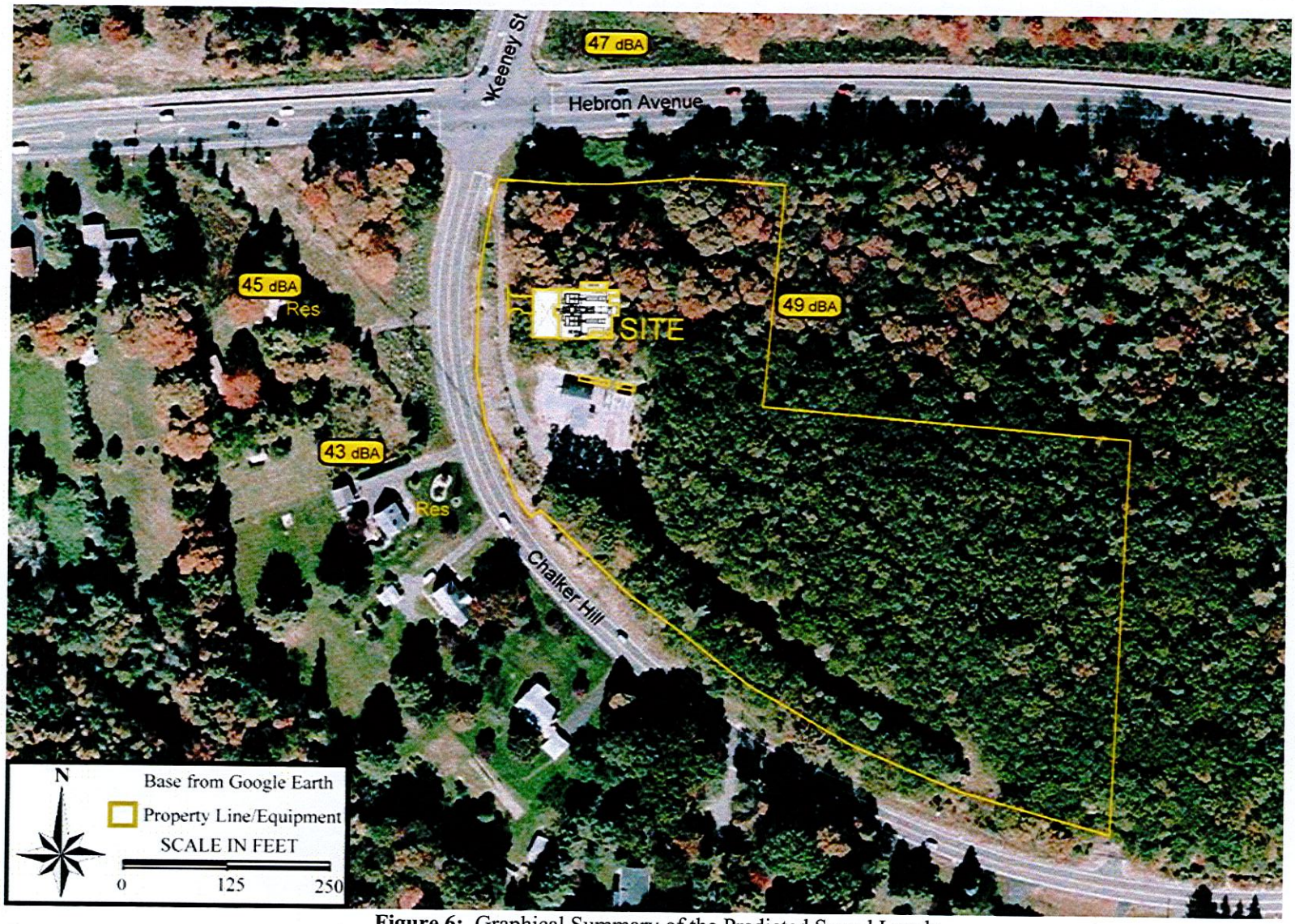



**Figure 6:** Graphical Summary of the Predicted Sound Levels

## Mitigation Measures

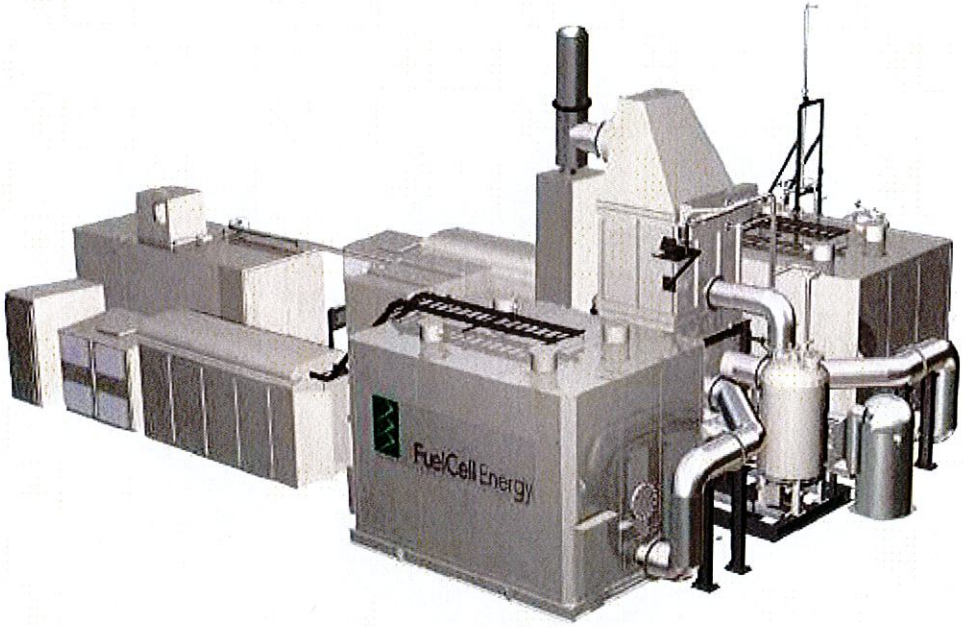
The proposed fuel cell equipment is inherently quiet compared to other forms of electrical generation. The first noted mitigation measure is that the DFC is located where the terrain and the existing gate station structures provide substantial shielding of the potential noise from the proposed equipment. The DFC is offered with a 4 dB noise reduction package that is specified to meet the noise goals at the Glastonbury installation. The package addresses most significant sources within the DFC package. In addition, the operation of the ERG equipment will usually eliminate one of the primary sources of existing sound at the gate station – the let-down valve. This will reduce the sound from the existing station while the ERG is providing the pressure reduction. Like the existing let-down valve, the reduction of gas pressure will produce sound. The ERG will be in a weather proof enclosure that will also be treated with insulation and packing material to provide approximately 14 dB of sound reduction for the ERG unit. This, with the shielding provided by the gate station buildings will reduce the ERG sound at the residences to approximately the same as the DFC equipment.

## Conclusions

The proposed fuel cell equipment package lacks the heavy mechanical equipment that is commonly associated with electrical generation. There will be several sources of modest sound such as blowers, pumps, condenser and fans. The size of the equipment and character of the sound will be more typical of the existing commercial building mechanical equipment than of typical electrical generating sources.

The existing sound levels were established by direct measurements off Chalker Hill Road at the powerline ROW. The potential sources of sound at the facility have been identified and quantified. Sound level modeling techniques were employed to estimate the sound levels at the property lines and nearest receptor locations. The results of the modeling indicate that the facility levels will meet the CDEP noise criteria at the nearby residential receptors. Since sound decreases with distance, the sound will be even less at more distant locations.

