RIPUC Use Only	
Date Application Received:	__ __/__ __/__ __
Date Review Completed:	__ __/__ __/__ __
Date Commission Action:	__ __/__ __/__ __
Date Commission Approved:	__ __/__ __/__

GIS Certification #:
MSS1572 ; NON32106

RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM

The Standard Application Form
Required of all Applicants for Certification of Eligibility of Renewable Energy Resource
(Version 6 – January 21, 2008)

STATE OF RHODE ISLAND PUBLIC UTILITIES COMMISSION
Pursuant to the Renewable Energy Act
Section 39-26-1 et. seq. of the General Laws of Rhode Island

NOTICE:

When completing this Renewable Energy Resources Eligibility Form and any applicable Appendices, please refer to the State of Rhode Island and Providence Plantations Public Utilities Commission Rules and Regulations Governing the Implementation of a Renewable Energy Standard (RES Regulations, Effective Date: January 1, 2006), and the associated RES Certification Filing Methodology Guide. All applicable regulations, procedures and guidelines are available on the Commission's web site: www.ripuc.org/utilityinfo/res.html. Also, all filings must be in conformance with the Commission's Rules of Practice and Procedure, in particular, Rule 1.5, or its successor regulation, entitled "Formal Requirements as to Filings."

• Please complete the Renewable Energy Resources Eligibility Form and Appendices using a typewriter or black ink.

• Please submit one original and three copies of the completed Application Form, applicable Appendices and all supporting documentation to the Commission at the following address:

Rhode Island Public Utilities Commission
89 Jefferson Blvd
Warwick, RI 02888
Attn: Renewable Energy Resources Eligibility

In addition to the paper copies, electronic/email submittals are required under Commission regulations. Such electronic submittals should be sent to: Luly E. Massaro, Commission Clerk at lmassaro@puc.state.ri.us

• In addition to filing with the Commission, Applicants are required to send, electronically or electronically and in paper format, a copy of the completed Application including all attachments and supporting documentation, to the Division of Public Utilities and Carriers and to all interested parties. A list of interested parties can be obtained from the Commission's website at www.ripuc.org/utilityinfo/res.html.

• Keep a copy of the completed Application for your records.

• The Commission will notify the Authorized Representative if the Application is incomplete.

• Pursuant to Section 6.0 of the RES Regulations, the Commission shall provide a thirty (30) day period for public comment following posting of any administratively complete Application.

• Please note that all information submitted on or attached to the Application is considered to be a public record unless the Commission agrees to deem some portion of the application confidential after consideration under section 1.2(g) of the Commission's Rules of Practice and Procedure.

• In accordance with Section 6.2 of the RES Regulations, the Commission will provide prospective reviews for Applicants seeking a preliminary determination as to whether a facility would be eligible prior to the formal certification process described in Section 6.1 of the RES Regulations. Please note that space is provided on the Form for applicant to designate the type of review being requested.

• Questions related to this Renewable Energy Resources Eligibility Form should be submitted in writing, preferably via email and directed to: Luly E. Massaro, Commission Clerk at RES@puc.state.ri.us

SECTION I: Identification Information

1.1 Name of Generation Unit (sufficient for full and unique identification):
Granby LFG ; Granby LFG Off Grid

1.2 Type of Certification being requested (check one):
XX Standard Certification Prospective Certification (Declaratory Judgment)

1.3 This Application includes: (Check all that apply)[1]

- ☐ APPENDIX A: Authorized Representative Certification for Individual Owner or Operator
- ☐ APPENDIX B: Authorized Representative Certification for Non-Corporate Entities Other Than Individuals
- ☐ APPENDIX C: Existing Renewable Energy Resources
- ☐ APPENDIX D: Special Provisions for Aggregators of Customer-sited or Off-grid Generation Facilities
- ☐ APPENDIX E: Special Provisions for a Generation Unit Located in a Control Area Adjacent to NEPOOL
- ☒ XX APPENDIX F: Fuel Source Plan for Eligible Biomass Fuels

1.4 Primary Contact Person name and title: Sandra Gillis
Business Manager

1.5 Primary Contact Person address and contact information:
Address: Industrial Power Services Corp.
PO Box 840
Ware, MA 01082
Phone: 413-967-7415 Fax: 413-967-7417
Email: ips1@verizon.net

1.6 Backup Contact Person name and title: James M. Malandrinos
President

1.7 Backup Contact Person address and contact information:
Address: Industrial Power Services Corp.
PO Box 840
Ware, MA 01082
Phone: 413-967-7415 Fax: 413-967-7417
Email: ips1@verizon.net

[1] Please note that all Applicants are required to complete the Renewable Energy Resources Eligibility Standard Application Form and all of the Appendices that apply to the Generation Unit or Owner or Operator that is the subject of this Form. Please omit Appendices that do not apply.

1.8 Name and Title of Authorized Representative (*i.e.*, the individual responsible for certifying the accuracy of all information contained in this form and associated appendices, and whose signature will appear on the application):
James M. Malandrinos, President

Appendix A or B (as appropriate) completed and attached? Yes (No) N/A

1.9 Authorized Representative address and contact information:
Address: Industrial Power Services Corp.
PO Box 840
Ware, MA 01082
Phone: 413-967-7415 Fax: 413-967-7417
Email: ips1@verizon.net

1.10 Owner name and title: Industrial Power Services Corp.

1.11 Owner address and contact information:
Address: PO Box 840
Ware, MA 01082
Phone: 413-967-7415 Fax: 413-967-7417
Email: ips1@verizon.net

1.12 Owner business organization type (check one):
- ☐ Individual
- ☐ Partnership
- ☒ Corporation
- ☐ Other:

1.13 Operator name and title: Industrial Power Services Corp.

1.14 Operator address and contact information:
Address: PO Box 840
Ware, MA 01082
Phone: 413-967-7415 Fax: 413-967-7417
Email: ips1@verizon.net

1.15 Operator business organization type (check one):
- ☐ Individual
- ☐ Partnership
- ☒ Corporation
- ☐ Other:

SECTION II: Generation Unit Information, Fuels, Energy Resources and Technologies

2.1 ISO-NE Generation Unit Asset Identification Number or NEPOOL GIS Identification Number (either or both as applicable): 1572 ; NON32106

2.2 Generation Unit Nameplate Capacity: 3.2 MW

Off Grid
Generation averages
102 mw-hr per month.

2.3 Maximum Demonstrated Capacity: 3.2 MW

2.4 Please indicate which of the following Eligible Renewable Energy Resources are used by the Generation Unit: (Check ALL that apply) – *per RES Regulations Section 5.0*

- ☐ Direct solar radiation
- ☐ The wind
- ☐ Movement of or the latent heat of the ocean
- ☐ The heat of the earth
- ☐ Small hydro facilities
- X☒ Biomass facilities using Eligible Biomass Fuels and maintaining compliance with all aspects of current air permits; Eligible Biomass Fuels may be co-fired with fossil fuels, provided that only the renewable energy fraction of production from multi-fuel facilities shall be considered eligible.
- ☐ Biomass facilities using unlisted biomass fuel
- ☐ Biomass facilities, multi-fueled or using fossil fuel co-firing
- ☐ Fuel cells using a renewable resource referenced in this section

2.5 If the box checked in Section 2.4 above is "Small hydro facilities", please certify that the facility's aggregate capacity does not exceed 30 MW. – *per RES Regulations Section 3.31*

← check this box to certify that the above statement is true
N/A or other (please explain) _____

2.6 If the box checked in Section 2.4 above is "Small hydro facilities", please certify that the facility does not involve any new impoundment or diversion of water with an average salinity of twenty (20) parts per thousand or less. – *per RES Regulations Section 3.31*

← check this box to certify that the above statement is true
N/A or other (please explain) _____

2.7 If you checked one of the Biomass facilities boxes in Section 2.1 above, please respond to the following:

A. Please specify the fuel or fuels used or to be used in the Unit: Landfill Methane

B. Please complete and attach Appendix F, Eligible Biomass Fuel Source Plan.
Appendix F completed and attached? (Yes) No N/A

2.8 Has the Generation Unit been certified as a Renewable Energy Resource for eligibility in another state's renewable portfolio standard?

