



**CONSERVATION ALLIANCE
of St. Lucie County, Inc.**
P. O. Box 12515
Fort Pierce, Florida 34979-2515



"Pledged to protect the water, soil, air, native flora and fauna, upon which all the earth's creatures depend for survival."

RECEIVED

JUN 10 2010

**BUREAU OF
AIR REGULATION**

Mr. Alvaro Linero
Florida Dept. of Environmental Protection
2600 Blair Stone Road, MS #5505
Tallahassee, Florida, 32399-2400

Re: Geoplasma-St. Lucie, LLC WTE Facility

Dear Mr. Linero

I am writing to inform you that the Conservation Alliance of St. Lucie Co. is 100% behind the construction of a Geoplasma Plant in our County. Imagine if you can, that the hundreds of millions of tons of garbage that are buried in ugly landfills around the country are loaded with energy that could be extracted and used to create renewable energy. Plasma gasification of municipal solid waste can do that. A process that would be instead of burying it in a landfill and releasing greenhouse gases and mercury into the atmosphere. According to scientists at Oak Ridge National Laboratory, landfills represent the only identified source of anthropogenic methyl mercury to the atmosphere. That is the most toxic form of mercury.

In its December issue, the globally recognized science publication, "Scientific American" named Plasma Gasification of garbage as an idea that can change the world. As also noted in the article is a statement that the U.S. Environmental Protection Agency has estimated that if all the municipal solid waste in the U.S. were processed with Plasma Plants to make electricity we could produce the equivalent amount of electricity from 25 nuclear plants or the equivalent of all the hydropower produced in the United States.

Yes, we wholeheartedly express our support for this operation in S t. Lucie County.

Very truly yours,
Bob Bangert,
Director of the Conservation Alliance of SLC.





City of Port St. Lucie
"A City for All Ages"



June 8, 2010

City Council

Patricia P. Christensen
Mayor

Jack Kelly
Vice Mayor
District 4

Linda Bartz
District 1

Michelle Lee Berger
District 2

Christopher S. Cooper
District 3

Linero Alvaro P.E.
Program Administrator
Florida Department of Environmental Protection
2600 Blairstone Drive
mail stop 5505
Tallahassee, FL 32399-240

Dear Mr. Alvaro:

This letter is in response to the Notice of Intent to Issue the air construction permit for the St. Lucie County plasma arc gasification project to be constructed by Geoplasma-St. Lucie LLC. The City of Ft. Pierce supports this project.

St. Lucie County staff held several public meetings on this project. The meetings included many public workshops. The project impacts were presented to environmental groups, as well as the environmental advisory board to the Board of County Commissioners. The meetings provided the attendees with factual information about the plasma arc gasification process.

The environmental benefits of the project are enormous. County solid waste staff researched the technologies that could help end the negative impacts of landfilling solid waste. As I recall, when solid waste staff began researching technologies for solid waste management they set the criteria for any technology to be considered. The criteria were:

1. Proven
2. Observable in a commercial setting
3. Economically viable
4. the most environmentally friendly technology in the world

To confirm the research compiled during the information gathering process, County staff traveled to Utashinai, Japan to see (kick the tires if you will) a plasma arc gasification plant in commercial operation. The visit confirmed the research.

The economic benefits of this project would be enormous in this economic environment that we find ourselves in at this time.

Thank you for your consideration.

Sincerely,

Patricia P. Christensen
Mayor



City of Port St. Lucie
"A City for All Ages"



City Council

June 8, 2010

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Program Administrator
Florida Department of Environmental Protection
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Tallahassee, FL 32399-240

RECEIVED
JUN 14 2010
BUREAU OF
AIR REGULATION

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Thank you for your consideration.