# Visual Aesthetics Assessment Study




*DFC-ERG Glastonbury Project*

***Glastonbury, Connecticut***

September 22, 2009

Prepared For:

**DFC-ERG CT, LLC**
3 Great Pasture Road
Danbury, CT 06813

Prepared By:

**Modeling Specialties**
30 Maple Road
Westford, MA 01886

Modeling Specialties

# Visual Aesthetics Assessment
# Glastonbury Fuel Cell Project

### Background

The DFC-ERG Glastonbury Project is a hybrid fuel cell generating facility proposed at the existing Connecticut Natural Gas (CNG) gate station adjacent to Hebron Avenue in Glastonbury, Connecticut. The facility will generate approximately 3.4 MW of Class I Renewable Energy electricity under a long-term contract to Connecticut Light and Power ("CL&P") under the Connecticut Clean Energy Fund's ("CCEF") Project 150 Program. The process combines two Connecticut Class I Renewable Energy resources, uses proven commercial technologies, is ultra-clean, and is more efficient than any other electricity generating technology in its size range.

This environmental analysis is limited to evaluating the visual aesthetics of the facility siting. It summarizes the existing condition at the site and evaluates the potential visual impact of the proposed installation. The study is based on equipment configuration provided by FuelCell Energy, Inc (FCE). There are no quantitative standards for evaluating visual impact, so the analysis is based on "before" and "after" views at the only public location where the equipment will be visible. Existing conditions were evaluated as part of a site survey conducted on July 6, 2009.

### Overview of Project and Site Vicinity

The Project site is located in Glastonbury, CT, hosted at the existing natural gas gate station property. The existing site is an industrial/transportation use but has low profile buildings on a hill that is compatible with the residential character of the area. The surrounding land uses are predominantly residential. The site is large compared to the developed area used by the gate station and underground pipeline right-of-way (ROW). Undeveloped areas of the site are forested. The north end of the site fronts on Hebron Avenue. The properties to the east of the site are also undeveloped forest. The south through west of the site abuts Chalker Hill Road. The proposed fuel cell equipment layout will be located immediately to the north of the gate station compound with a separate entrance to the combined site drive. Because of this configuration, the only public view of the fuel cell compound will be a fleeting view from Chalker Hill Road. This study is intended to conservatively represent the effect on the area viewsheds, so the before and after images are made at this location.

## Visual Analysis: Discussion of Analysis Methods

### Selection of Visual Receptors

In order to assess the potential visual impacts associated with the project, a viewshed analysis of the surrounding area was conducted. This survey process was intended to identify public locations in representative directions from the proposed facility from which the structures of the proposed facility may affect the visual character of the area. Based on the proposed location of the equipment and existing site conditions, dense forest and foliage will obstruct

the view of the equipment from locations in all directions but to the west. Because of the low equipment profile, the only locations that are relevant to this study have an unobstructed view of the site. Therefore, the only noticeable views will be from the direction of Chalker Hill Road to the west. The terrain will provide shielding for northbound traffic, so the analysis is based on the far side of the road, representing the southbound driving area. The following viewpoint is analyzed in this study.

- Viewpoint: The view of the facility will remain obscured to traffic along most of Chalker Hill Road. There is an access opening planned between the equipment compound and the existing site access drive to the west. The image was taken from the far side of Chalker Hill roadway opposite the opening in the trees where there is a partially exposed view of the equipment.

**Summary of Equipment**

The design of the facility is based on the proposed equipment layout shown in Figure 1. The hybrid fuel cell facility will include a single DFC-3000 fuel cell plant and a small turbo-expander (also referred to as the ERG – Energy Recovery Generator). The ERG and associated support equipment will be located inside weatherproof enclosures. The DFC-3000 fuel cell is manufactured in Connecticut by FuelCell Energy, Inc and the ERG is manufactured by Linde Cryostar. As shown in Figure 1, the DFC fuel cell will be located outside of the gate station compound, and the ERG and associated heat exchangers and control system, will be located at the northern perimeter of the existing gate station.