☒ Yes ☐ No If yes, please attach a copy of that state's certifying order.

Copy of State's certifying order attached? (Yes) No N/A

SECTION III: Commercial Operation Date

Please provide documentation to support all claims and responses to the following questions:

3.1 Date Generation Unit first entered Commercial Operation: 1 0 / 1 6 / 0 1 at the site.

3.2 Is there an Existing Renewable Energy Resource located at the site of Generation Unit?

☐ Yes
☒ No

3.3 If the date entered in response to question 3.1 is earlier than December 31, 1997 or if you checked "Yes" in response to question 3.2 above, please complete Appendix C.

Appendix C completed and attached? Yes No (N/A)

3.4 Was all or any part of the Generation Unit used on or before December 31, 1997 to generate electricity at any other site?

☐ Yes
☒ No

3.5 If you checked "Yes" to question 3.4 above, please specify the power production equipment used and the address where such power production equipment produced electricity (attach more detail if the space provided is not sufficient):

_____

_____

_____

SECTION IV: Metering

4.1 Please indicate how the Generation Unit's electrical energy output is verified (check all that apply):

☒ ISO-NE Market Settlement System
☒ Self-reported to the NEPOOL GIS Administrator Off grid generation.
☐ Other (please specify below and see Appendix D: Eligibility for Aggregations):

_____

Appendix D completed and attached? Yes No (N/A)

SECTION V: Location

5.1 Please check one of the following that apply to the Generation Unit:

☒ Grid Connected Generation
☐ Off-Grid Generation (not connected to a utility transmission or distribution system)
☐ Customer Sited Generation (interconnected on the end-use customer side of the retail electricity meter in such a manner that it displaces all or part of the metered consumption of the end-use customer)

5.2 Generation Unit address: 11 New Ludlow Road
Granby, MA 01033

5.3 Please provide the Generation Unit's geographic location information:

A. Universal Transverse Mercator Coordinates: N/A

B. Longitude/Latitude: 72° 32.63W 42° 13.55N

5.4 The Generation Unit located: (please check the appropriate box)

☒ In the NEPOOL control area
☐ In a control area adjacent to the NEPOOL control area
☐ In a control area other than NEPOOL which is not adjacent to the NEPOOL control area ← *If you checked this box, then the generator does not qualify for the RI RES – therefore, please do not complete/submit this form.*

5.5 If you checked "In a control area adjacent to the NEPOOL control area" in Section 5.4 above, please complete Appendix E.

Appendix E completed and attached? Yes No (N/A)

SECTION VI: Certification

6.1 Please attach documentation, using one of the applicable forms below, demonstrating the authority of the Authorized Representative indicated in Section 1.8 to certify and submit this Application.

Corporations

If the Owner or Operator is a corporation, the Authorized Representative shall provide **either**:

(a) Evidence of a board of directors vote granting authority to the Authorized Representative to execute the Renewable Energy Resources Eligibility Form, **or**

(b) A certification from the Corporate Clerk or Secretary of the Corporation that the Authorized Representative is authorized to execute the Renewable Energy Resources Eligibility Form or is otherwise authorized to legally bind the corporation in like matters.

Evidence of Board Vote provided?	(Yes)	No	N/A
Corporate Certification provided?	Yes	(No)	N/A

Individuals

If the Owner or Operator is an individual, that individual shall complete and attach APPENDIX A, or a similar form of certification from the Owner or Operator, duly notarized, that certifies that the Authorized Representative has authority to execute the Renewable Energy Resources Eligibility Form.

Appendix A completed and attached?	Yes	No	(N/A)

Non-Corporate Entities

(Proprietorships, Partnerships, Cooperatives, etc.) If the Owner or Operator is not an individual or a corporation, it shall complete and attach APPENDIX B or execute a resolution indicating that the Authorized Representative named in Section 1.8 has authority to execute the Renewable Energy Resources Eligibility Form or to otherwise legally bind the non-corporate entity in like matters.

Appendix B completed and attached?	Yes	No	(N/A)

6.2 Authorized Representative Certification and Signature:

I hereby certify, under pains and penalties of perjury, that I have personally examined and am familiar with the information submitted herein and based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties, both civil and criminal, for submitting false information, including possible fines and punishment. My signature below certifies all information submitted on this Renewable Energy Resources Eligibility Form. The Renewable Energy Resources Eligibility Form includes the Standard Application Form and all required Appendices and attachments. I acknowledge that the Generation Unit is obligated to and will notify the Commission promptly in the event of a change in a generator's eligibility status (including, without limitation, the status of the air permits) and that when and if, in the Commission's opinion, after due consideration, there is a material change in the characteristics of a Generation Unit or its fuel stream that could alter its eligibility, such Generation Unit must be re-certified in accordance with Section 9.0 of the RES Regulations. I further acknowledge that the Generation Unit is obligated to and will file such quarterly or other reports as required by the Regulations and the Commission in its certification order. I understand that the Generation Unit will be immediately de-certified if it fails to file such reports.

Signature of Authorized Representative:

SIGNATURE: DATE:

Jim Malandrino 11/17/08

president

(Title)

GIS Certification #:
1512
NON32106

APPENDIX F
Eligible Biomass Fuel Source Plan
(Required of all Applicants Proposing to Use An Eligible Biomass Fuel)

STATE OF RHODE ISLAND PUBLIC UTILITIES COMMISION
Part of Application for Certificate of Eligibility
RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM
Pursuant to the Renewable Energy Act
Section 39-26-1 et. sq. of the General Laws of Rhode Island

Note to Applicants: Please refer to the RES Certification Filing Methodology Guide posted on the Commission's web site (www.ripuc.org/utilityinfo/res.html) for information, templates and suggestions regarding the types and levels of detail appropriate for responses to specific application items requested below. Also, please see Section 6.9 of the RES Regulations for additional details on specific requirements.

The phrase "Eligible Biomass Fuel" (per RES Regulations Section 3.6) means fuel sources including brush, stumps, lumber ends and trimmings, wood pallets, bark, wood chips, shavings, slash, yard trimmings, site clearing waste, wood packaging, and other clean wood that is not mixed with other unsorted solid wastes[5]; agricultural waste, food and vegetative material; energy crops; landfill methane[6] or biogas[7], provided that such gas is collected and conveyed directly to the Generation Unit without use of facilities used as common carriers of natural gas; or neat bio-diesel and other neat liquid fuels that are derived from such fuel sources.

In determining if an Eligible Biomass Generation Unit shall be certified, the Commission will consider if the fuel source plan can reasonably be expected to ensure that only Eligible Biomass Fuels will be used, and in the case of co-firing ensure that only that proportion of generation attributable to an Eligible Biomass Fuel be eligible. Certification will not be granted to those Generation Units with fuel source plans the Commission deems inadequate for these purposes.

This Appendix must be attached to the front of Applicant's Fuel Source Plan required for Generating Units proposing to use an Eligible Biomass Fuel (per Section 6.9 of RES Regulations).

---

[5] Generation Units using wood sources other than those listed above may make application, as part of the required fuel source plan described in Section 6.9 of the RES Regulations, for the Commission to approve a particular wood source as "clean wood." The burden will be on the applicant to demonstrate that the wood source is at least as clean as those listed in the legislation. Wood sources containing resins, glues, laminates, paints, preservatives, or other treatments that would combust or off-gas, or mixed with any other material that would burn, melt, or create other residue aside from wood ash, will not be approved as clean wood.