Sincerely,

Patricia P. Christensen
Mayor

BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

PO BOX 88 Glendale Springs, North Carolina 28629 (336) 982-2691

www.bredl.org

RECEIVED

June 11, 2010

JUN 14 2010

Florida Department of Environmental Protection
Division of Air Resource Management,
Bureau of Air Regulation
2600 Blair Stone Road, MS #5505
Tallahassee, Florida 32399-2400

**BUREAU OF
AIR REGULATION**

**Re: DEP File No. 1110138-001-AC Geoplasma St. Lucie Plasma Gasification
Project Draft Permit To Construct**

Dear Sirs:

On behalf of the Blue Ridge Environmental Defense League, I write to provide comments on the draft air pollution construction permit for the St. Lucie Geoplasma Gasification Project. The Blue Ridge Environmental Defense League is a regional environmental organization working with communities across the southeast to prevent pollution and protect public health. Our interest in the St. Lucie Geoplasma proposal involves both the emissions impacts to the local community and the loss of resources resulting from incineration.

As noted in the Department's public notice, St. Lucie represents the first large scale municipal solid waste plasma arc gasification facility in the United States. The maximum daily capacity is 686 tons composed of 601 tons of municipal solid waste, 59 tons of tires with steel belts and 26 tons of coke used in the plasma arc process. While not large compared with current operational incinerators, the proposed St. Lucie incinerator is still much larger than any existing plasma arc facility in the world. For that reason alone regulators should use precaution when issuing permits.

This draft permit is based on the federal requirements under New Source performance Standards, 40 Code of Federal Regulations, Part 60, Subpart Eb-Standards of performance for Large Municipal Waste Combustors under Section 129 of the Clean Air Act. This regulation applies to any facility burning more than 250 tons of municipal solid waste per day.

Recommendations:

We recommend that the Department clarify how the permitting category was determined, amend the waste types under "Authorized Wastes", include the process for adopting a new waste separation plan with public participation, reduce the allowable excess emissions from malfunctions and provide additional opportunity for the public to comment.

Permitting:

The St. Lucie Geoplasma incinerator is being permitted under EPA rules for Large Municipal Waste Combustors. This was an apparent result of consultations between Geoplasma, the Department and the EPA. As a result, DEP has not required the applicant to demonstrate case-by-case maximum achievable control technology (MACT). Given the unique nature of the plasma arc process and the broad range of the permitted waste stream, it appears that a MACT determination is appropriate and the question remains as to how this decision was reached and if it provides the most effective level of protection.

Permitted Wastes and Waste Separation Plans:

Part 60, Subpart Eb under the 60.51b Definitions section includes the following:

Municipal solid waste or municipal-type solid waste or MSW means household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by nonmanufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities.

Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).

Household, commercial/retail, and institutional wastes include:

(1) Yard waste;

(2) Refuse-derived fuel; and

(3) Motor vehicle maintenance materials limited to vehicle batteries and tires except as specified in §60.50b(g).

The Authorized Wastes in the draft permit reference the 60.51b definition, but then goes on to add these types of permitted wastes:

a. Confidential, proprietary or special documents (including but not limited to business records, lottery tickets, event tickets, coupons and microfilm);

b. Contraband which is being destroyed at the request of appropriately authorized local, state or federal governmental agencies, provided that such material is not an explosive, a propellant, a hazardous waste, or otherwise prohibited at the facility. For the purposes of this section, contraband includes but is not limited to drugs, narcotics, fruits, vegetables, plants, counterfeit money, and counterfeit consumer goods;

- c. **Wood pallets, clean wood, and land clearing debris;**
- d. **Packaging materials and containers;**
- e. **Clothing, natural and synthetic fibers, fabric remnants, and similar debris, including but not limited to aprons and gloves; or**
- f. **Rugs, carpets, and floor coverings, but not asbestos-containing materials or polyethylene or polyurethane vinyl floor coverings.**

And goes on to include, with some limitations, an even broader waste stream:

“Subject to the conditions and limitations contained in this permit, the following other solid waste materials may be used as fuel at the facility (i.e. the following are authorized fuels that are non-MSW material). The total quantity of the following non-MSW material received as segregated loads and gasified at the facility shall not exceed 5%, by weight, of the facility’s total fuel. Compliance with this limitation shall be determined on a calendar month basis in accordance with Specific Condition 14 of this subsection.”