The Project will be supplied natural gas through the CNG distribution system from an existing gas transmission line that runs through the property. Other utilities necessary to support the operation of the Project will be delivered via existing infrastructure systems. The electrical energy produced will be delivered to the electricity grid through a 23 kV interconnection with CL&P.

**Methodology of Analysis**

The equipment configuration was provided by FCE, the equipment developer and supplier. Figure 2 shows a solid model of the facility components with annotations showing individual component heights. The visual modeling is based on the construction of a similar 3 dimensions solid block model using Autodesk's 3-D VIZ program.

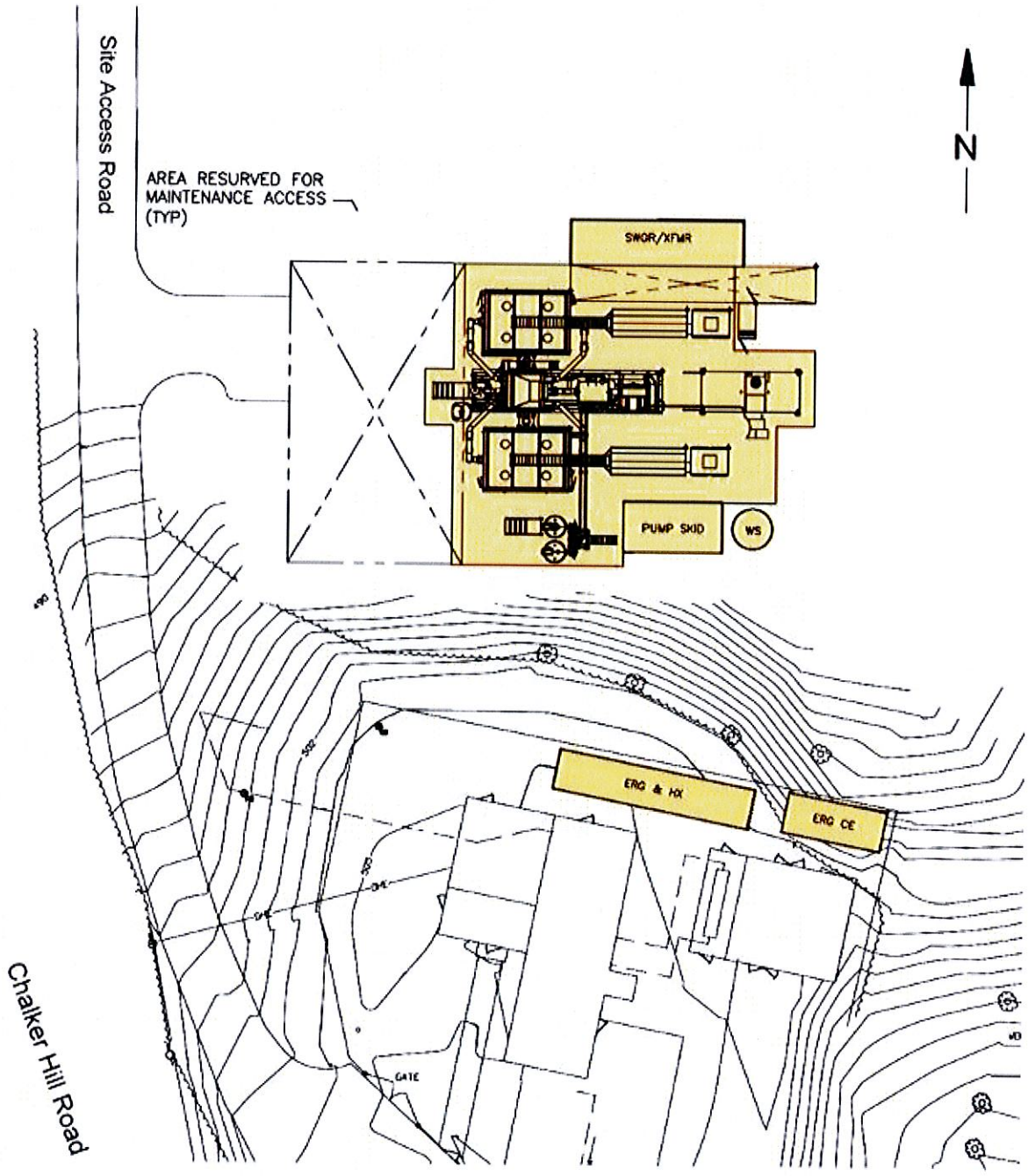



**Figure 1:**
Proposed Layout of the Equipment at the Existing Gate Station.