[6] Landfill gas, which is an Eligible Biomass Fuel, means only that gas recovered from inside a landfill and resulting from the natural decomposition of waste, and that would otherwise be vented or flared as part of the landfill's normal operation if not used as a fuel source.

[7] Gas resulting from the anaerobic digestion of sewage or manure is considered to be a type of biogas, and therefore an Eligible Biomass Fuel that has been fully separated from the waste stream.

F.1 The attached Fuel Source Plan includes a detailed description of the type of Eligible Biomass Fuel to be used at the Generation Unit.

Detailed description attached? Yes (No) N/A

Comments: Methane is recovered from the landfill by a series of vertical and horizontal wells, to a suction blower, which is directly connected to the engine generator sets.

F.2 If the proposed fuel is "other clean wood," the Fuel Source Plan should include any further substantiation to demonstrate why the fuel source should be considered as clean as those clean wood sources listed in the legislation.

Further substantiation attached? Yes No (N/A)

Comments: _____

_____

F.3 In the case of co-firing with ineligible fuels, the Fuel Source Plan must include a description of (a) how such co-firing will occur; (b) how the relative amounts of Eligible Biomass Fuel and ineligible fuel will be measured; and (c) how the eligible portion of generation output will be calculated. Such calculations shall be based on the energy content of all of the proposed fuels used.

Description attached? Yes No (N/A)

Comments: _____

_____

F.4 The Fuel Source Plan must provide a description of what measures will be taken to ensure that only the Eligible Biomass Fuel are used, examples of which may include: standard operating protocols or procedures that will be implemented at the Generation Unit, contracts with fuel suppliers, testing or sampling regimes.

Description provided? Yes No (N/A)

Comments: _____

_____

F.5 Please include in the Fuel Source Plan an acknowledgement that the fuels stored at or brought to the Generation Unit will only be either Eligible Biomass Fuels or fossil fuels used for co-firing and that Biomass Fuels not deemed eligible will not be allowed at the premises of the certified Generation Unit. And please check the following box to certify that this statement is true.

☑ ← check this box to certify that the above statement is true

N/A or other (please explain) _____

_____

F.6 If the proposed fuel includes recycled wood waste, please submit documentation that such fuel meets the definition of Eligible Biomass Fuel and also meets material separation, storage, or handling standards acceptable to the Commission and furthermore consistent with the RES Regulations.

Documentation attached? Yes No (N/A)
Comments: _____

F.7 Please certify that you will file all reports and other information necessary to enable the Commission to verify the on-going eligibility of the renewable energy generators pursuant to Section 6.3 of the RES Regulations.

☑ ← check this box to certify that the above statement is true
N/A or other (please explain) _____

F.8 Please attach a copy of the Generation Unit's Valid Air Permit or equivalent authorization.

Valid Air Permit or equivalent attached? 4 total (Yes) No N/A
Comments: 12/08/2000 initial 4 engines 1/17/2000 modification
4/30/2003 engines 5,6,7
6/23/2006 engine 8

F.9 Effective date of Valid Air Permit or equivalent authorization:

12/08/2000 4/30/2003
1/17/2000 6/23/2006

F.10 State or jurisdiction issuing Valid Air Permit or equivalent authorization: Massachusetts

CONSENT IN LIEU OF

SPECIAL MEETING OF BOARD OF DIRECTORS

October 22, 2008

Pursuant to Article II, Section 12 of the by-laws of INDUSTRIAL POWER SERVICES, CORPORATION, the undersigned Director of this corporation, first certifying that the undersigned constitutes the sole Director of said corporation, does hereby vote for, consent to, approves and agrees to take the actions set forth in the one or more following VOTES, all as if the same were taken at a meeting duly called for the purpose on the date first above written.

The Director of Industrial Power Services, Corporation is:

James M. Malandrinos

Upon motion duly made and seconded, it was unanimously

VOTED: That the President of this corporation be and he hereby is authorized and empowered for and on behalf of the corporation and in its corporate name to execute the Renewable Energy Resources Eligibility Form prepared by the State of Rhode Island or such other ancillary documents as may be necessary to effectuate aforesaid document, and also to take such further acts in and with respect to such application as the President may determine, in his discretion, to be appropriate.

The clerk shall file this consent with the minutes of the meetings of the Board of Directors and is hereby authorized to certify that this consent constitutes a vote taken at a meeting on the date first above written.

Witness my hand and seal:

James M. Malandrinos, Director

CERTIFICATE OF VOTE

I, Jill A. Crosby, of 1391 Main Street, Springfield, Massachusetts, certify that I am the duly elected and incumbent Clerk of INDUSTRIAL POWER SERVICES, CORPORATION, a corporation duly organized and existing under Massachusetts law; and that the following is a true extract record of the action by unanimous consent of the Board of Directors of said corporation on October 22, 2008:

Upon motion duly made and seconded, it was unanimously

VOTED: That the President of this corporation be and he hereby is authorized and empowered for and on behalf of the corporation and in its corporate name to execute the Renewable Energy Resources Eligibility Form prepared by the State of Rhode Island or such other ancillary documents as may be necessary to effectuate aforesaid document, and also to take such further acts in and with respect to such application as the President may determine, in his discretion, to be appropriate.

I further certify that the above vote now remains in full force and effect; that James M. Malandrinos is the incumbent President, Treasurer and sole Director of this corporation; that the following is the genuine signature of James M. Malandrinos; that the official seal of this corporation has been affixed above the signature of the duly elected and acting Clerk of this corporation.

James M. Malandrinos

Attest:

Jill A. Crosby, Clerk

Dated: October 22, 2008

COMMONWEALTH OF MASSACHUSETTS
OFFICE OF CONSUMER AFFAIRS
AND BUSINESS REGULATION
DIVISION OF ENERGY RESOURCES
70 FRANKLIN STREET, 7TH FLOOR
BOSTON, MA 02110-1313
Internet: http://www.state.ma.us/doer
E-mail: energy@state.ma.us

Jane Swift
Governor

Jennifer Davis Carey
Director of Consumer Affairs

David L. O'Connor
Commissioner

TELEPHONE
(617) 727-4732

FACSIMILE
(617) 727-0030
(617) 727-0093

James M. Malandrinos, President
Industrial Power Services Corporation
PO Box 840
Ware, MA 01082

RE: RPS Eligibility Decision
Granby LFG [LG-1006-2]

June 18, 2000

Dear Mr. Malandrios,

On behalf of the Division of Energy Resources (the Division), I am pleased to inform you that Granby LFG's Application for Statement of Qualification pursuant to the Massachusetts Renewable Energy Portfolio Standard (RPS) Regulations, 22 CMR 14.00, is hereby approved. The Division finds that the Generation Unit meets the requirements for eligibility as a New Renewable Generation Unit pursuant to 225 CMR 14.05.

Each Massachusetts New Renewable Generation Unit is assigned a unique Massachusetts RPS Identification Number (MA RPS ID#). The MA RPS ID # stated on the Statement of Qualification must be included in all correspondence with the Division. Granby LFG's MA RPS ID# is: LG-1006-02.

The Division wishes to remind you of the notification requirements for changes in eligibility status contained in 225 CMR 14.06(3). The Owner or Operator of the Generation Unit shall submit notification of such changes to the Division no later than five days following the end of the month during which such changes were implemented.

Sincerely,

Robert Sydney
General Counsel

Encl.(1): Statement of Qualification

COMMONWEALTH OF MASSACHUSETTS
OFFICE OF CONSUMER AFFAIRS AND BUSINESS REGULATION
DIVISION OF ENERGY RESOURCES

Statement of Qualification

Pursuant to the Renewable Energy Portfolio Standard
225 CMR 14.00

This Statement of Qualification, provided by the Massachusetts Division of Energy Resources, signifies that the Generation Unit identified below meets the requirements for eligibility as a New Renewable Generation Unit, pursuant to the Renewable Energy Portfolio Standard 225 CMR 14.05, as of the approval date of the Application for Statement of Qualification, this 18th day of June 2002.