g. Construction and demolition debris;

- h. **Oil spill debris from aquatic, coastal, estuarine or river environments, with such items or materials including but are not limited to rags, wipes, and absorbents;**
- i. **Items suitable for human, plant or domesticated animal use, consumption or application where the item’s shelf-life has expired or the generator wishes to remove the items from the market, with such items or materials to include but are not limited to off-specification or expired consumer products, pharmaceuticals, medications, health and personal care products, cosmetics, foodstuffs, nutritional supplements, returned goods, and controlled substances; or**
- j. **Consumer-packaged products intended for human or domesticated animal use or application but not consumption, with such items or materials to include but are not limited to carpet cleaners, household or bathroom cleaners, polishes, waxes and detergents;**
- k. **Waste materials that: (i) are generated in the manufacture of items in categories i. or j., and are functionally or commercially useless (expired, rejected or spent); or (ii) are not yet formed or packaged for commercial distribution. Such items or materials must be substantially similar to other items or materials routinely found in MSW.**
- l. **Waste materials that contain oil from: (i) the routine cleanup of industrial or commercial establishments and machinery; or (ii) spills of virgin or used petroleum products. Such items or materials include but are not limited to rags, wipes, and absorbents.**
- m. **Used oil and used oil filters. Used oil containing a polychlorinated biphenyls (PCB) concentration equal or greater than 50 ppm shall not be burned, pursuant to the limitations of 40 CFR 761.20(e); or**
- n. **Waste materials generated by manufacturing, industrial or agricultural activities, provided that these items or materials are substantially similar to items or materials that are found routinely in MSW.**

[Rules 62-4.070(1) and 62-4.070(3) F.A.C., and 40 CFR 60.51b.]

Under Prohibited Wastes the draft lists the following:

Prohibited Fuels: The facility shall not gasify:

- a. **Those materials that are prohibited by state or federal law;**
- b. **Those materials that are prohibited by this permit;**
- c. **Lead acid batteries;**
- d. **Hazardous waste;**
- e. **Nuclear waste;**

- f. Radioactive waste;
- g. Sewage sludge;
- h. Explosives; and
- i. Beryllium containing waste, as defined in 40 CFR 61, Subpart C.

and wastes that should not *knowingly* be burned include:

“Further, the facility shall not knowingly burn:

- j. Nickel-cadmium batteries pursuant to Section 403.7192 (3);
- k. Mercury containing devices and lamps pursuant to Sections 403.7186(2), and (3);
- l. Untreated biomedical waste from biomedical waste generators regulated pursuant to Chapter 64E-16, F.A.C., and from similar generators (or sources);
- m. Segregated loads of biological waste; and
- n. CCA treated wood.”

While the amount of non-MSW materials permitted is small (5%), the permit does not require adequate waste screening to prevent incineration of materials either excluded under 60.51b or listed as excluded in this permit. In addition, the items listed that cannot *knowingly* be burned represent a loophole. It is difficult to imagine how “segregated loads of biological waste” could be overlooked. The waste types list under “Authorized Feedstocks” should be amended to conform to the definition in 60.51b.

The draft permit includes this reference a materials separations plan:

Waste Operating Plan: Thirty days prior to operation of the Geoplasma facility, the permittee must submit an updated solid waste operating plan to the SED waste program. [Rule 62-4.070(3) F.A.C.]

If the existing recycling operations at the St. Lucie County Sanitary Landfill are altered by Geoplasma’s operations, a new or amended plan should be included with this permit. There is no reference to a public notice in the draft permit. As defined in 60.51b:

Materials separation plan means a plan that identifies both a goal and an approach to separate certain components of municipal solid waste for a given service area in order to make the separated materials available for recycling. A materials separation plan may include elements such as dropoff facilities, buy-back or deposit-return incentives, curbside pickup programs, or centralized mechanical separation systems. A materials separation plan may include different goals or approaches for different subareas in the service area, and may include no materials separation activities for certain subareas or, if warranted, an entire service area.

§ 60.57b Siting requirements.