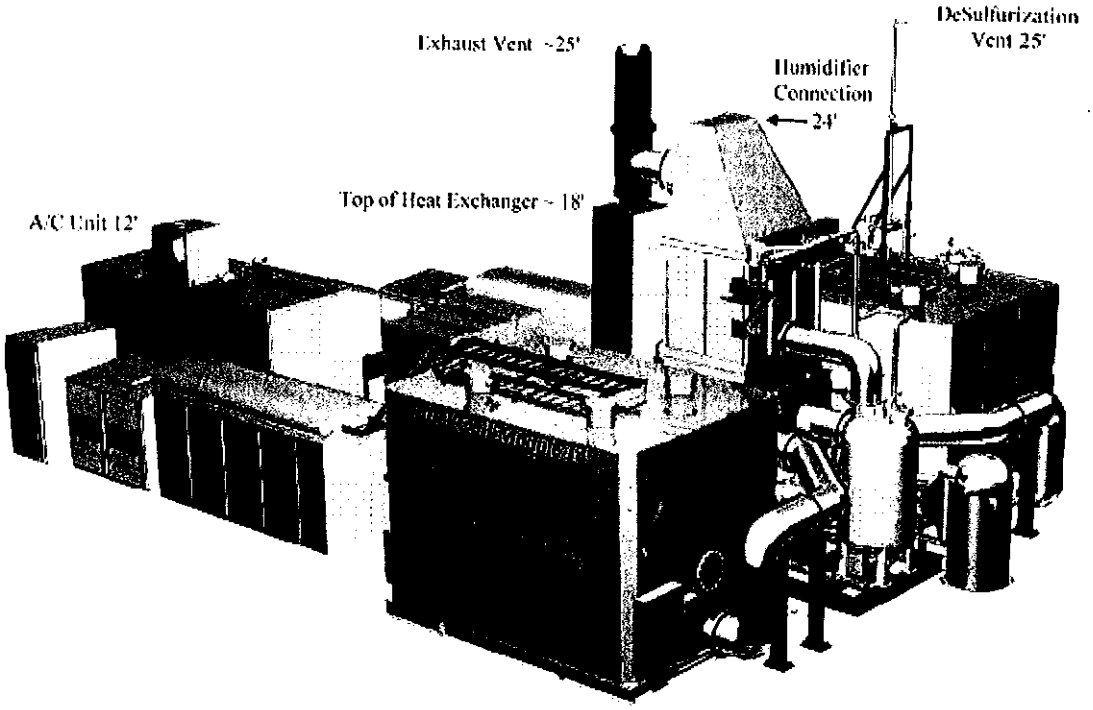



**Figure 2:**
Graphical Summary of Individual Plant Visual Elements on the DFC-3000 Package.

Once the 3-D model is developed, the model can be rendered from the vantage point that represents the visual reference location. Mitigation features can also be incorporated into the project-specific model when appropriate. The proposed facility model is then overlaid on actual field images to simulate the developed project. The simulated plant equipment was overlaid on the photo at the proper scale and orientation, such that the visual context of the proposed structures is illustrated. Figure 3 is an aerial photograph of the project area showing the equipment orientation and the locations of the analyzed photographs. The isometric view of the equipment shown in Figure 2 indicates the height of several key components.