Authorized Representative's Name and Address:	James M. Malandrinos, President Industrial Power Services Corp. PO Box 840 Ware, MA 01082 Phone: 413.967.7415
Name of Generation Unit:	Granby LFG

ISO-NE Generation Unit Asset Identification Number or NE-GIS Identification Number:

1 5 7 2

This New Renewable Generation Unit is assigned a unique Massachusetts RPS Identification Number. Please include this MA RPS ID # on all future correspondence with the Division.

MA RPS ID #: LG-1006-02

Pursuant to 225 CMR 14.06, the Owner or Operator of the New Renewable Generation Unit is responsible for notifying the Division of any change in eligibility status, and the Division may suspend or revoke this Statement of Qualification if the Owner or Operator of a New Renewable Generation Unit fails to comply with 225 CMR 14.00.

Robert F. Sydney Date: June 18, 2002

Robert F. Sydney
General Counsel
Division of Energy Resources

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE

ARGEO PAUL CELLUCCI
Governor

JANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

LAUREN A. LISS
Commissioner

DEC 18 2000

James Malandrinos, President
Industrial Power Services Corporation
P.O. Box 150, East Street Rear
Ware, MA 01082

Re: PVAPCD – Granby
Regulation 310 CMR 7.02
Application No. 1-B-00-027
Transmittal No. 105796
Granby Landfill Gas-to-Energy Facility

CONDITIONAL APPROVAL

Dear Mr. Malandrinos:

The Department of Environmental Protection, Bureau of Waste Prevention, Western Regional Office ("the Department") on August 2, 2000 received a Non-Major Comprehensive Plan Application ("NMCPA") from Industrial Power Services Corporation ("IPSC"). The NMCPA is submitted for the proposed installation and operation of four (4) engine/generators at the Granby Sanitary Landfill ("GSL") located on New Ludlow Road, Granby, MA. The GSL is operated by Holyoke Sanitary Landfill, Inc.; however, the engine/generators will be owned and operated by IPSC. The NMCPA was prepared by SCS Engineers and bears the seal and signature of Peter F. Kuniholm, Massachusetts Registered Professional Engineer No. 23046. An approved, stamped copy of the NMCPA will be forwarded.

INTRODUCTION

Landfill gas ("LFG") is currently collected by an existing system of extraction wells, lateral and header pipes, vacuum blowers, and ancillary equipment. The collected gas is consumed in an enclosed flare which was approved by the Department on May 13, 1997. IPSC is proposing to install and operate four new Caterpillar Internal Combustion Engines, each rated at 415 kW of output with heat input ratings of 5.05 MMBtu/hr. The units will be fired by the LFG only; there is no back up fuel. The engines are designed to destroy methane and non-methane organic compounds in the LFG. Each unit will consume about nine million cubic feet of LFG per month. The gross heating value of the LFG is approximately 500 Btu per cubic foot.

Each engine will be shipped and housed in a metal container. All four engines will be operated simultaneously and will produce electrical power for transfer to the grid. Each will be served by a new exhaust stack which will stand 18 feet above ground level, ten feet above the roof of the container, with an inside exit diameter of six inches. The flare will be maintained at the site for back up to the engines. It will not run when the engines are in operation.

Please be advised that all conditions, provisions and emission limits stated in the Department's Conditional Approval of the enclosed flare, dated May 13, 1997 and the Amended Conditional Approval, dated March 2, 2000 remain in effect when the LFG is diverted from the engines to the flare.

DESCRIPTION

Each unit is a spark-ignited, internal combustion engine, lean burn, turbo charged, and suitable for low-pressure LFG. Each engine will be housed in an eight-foot by 40-foot shipping container. Each container will include the engine-generator, radiator, after-cooler radiator, muffler and ancillary equipment. There will be two other containers at the site. One will be an eight-foot by 40-foot unit which will house the switch-gear and controls. The other will be a ten-foot by 50-foot container which will house a control room, office and room for storage. Also, each engine will be equipped with a silencer for sound attenuation located on the stack. A LFG pre-conditioning system will do the following:

- Remove moisture and dissolved contaminants from the LFG.
- Remove particulate matter that is entrained in the LFG.

BEST AVAILABLE CONTROL TECHNOLOGY

The BACT determination concerns options for controlling NOx and CO emissions from the engines. IPSC looked into several control options for NOx. IPSC has determined and the Department agrees that lean burn combustion with automatic A/F ratio control is BACT for control of NOx emissions. *See note below.*

IPSC looked at lean burn combustion and catalytic oxidation for control of CO. They discovered that no engine or catalyst vendors are willing to supply oxidation catalysts for combusting LFG. IPSC has determined and the Department agrees that lean burn combustion is BACT for control of CO emissions.

Note:
On August 31, 1996 the Department issued a policy (**96.001**) that is applicable to LFG-to-energy projects using internal combustion engines with NOx emissions less than 50 tons per year. For those projects with an output capacity of 1.7 megawatts or less, the NOx emission limit is 1.2 grams per brake horsepower-hour. The output capacity of the four engines is 1.66 megawatts and NOx emissions will be no more than 1.2 grams per brake horsepower-hour as guaranteed by the engine manufacturer.

EMISSION LIMITS

The following are the proposed emission limits for the operation of the four engine/generators:

TABLE 1

POLLUTANT	EMISSION LIMITS*		
	lbs./hr	Tons/month	Tons/year**
Nitrogen Oxides	6.0	2.2	26.3
Carbon Monoxide	12.0	4.4	52.5
Total Particulate	3.4	1.3	15.1
Sulfur Dioxide	0.84	0.31	3.7
NMOC	0.4***	0.14	1.67

*Total for all four engines
**Compliance based on a rolling twelve-month total
***Based on destruction efficiency of 98%

APPROVAL PROVISIONS

It is the opinion of the Department that the proposed gas-to-energy project is consistent with modern air pollution control technology and Best Available Control Technology. The Department hereby grants Conditional Approval for this project pursuant to Regulation 310 CMR 7.02(2)(a) of the "Regulations for the Control of Air Pollution in the Pioneer Valley Air Pollution Control District", as contained in 310 CMR 7.00, subject to the following provisions:

1. IPSC shall notify the Department when the engines are installed and ready for field inspection.

2. IPSC shall ensure that each engine reduce NMOC emissions by 98% by weight, or reduce stack NMOC emissions to 20 parts per million as hexane by volume, dry basis, at three percent oxygen, or less.

3. IPSC shall ensure that visible emissions from each engine not exceed 0% opacity (no visible emissions), with exception of up to five minutes during startup. During startup visible emissions shall comply with the provisions of 310 CMR 7.06.

4. IPSC shall perform emission compliance testing on the four engines within 90 days of startup to determine compliance with the emission limits listed in Table 1. The testing will include, at a minimum, NOx, CO, NMOC and SO2, particulate and opacity and shall be conducted in accordance with test methods and procedures contained on 40 CFR Part 60, Appendix A. A stack test protocol shall be submitted to the Department at least 30 days prior to testing. The final emission test report shall be submitted to the Department within 30 days from the completion of the field tests.

5. IPSC shall perform sound level emission tests at the facility property line to ensure that sound impacts from the operation of the four engines not exceed 10 dB (A) above background and not cause a puretone condition as defined in the Department's DAQC Policy No. 90-001. A test protocol shall be submitted to the Department at least 30 days prior to the tests. The tests shall be performed within 90 days of startup. The results of the tests shall be reported to the Department within 30 days of test completion.

6. IPSC shall ensure that emissions from the engines do not exceed the limits listed in **Table 1** above at any time.

7. IPSC shall take appropriate measures including shut down to abate any nuisance condition(s) generated by the operation of these engines.

8. IPSC shall notify the Department by telephone or fax within 24 hours of any upsets or malfunctions of the facility which results in excess emissions and/or a condition of air pollution.

9. IPSC shall record the volume of LFG fired in each engine for each month and for each twelve-month rolling period.

10. IPSC shall maintain all LFG usage, equipment malfunctions and emission data records on site for a period of five years from the time at which these records were generated. All records shall be maintained up-to-date such that the year-to-date information is readily available for Department examination.

11. IPSC shall provide Department personnel immediate access to the site for the purpose of making inspections, obtaining data and reviewing records during normal working hours.

12. IPSC shall construct and operate the new engines in strict accordance with the NMCPA approved herein. Should there be any differences between this Conditional Approval and the NMCPA, this Conditional Approval shall govern.

13. IPSC shall keep a copy of the Standard Operating and Maintenance Procedures for the engines on site at all times.

14. IPSC shall ensure that the four engines operate in compliance with all applicable air quality regulations.

This **Conditional Approval** pertains only to the **air quality control** aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other state, local, or federal laws and regulations.

The Department directs your attention to 40 CFR 60, Subpart WWW – "Standards of Performance for Municipal Solid Waste Landfills" and all requirements thereunder, for which the Department has not accepted delegation of authority. There are certain notification, record keeping and reporting, monitoring and testing requirements you may be subject to. Questions regarding this matter should be directed to U. S. EPA – New England, Region 1, One Congress Street, Suite 1100 (CAP), Boston, MA 02114.

The Department has determined that the filing of an Environmental Notification Form ("ENF") with the Secretary of Environmental Affairs, for air quality purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act, and Regulation 301 CMR 11.00, section 11.03, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or Environmental Impact Report at a later time.

This **Conditional Approval** is an action of the Department. There are limited rights of appeal. For a description of these rights, read the enclosure "APPEAL RIGHTS".

If you have any questions or comments regarding this **Conditional Approval**, please contact Robert Wineberg of the Western Regional Office at (413) 755-2234.

Very truly yours,

Craig Goff
Permit Chief
Bureau of Waste Prevention
Western Region

RJW/rjw

cc. David Howland, DRD, WERO
Yi Tian, DEP, One Winter Street, Boston, MA 01208
Robert Vachula, WERO

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

436 Dwight Street • Springfield, Massachusetts 01103 • (413) 784-1100

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

ELLEN ROY HERZFELDER
Secretary

LAUREN A. LISS
Commissioner

January 17, 2002

James Malandrinos, President
Industrial Power Services Corporation
P.O. Box 840, East Street Rear
Ware, MA 01082

Re: PVAPCD – Granby
Regulation 310 CMR 7.02(4)
Limited Plan Application
Application No. 1-B-02-031
Transmittal No. W031595
Granby Landfill Gas-to-Energy Facility
Revised (2) Table 1 (Emission Limits)

FINAL APPROVAL (AMENDED)

Dear Mr. Malandrinos:

The Department of Environmental Protection, Bureau of Waste Prevention, Western Regional Office ("the Department") approved on December 8, 2000 a landfill gas-to-energy facility consisting of four (4) engine/generators at the Granby Sanitary Landfill located on New Ludlow Road in Granby, Massachusetts. The engine/generators are owned and operated by Industrial Power Services Corporation of Ware, Massachusetts.

Compliance stack testing was performed on April 9 -12, 2002. As a result of these tests, Industrial Power Services Corporation proposes in this Limited Plan Application to revise upward the permit emission limitations for SO_2 and CO, and to restate the non-methane hydrocarbon (NMHC) emissions in the alternate units allowed in the permit.

Industrial Power Services Corporation proposes to increase the SO_2 limit to account for the elevated landfill gas sulfur content, since all the sulfur contained in the landfill gas is emitted after combustion in the engines, and any control equipment to clean up the landfill gas before combustion, or the clean the engine exhaust after combustion would be cost prohibitive in this application.

Industrial Power Services Corporation also proposes to allow an increased CO limit from these engines, since they were able to tune for low NO_x emissions by allowing the CO to increase slightly.

Emissions of NO_x and CO from these engines are governed by the Department's December 8, 2000 CONDITIONAL APPROVAL and with Department Policy COM-96.001 ("the Policy") relating to the permitting of landfill gas-to-energy projects. The Policy specifies that landfill gas-to-energy projects with a maximum total project capacity of 1.7 megawatts (MW) or less (such as this project) not emit NO_x at a rate greater than 1.20 g/bhp-hr, be subject to a NO_x/CO optimization/minimization program with a target emission rate of 0.90 grams NO_x per brake horsepower-hour (g/bhp-hr), and that CO be minimized.

The tested NO_x emission rate on these engines ranged from 0.54 to 0.68 g/bhp-hr which is substantially less than the 0.90 g/bhp-hr target emission rate specified in the Policy. The tested CO emissions were slightly higher than the permit limit (12.89 lb/hr vs. 12.0 lb/hr), which was the consequence of tuning the engines for low NO_x operation. In the Department's opinion, this is an acceptable trade-off for reduced NO_x emissions.

Lastly, Industrial Power Services Corporation proposes to change the NMHC limit from 0.4 lb/hr (which was based on 98% destruction efficiency of the engine) to 0.97 lb/hr, which is equivalent to 20 ppm as hexane, corrected to 3% O_2. Both methods of computing a mass emission rate for NMHC were allowed for in provision 2 of the original **CONDITIONAL APPROVAL**.

Therefore, the Department hereby reissues Table 1 (Emission Limits) to read as follows:

TABLE 1 (revision 2 – 1/20/2002)

POLLUTANT	EMISSION LIMITS *		
	lb/hr	Tons/month	tons/year **
Nitrogen Oxides	4.65 ***	1.73	20.37
Carbon Monoxide	12.89	4.80	56.45
Total Particulate	3.46	1.29	15.14
Sulfur Dioxide	3.97	1.48	17.40
NMOC	0.97 ****	0.36	4.24

* Total for all four engines
** Compliance based on a rolling twelve-month total
*** Equivalent to ≈ 0.90 g NO_x/bhp-hr
**** Based on 20 ppm as hexane, corrected to 3% O_2.

Please be advised that all the other provisions of the original CONDITIONAL APPROVAL remain in full force except as specifically modified by this FINAL APPROVAL (AMENDED).

This **FINAL APPROVAL** pertains only to the **air quality control** aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other state, local, or federal laws and regulations.

The Department has determined that the filing of an Environmental Notification Form ("ENF") with the Secretary of Environmental Affairs, for air quality purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act, and Regulation 301 CMR 11.00, section 11.03, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or Environmental Impact Report at a later time.

This **FINAL APPROVAL (AMENDED)** is an action of the Department. There are limited rights of appeal. For a description of these rights, read the enclosure "**APPEAL RIGHTS**".

If you have any questions or comments regarding this **FINAL APPROVAL (AMENDED),** please contact John Kirzec of the Western Regional Office at (413) 755-2225.