**Results of Visual Impact Analysis**

The block model was overlaid onto field images from roadway viewshed location. It represents the ground level viewing location about 5 feet above the ground. The existing condition is shown in Figure 4. The existing background was modified to reflect the necessary clearing of the equipment footprint, and then overlaid with the equipment block model. The final view of the proposed equipment configuration is shown in Figure 5. A comparison of these views represents the predicted visual effect that the facility will have at analyzed viewing location off Chalker Hill Road. Note that in the rendered views of the equipment there is deep shading used for the purpose of clearly illustrating the individual equipment components. Under high sun angles, cloudy days and when shaded by the forest, the equipment views will be more subtle.

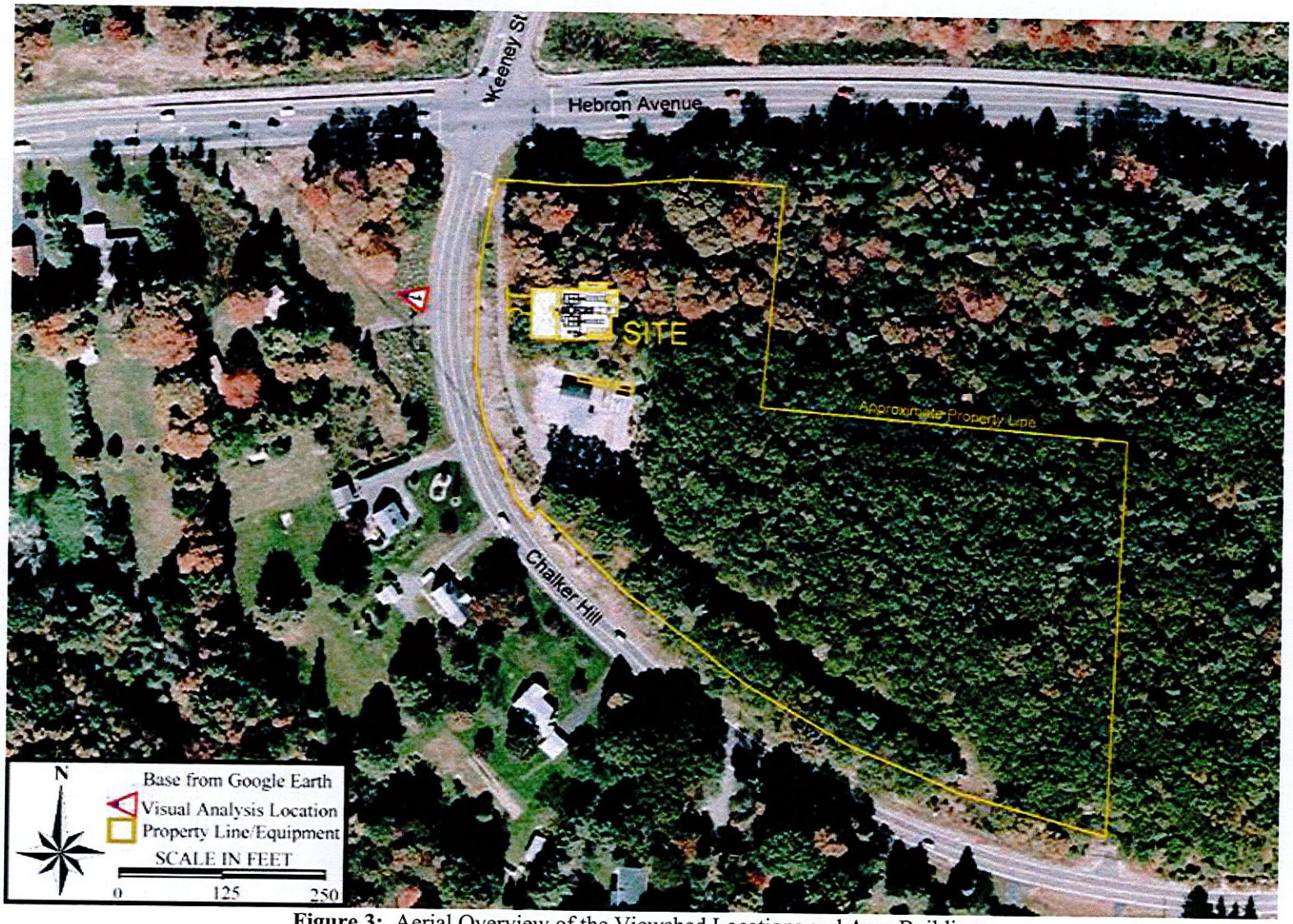



**Figure 3:** Aerial Overview of the Viewshed Locations and Area Buildings

Most nearby residences will not have direct visual contact with the site from their homes. The only community exposure will be directly to the west across Chalker Hill Road from the site. The analyzed view is from the same directions as the nearest residences. However, the images were taken from the far shoulder of the roadway. The residential views would be further shielded by distance and existing trees and foliage.

**Lighting**

The facility will be illuminated as required for worker safety and security during nighttime. No unnecessary lighting will be employed. Because of the low equipment profile, no special lighting will be required for visibility. Security lighting at the plant will be focused and hooded as appropriate to minimize the direct or indirect illumination of neighboring properties.

**Mitigation Measures**

The facility design has inherently low profile components. The layout of the facility on the site has retained a visual forested buffer to the south of the driveway that obscures about half of the potential view. The remaining view will be further reduced by adding slats to the 10 foot security fence. The color of several key components is dictated by the need for low solar heat load. The consistent use of that color on all equipment will reduce the visual distinction of individual components.