Very truly yours,

John Kirzec
for Craig Goff
Permit Chief
Bureau of Waste Prevention
Western Region

JK/jk
granby landfill – mod (2) of CPA – lpa.doc

cc: Steve Ellis, WERO
Yi Tian, DEP, One Winter Street, Boston, MA 01208

Roberta Baker, WERO (electronic copy)

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

ELLEN ROY HERZFELDER
Secretary

EDWARD P. KUNCE
Acting Commissioner

James Malandrinos, President
Industrial Power Services Corporation
P.O. Box 150, East Street Rear
Ware, MA 01082

April 30, 2003

Re: PVAPCD – Granby
Regulation 310 CMR 7.02
Application No. 1-P-03-006
Transmittal No. 024185
Granby Landfill Gas-to-Energy Facility

CONDITIONAL APPROVAL

Dear Mr. Malandrinos:

The Department of Environmental Protection, Bureau of Waste Prevention, Western Regional Office ("the Department") on February 10, 2003 received a Non-Major Comprehensive Plan Application ("NMCPA") from Industrial Power Services Corporation ("IPSC"). The NMCPA is submitted for the proposed installation and operation of three (3) engine/generators and a candlestick flare at the Granby Sanitary Landfill ("GSL") located on New Ludlow Road, Granby, MA. The GSL is operated by Holyoke Sanitary Landfill, Inc.; however, the engine/generators and flare will be owned and operated by IPSC. The NMCPA was prepared by SCS Engineers and bears the seal and signature of Peter F. Kuniholm, Massachusetts Registered Professional Engineer No. 23046.

INTRODUCTION

Landfill gas ("LFG") is currently collected by an existing system of extraction wells, lateral and header pipes, vacuum blowers, and ancillary equipment. The collected gas is consumed by four existing engines approved by the Department on December 8, 2000 and an enclosed flare which was approved by the Department on May 13, 1997. IPSC is proposing to install and operate three new Caterpillar Internal Combustion Engines, each rated at 415 kW of output with heat input ratings of 5.05 MMBtu/hr and a candlestick flare rated at 300 standard cubic feet per minute (scfm). The units will be fired by the LFG only; there is no back up fuel. The engines and flare are designed to destroy methane and non-methane organic compounds in the LFG. Each engine will consume about nine million cubic feet of LFG per month. The gross heating value of the LFG is approximately 500 Btu per cubic foot.

Each engine will be housed in a metal container, with up to two engines in each container. All three engines, along with the existing four engines, can be operated simultaneously if sufficient gas is present and will produce electrical power for transfer to the grid. Each will be served by a new exhaust stack which will stand 18 feet above ground level, ten feet above the roof of the container, with an inside exit diameter of eight inches. The existing enclosed flare and the candlestick flare will be maintained at the site for back up to the engines. The candlestick flare will be utilized when less than 300 scfm is available to the flares for consumption. Below 300 scfm, the enclosed flare does not have sufficient energy input to operate properly, therefore the candlestick flare will be utilized. Above 300 scfm of LFG to the flares will place the enclosed flare in operation and shut down the candlestick flare.

APPROVAL PROVISIONS

It is the opinion of the Department that the proposed gas-to-energy project is consistent with modern air pollution control technology and Best Available Control Technology. The Department hereby grants Conditional Approval for this project pursuant to Regulation 310 CMR 7.02 subject to the following provisions:

1. IPSC shall notify the Department in writing when the engines and flare have been installed and ready for operation.

2. IPSC shall ensure that each engine and flare reduce NMOC emissions by 98% by weight, or reduce stack NMOC emissions to 20 parts per million as hexane by volume, dry basis, at three percent oxygen, or less.

3. IPSC shall ensure that the engines and flare comply with their respective emission limits listed in Table 1 and Table 2 above.

4. IPSC shall ensure that visible emissions from each engine and flare not exceed 0% opacity (no visible emissions), with exception of up to five minutes during startup. During startup visible emissions shall comply with the provisions of 310 CMR 7.06.

5. IPSC shall apply modern air pollution control technology with respect to noise. In no case shall the operation of the IPSC facility result in an exceedance of the Department's noise guidelines of:

   a. an increase in the broadband sound level by more than 10 dB(A) above ambient ; or

   b. production of a "puretone".

   These guidelines are contained in DAQC Policy 90-001. In addition, in no case shall the operation of the IPSC facility result in a condition of "Noise" as required by Regulation 310 CMR 7.10.

6. IPSC shall employ a NOx/CO optimization/minimization program on each engine within 180 days after startup. IPSC shall submit to the Department a report detailing the results of this program no later than 30 days following completion.

7. IPSC shall monitor the LFG Facility for the fuel flow in scfm and total standard cubic feet to all engines and flare combined.

8. IPSC shall establish and maintain a record keeping system on site for the following:

   a. A record of routine maintenance activities performed on each engine including a description of the maintenance performed and the date the work was completed;

   b. A record of all malfunctions for each engine including the date and time of the malfunction, the type of malfunction and the date and time corrective actions were completed; and

   c. All records shall be kept on site for a period of five years and be made available to Department personnel upon request.

9. IPSC shall take immediate steps, including shutdown of the engines, to abate any nuisance condition generated by the operation of the engines.

10. The open flare shall be operated only on a supplemental basis to the landfill gas to energy facility and the enclosed flare and not as the primary landfill gas control system.

DESCRIPTION

Each unit is a spark-ignited, internal combustion engine, lean burn, turbo charged, and suitable for low-pressure LFG. Each engine will be housed in an eight-foot by 40-foot shipping container. Each container will include the engine-generator, radiator, after-cooler radiator, muffler and ancillary equipment. There will be two other containers at the site. One will be an eight-foot by 40-foot unit which will house the switch-gear and controls. The other will be a ten-foot by 50-foot container which will house a control room, office and room for storage. Also, each engine will be equipped with a silencer for sound attenuation located on the stack. A LFG pre-conditioning system will do the following:

- Remove moisture and dissolved contaminants from the LFG.
- Remove particulate matter that is entrained in the LFG.

BEST AVAILABLE CONTROL TECHNOLOGY

The BACT determination concerns options for controlling NOx and CO emissions from the engines. IPSC looked into several control options for NOx. IPSC has determined and the Department agrees that lean burn combustion with automatic A/F ratio control is BACT for control of NOx emissions. *See note below.*

IPSC looked at lean burn combustion and catalytic oxidation for control of CO. They discovered that no engine or catalyst vendors are willing to supply oxidation catalysts for combusting LFG. IPSC has determined and the Department agrees that lean burn combustion is BACT for control of CO emissions.

Note:
On August 31, 1996 the Department issued a policy (**96.001**) that is applicable to LFG-to-energy projects using internal combustion engines with NOx emissions less than 50 tons per year. For those projects with an output capacity of 1.7 megawatts or more, the NOx emission limit is 0.6 grams per brake horsepower-hour. The output capacity of the seven engines is 2.9 megawatts and NOx emissions will be no more than 0.6 grams per brake horsepower-hour as guaranteed by the engine manufacturer.

EMISSION LIMITS

The following are the proposed emission limits for the operation of the three engine/generators:

TABLE 1

POLLUTANT	EMISSION LIMITS*		
		lbs./hr	Tons/year**
Nitrogen Oxides	0.6 g/bhp-hr	0.77	3.39
Carbon Monoxide	2.5 g/bhp-hr	3.22	14.11
Total Particulate	48 lb/MM dscf CH_4	0.86	3.78
Sulfur Dioxide	500 ppm	0.99	4.35
NMOC	15 ppm	0.24***	1.06

*Limit for each engine
**Compliance based on a rolling twelve-month total
***Based on emission rate of 20 ppm NMOC (equivalent to 20 ppmv as hexane at 3% O_2.

The open flare shall not exceed the following emission limits:

TABLE 2

POLLUTANT	Emissions limits	
	lbs/MMBtu	tons/yr
Nitrogen oxides (NO_x)	0.06	2.37
Carbon monoxide (CO)	0.15	5.91
Non-methane organic compounds (NMOC)	-	7.31
Sulfur dioxide (SO_2)	-	6.52

Note: ton/year means tons per consecutive 12 month period.

IPSC shall not exceed 99 tons per consecutive 12 month period of CO from all seven generators and the candlestick flare combined.

EMISSIONS TESTING

11. IPSC shall construct the engines to accommodate the emission testing requirements contained in 40 CFR Part 60 Appendix A.

12. IPSC shall conduct compliance emission testing in accordance with the methods and procedures contained in 310 CMR 7.13, 40 CFR Part 60 Subpart WWW Section 60.754, and 40 CFR 60 Appendix A.

13. IPSC shall submit a stack test protocol to the Department at least 30 days prior to commencing compliance testing.

14. IPSC shall conduct emission testing on each engine to determine compliance with, at a minimum, the emission limits contained in Table 1 herein no later than 180 days after initial startup.

15. IPSC shall submit the test report for any emissions testing to the Department within 45 days of completion of the emissions testing.

NOISE TESTING PROVISIONS

16. Within 60 days after start up of the new units, IPSC shall submit, for Department review and written approval, a test protocol for documenting noise levels with the LFG facility in operation. Unless otherwise specified by the Department, the test protocol shall (minimally) meet the following criteria:

    a. Sound Compliance Measurements shall be for the A-weighted L_{90}, and octave band sound pressure levels shall be measured over at least a 15-minute time period at each location under similar or identical conditions (meteorological conditions and background noise conditions). More than one 15-minute time period may be required by the Department;

    b. Sound Compliance Measurements shall be taken during periods when the facility is in operation. When feasible, Sound Compliance Measurements shall be conducted at times when the influence of extraneous background sounds is minimal;

    c. Sound Compliance Measurements shall be made as close as possible to any nearby receptors; and

    Sound measurements shall be conducted by a qualified noise specialist using noise monitoring equipment complying with the requirements of ANSI S1.4.

Standard Provisions

17. IPSC shall notify the Department by telephone or fax within 24 hours of any upsets or malfunctions of the facility which results in excess emissions and/or a condition of air pollution.

18. IPSC shall submit Final Standard Operating and Maintenance Procedures for the engines within 45 days of completion of the stack testing referenced in Provisions No. 11 -15 above.

19. IPSC shall provide Department personnel immediate access to the site, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

20. IPSC is notified that this Conditional Approval may be suspended, modified, or revoked by the Department if, at any time, the Department determines that any condition, provision or part of this Conditional Approval is being violated.

21. IPSC must notify the Department's Compliance/Enforcement Chief for the Bureau of Waste Prevention by telephone or fax, within 24 hours, and with written notification within 10 days, after the occurrence of any upsets or malfunctions of the engines or any appurtenant equipment which result in excess emission to the ambient air and/or a condition of air pollution.

22. IPSC shall operate the engines and the flare in compliance with all applicable air quality control regulations at all times. IPSC shall maintain all LFG usage, equipment malfunctions and emission data records on site for a period of five years from the time at which these records were generated. All records shall be maintained up-to-date such that the year-to-date information is readily available for Department examination.

23. IPSC shall keep a copy of the Standard Operating and Maintenance Procedures for the engines on site at all times.

This **Conditional Approval** pertains only to the **air quality control** aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other state, local, or federal laws and regulations.

The Department directs your attention to 40 CFR 60, Subpart WWW – "Standards of Performance for Municipal Solid Waste Landfills" and all requirements thereunder, for which the Department has not accepted delegation of authority. There are certain notification, record keeping and reporting, monitoring and testing requirements you may be subject to. Questions regarding this matter should be directed to U. S. EPA – New England, Region 1, One Congress Street, Suite 1100 (CAP), Boston, MA 02114.

The Department has determined that the filing of an Environmental Notification Form ("ENF") with the Secretary of Environmental Affairs, for air quality purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act, and Regulation 301 CMR 11.00, section 11.03, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or Environmental Impact Report at a later time.

This **Conditional Approval** is an action of the Department. There are limited rights of appeal. For a description of these rights, read the enclosure "APPEAL RIGHTS".

If you have any questions or comments regarding this **Conditional Approval**, please contact Marc Simpson of the Western Regional Office at (413) 755-2115.

Very truly yours,

Craig Goff
Permit Chief
Bureau of Waste Prevention
Western Region

ec. Yi Tian, DEP, Boston
Roberta Baker, Peter Czapienski, WERO

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE
436 Dwight Street • Springfield, Massachusetts 01103 • (413) 784-1100 • FAX (413) 784-1149

MITT ROMNEY
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Lieutenant Governor

STEPHEN R. PRITCHARD
Secretary

ROBERT W. GOLLEDGE, Jr.
Commissioner

June 23, 2006

James Malandrinos, President
Industrial Power Services Corporation
P.O. Box 150, 60 East Street River
Ware, MA 01082

Re: PVAPCD – Granby
Regulation 310 CMR 7.02
Application No. 1-P-06-020
Transmittal No. W069863
Granby Landfill Gas-to-Energy Facility

CONDITIONAL APPROVAL

Dear Mr. Malandrinos:

The Department of Environmental Protection ("MassDep"), Bureau of Waste Prevention, has completed its review of the referenced application for the proposed installation and operation of an engine/generator at the Granby Sanitary Landfill ("GSL") located on New Ludlow Road, Granby, MA. The application, a Non-major Comprehensive Plan Application (NMCPA), was submitted on March 27, 2006. This engine/generator will be the eighth one to be installed at the site along with a candlestick flare. The GSL is operated by Holyoke Sanitary Landfill, Inc.; however, the engine/generators and flare will be owned and operated by Industrial Power Services Corporation (IPSC). The NMCPA was prepared by SCS Engineers and bears the seal and signature of Peter F. Kuniholm, Massachusetts Registered Professional Engineer No. 23046.

INTRODUCTION

Landfill gas ("LFG") is currently collected by an existing system of extraction wells, lateral and header pipes, vacuum blowers, and ancillary equipment. The collected gas is consumed by four existing engines approved by the Department on December 8, 2000, three existing engines and a candlestick flare approved by the Department on April 30, 2003 and an enclosed flare which was approved by the Department on May 13, 1997. IPSC is proposing to install and operate one new Caterpillar Internal Combustion Engines, rated at 415 kW of output with heat input ratings of 5.05 MMBtu/hr. The unit will be fired by the LFG only; there is no back up fuel.

The engines and flare are designed to destroy methane and non-methane organic compounds in the LFG. The engine will consume about nine million cubic feet of LFG per month. The gross heating value of the LFG is approximately 500 Btu per cubic foot.

All eight engines can be operated simultaneously if sufficient gas is present and will produce electrical power for transfer to the grid. The proposed engine will be served by a new exhaust stack which will stand 18 feet above ground level, ten feet above the roof of the container, with an inside exit diameter of eight inches. The existing enclosed flare and the candlestick flare will be maintained at the site for back up to the engines. The candlestick flare will be utilized when less than 300 scfm is available to the flares for consumption. Below 300 scfm, the enclosed flare does not have sufficient energy input to operate properly, therefore the candlestick flare will be utilized. Above 300 scfm of LFG to the flares will place the enclosed flare in operation and shut down the candlestick flare.

DESCRIPTION

The engine is a spark-ignited, internal combustion engine, lean burn, turbo charged, and suitable for low-pressure LFG. The engine will be housed in one of the four eight-foot by 40-foot shipping containers which are capable of housing two generators in each. Each container will include the engine-generator, radiator, after-cooler radiator, muffler and ancillary equipment. There will be two other containers at the site. One will be an eight-foot by 40-foot unit which will house the switch-gear and controls. The other will be a ten-foot by 50-foot container which will house a control room, office and room for storage. Also, each engine will be equipped with a silencer for sound attenuation located on the stack. A LFG pre-conditioning system will do the following:

- Remove moisture and dissolved contaminants from the LFG.
- Remove particulate matter that is entrained in the LFG.