**Conclusions**

Based on the analysis, the proposed Glastonbury Project will have little impact on the visual character of the community. There will only be a fleeting view of the Project from one local roadway. The visual impact is inherently small due to the low profile of the equipment in the context of the mature forest in the area. The site was laid out to allow some existing forest to remain to the west which will largely shield the view from the roadway and the community. While the proposed equipment will be partially visible from the adjacent roadway, it will have a low profile similar to the low buildings at the existing Gate Station.

**Figure 4**: Existing View from the West overlooking Chalker Hill Road

**Figure 5**: The Proposed View from the far side of the Roadway to the West

**Connecticut Commission on Culture & Tourism**

**Historic Preservation and Museum Division**

One Constitution Plaza
Second Floor
Hartford, Connecticut
06103

860.256.2800
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May 27, 2008

Mr. Donald C. DiCristofaro
Blue Sky Environmental LLC
105 Chestnut Street
Needham, MA 02492

Subject: 3.4-MW Hybrid-Fuel Cell
Connecticut Natural Gas Facility
1835 Hebron Avenue
Glastonbury, CT

Dear Mr. DiCristofaro:

The State Historic Preservation Office has reviewed the above-named project. This office expects that the proposed undertaking will have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places.

This office appreciates the opportunity to have reviewed and commented upon the proposed undertaking.

This comment is provided in accordance with the National Historic Preservation Act and the Connecticut Environmental Policy Act.

For further information, please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

Karen Senich
State Historic Preservation Officer

# STATE OF CONNECTICUT
## DEPARTMENT OF ENVIRONMENTAL PROTECTION

July 9, 2008

Mr. Don DiCristofaro
Blue Sky Environmental LLC.
105 Chestnut Street, Suite 37
Needham, MA 02492

Re: Hybrid-Fuel Cell Project at the
CT Natural Gas Facility, Glastonbury

Dear Mr. DiCristofaro:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the proposed installation of a fuel cell project at 1835 Hebron Avenue in Glastonbury, Connecticut. According to our information there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur at the site in question.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at 424-3592. Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Sincerely,

Dawn M. McKay
Biologist/Environmental Analyst

DMM/blm

cc: F. Riese, DEP Environmental Review