BEST AVAILABLE CONTROL TECHNOLOGY

The BACT determination concerns options for controlling NOx and CO emissions from the engines. IPSC looked into several control options for NOx. IPSC has determined and the Department agrees that lean burn combustion with automatic Air/Fuel ratio control is BACT for control of NOx emissions. *See note below.*

IPSC looked at lean burn combustion and catalytic oxidation for control of CO. They discovered that no engine or catalyst vendors are willing to supply oxidation catalysts for combusting LFG. IPSC has determined and the Department agrees that lean burn combustion is BACT for control of CO emissions.

Note:
On August 31, 1996 the Department issued a policy (**96.001**) that is applicable to LFG-to-energy projects using internal combustion engines with NOx emissions less than 50 tons per year. For those projects with an output capacity of 1.7 megawatts or more, the NOx emission limit is 0.6 grams per brake horsepower-hour. The output capacity of the eight engines is 3.3 megawatts and NOx emissions will be no more than 0.6 grams per brake horsepower-hour as guaranteed by the engine manufacturer.

EMISSION LIMITS

The following are the proposed emission limits for the operation of the proposed engine/generator:

TABLE 1

POLLUTANT	EMISSION LIMITS*		
		lbs./hr	Tons/year**
Nitrogen Oxides	0.6 g/bhp-hr	0.77	3.39
Carbon Monoxide	2.5 g/bhp-hr	3.22	14.11
Total Particulate	48 lb/MM dscf CH_4	0.86	3.78
Sulfur Dioxide	500 ppm	0.99	4.35
NMOC	15 ppm	0.24***	1.06

*Limit for each engine
**Compliance based on a rolling twelve-month total
***Based on emission rate of 20 ppm NMOC (equivalent to 20 ppmv as hexane at 3% O_2).

APPROVAL PROVISIONS

It is the opinion of the Department that the proposed gas-to-energy project is consistent with modern air pollution control technology and Best Available Control Technology. The Department hereby grants Conditional Approval for this project pursuant to Regulation 310 CMR 7.02 subject to the following provisions:

1. IPSC shall notify the Department in writing when the engines and flare have been installed and ready for operation.

2. IPSC shall ensure that each engine and flare reduce NMOC emissions by 98% by weight, or reduce stack NMOC emissions to 20 parts per million as hexane by volume, dry basis, at three percent oxygen, or less.

3. IPSC shall ensure that the proposed engine complies with the emission limits listed in Table 1 above.

4. IPSC shall ensure that visible emissions from the engine do not exceed 0% opacity (no visible emissions), with exception of up to five minutes during startup. During startup visible emissions shall comply with the provisions of 310 CMR 7.06.

5. IPSC shall apply modern air pollution control technology with respect to noise. In no case shall the operation of the IPSC facility result in an exceedance of the Department's noise guidelines of:

   a. an increase in the broadband sound level by more than 10 dB(A) above ambient ; or

   b. production of a "puretone".

   These guidelines are contained in DAQC Policy 90-001. In addition, in no case shall the operation of the IPSC facility result in a condition of "Noise" as required by Regulation 310 CMR 7.10.

6. IPSC shall employ a NOx/CO optimization/minimization program on the engine within 180 days after startup. IPSC shall submit to the Department a report detailing the results of this program no later than 30 days following completion.

7. IPSC shall monitor the LFG Facility for the fuel flow in scfm and total standard cubic feet to all engines and flare combined.

8. IPSC shall establish and maintain a record keeping system on site for the following:

   a. A record of routine maintenance activities performed on the engine including a description of the maintenance performed and the date the work was completed;

   b. A record of all malfunctions for the engine including the date and time of the malfunction, the type of malfunction and the date and time corrective actions were completed; and

   c. All records shall be kept on site for a period of five years and be made available to Department personnel upon request.

9. IPSC shall take immediate steps, including shutdown of the engine, to abate any nuisance condition generated by the operation of the engine.

EMISSIONS TESTING

10. IPSC shall construct the engine to accommodate the emission testing requirements contained in 40 CFR Part 60 Appendix A.

11. IPSC shall conduct compliance emission testing in accordance with the methods and procedures contained in 310 CMR 7.13, 40 CFR Part 60 Subpart WWW Section 60.754, and 40 CFR 60 Appendix A.

12. IPSC shall submit a stack test protocol to the Department at least 30 days prior to commencing compliance testing.

13. IPSC shall conduct emission testing on the engine to determine compliance with, at a minimum, the emission limits contained in Table 1 herein no later than 180 days after initial startup.

14. IPSC shall submit the test report for any emissions testing to the Department within 45 days of completion of the emissions testing.

NOISE TESTING PROVISIONS

15. Within 60 days after start up of the new units, IPSC shall submit, for Department review and written approval, a test protocol for documenting noise levels with the LFG facility in operation. Unless otherwise specified by the Department, the test protocol shall (minimally) meet the following criteria:

a. Sound Compliance Measurements shall be for the A-weighted L_{90}, and octave band sound pressure levels shall be measured over at least a 15-minute time period at each location under similar or identical conditions (meteorological conditions and background noise conditions). More than one 15-minute time period may be required by the Department;

b. Sound Compliance Measurements shall be taken during periods when the facility is in operation. When feasible, Sound Compliance Measurements shall be conducted at times when the influence of extraneous background sounds is minimal;

c. Sound Compliance Measurements shall be made as close as possible to any nearby receptors; and

Sound measurements shall be conducted by a qualified noise specialist using noise monitoring equipment complying with the requirements of ANSI S1.4.

STANDARD PROVISIONS

16. IPSC shall notify the Department by telephone or fax within 24 hours of any upsets or malfunctions of the facility which results in excess emissions and/or a condition of air pollution.

17. IPSC shall submit Final Standard Operating and Maintenance Procedures for the engine within 45 days of completion of the stack testing referenced in Provisions No. 10 -14 above.

18. IPSC shall provide Department personnel immediate access to the site, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

19. IPSC is notified that this Conditional Approval may be suspended, modified, or revoked by the Department if, at any time, the Department determines that any condition, provision or part of this Conditional Approval is being violated.

20. IPSC must notify the Department's Compliance/Enforcement Chief for the Bureau of Waste Prevention by telephone or fax, within 24 hours, and with written notification within 10 days, after the occurrence of any upsets or malfunctions of the engines or any appurtenant equipment which result in excess emission to the ambient air and/or a condition of air pollution.

21. IPSC shall operate the engines and the flare in compliance with all applicable air quality control regulations at all times. IPSC shall maintain all LFG usage, equipment malfunctions and emission data records on site for a period of five years from the time at which these records were generated. All records shall be maintained up-to-date such that the year-to-date information is readily available for Department examination.

22. IPSC shall keep a copy of the Standard Operating and Maintenance Procedures for the engines on site at all times.

The IPSC LFG facility, following the installation and operation of the proposed equipment in this Approval, will be a major source of CO (≥ 100 tons per year) emissions. Be advised that pursuant to Regulation 310 CMR 7.00 Appendix C(4)(a)6, you are required to submit an operating permit application no later than one (1) year after commencement of operation of the portion of the facility which made the facility subject to Appendix C, which in this case is the eighth engine at the facility.

This approval pertains only to the air quality control aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other applicable state, local, or federal laws and regulations.

The Department has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Environmental Affairs, for air quality control purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and Regulation 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report at a later time.

This Approval is an action of the Department. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date you received this plan approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request, and the relief sought. Additionally, the request must state why the plan approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, Massachusetts 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

The Department may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

If you have any questions or comments regarding this Approval, please contact Marc Simpson at (413) 755-2115.

Very truly yours,

Craig Goff
Permit Chief
Bureau of Waste Prevention
Western Region

ec. Yi Tian, DEP, Boston
Roberta Baker, Peter Czapienski, WERO