(a) The owner or operator of an affected facility shall prepare a materials separation plan, as defined in §60.51b, for the affected facility and its service area, and shall comply with the requirements specified in paragraphs (a)(1) through (a)(10) of this section. The initial application is defined as representing a good faith submittal as determined by EPA.

However, the Permit Application references the materials separation plan in Section 4.2.2:

“Operator training standards must be adhered to in accordance with 40 CFR 60.54b and a materials separation plan must be developed in accordance with 40 CFR 60.57b.”

Development of a waste separation plan should be included as a permit condition.

On a related note, the projected “byproduct” of the plasma arc process is 57,900 tons of vitrified material for use as aggregate. Under Florida statutes, burning waste to produce electricity and sand counts as “recycling”. As the permit application notes on page 21, “However, any solid waste used for the production of renewable energy shall count toward the long term recycling goal as set forth in Florida Statute 403.7032.”

Emissions:

As noted previously, the applicable federal regulation which the State of Florida stipulates for operation of the facility is 40 CFR Part 60 Subpart Eb, which is the standard of performance for municipal waste combustor steam generating units (Sections 60.50b through 60.59b). Plasma arc gasifiers and multi-stage thermal oxidizers utilized in the St. Lucie incinerator are subject to the New Source Performance Standards under 40 CFR 60. With this standard in place, the annual air pollution as determined by Florida DEP is listed in Table 1.¹

Table 1. Annual Air Pollution from St. Lucie Geoplasma

Pollutant	Pounds per year
Carbon monoxide	92,600
Nitrogen oxides	100,000
Particulates	76,000
PM-10	75,200
Sulfur dioxide	35,200
Volatile organic compounds	68,200
Hydrochloric acid	37,800
Lead	700
Mercury	10.2
Total	410,510

Similar to most incinerators, the St. Lucie Geoplasma facility will have a bypass stack which will be used during emergencies; that is, in case of a failure of the thermal oxidizers or a sudden increase in synthetic gas production.

The draft permit allows emissions in “unavoidable” malfunction events:

12. Excess Emissions: Except as required by specific conditions of this permit dealing with excess emissions with regard to individual emission units, the following conditions apply to excess emissions at the Geoplasma facility.

a. Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any

24 hour period unless specifically authorized by the Department for longer duration. A malfunction means any unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner.

The excess emissions permit condition allowing up to two hours of uncontrolled emissions is too flexible. Recently promulgated rules for medical waste incinerators will consider all bypass events as permit violations.

Pollution from mass burn incinerators and starved air gasification units differ by the amount of pollution emitted, not by the type. In other words, both emit the same pollutants into the atmosphere, but in different amounts. The levels of oxygen and nitrogen in the combustion process affect the levels of some air pollutants. For example, EPA data show that gasification units emit more nitrogen oxides and dioxins than conventional incinerators, and equal amounts of mercury. Emissions of some pollutants are largely unchanged; in both types of combustion heavy metals are atomized and released into the atmosphere in elemental form. Dioxin emissions from gasification units are 83% higher than mass burn incinerators.ⁱⁱ

The abbreviated (14 days) opportunity to provide comments and the apparent lack of any public hearing is a serious barrier to public participation. Additional outreach by the Department on a project of this significance is in order and we urge you to keep the draft permit open for additional comments.

Sincerely,


David Mickey
Blue Ridge Environmental Defense League

ⁱ Technical Evaluation and Preliminary Determination, Section 3.4 Gasification Process Description, Page 13, St. Lucie Plasma Gasification Project, Florida DEP File No. 1110138-001-AC, May 25, 2010

ⁱⁱ US Environmental Protection Agency, Compilation of Air Pollutant Emission Factors, Volume 1, Fifth Edition, AP-42



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Vero Beach, Florida 32963
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JUN 08 2010

BUREAU OF
AIR REGULATION

June 7, 2010

Mr. Alvaro Linero
Program Administrator
Florida Department of Environmental Protection
Bob Martinez Center
2600 Blainstone Road
Tallahassee, FL 32399-2400

Subject: Florida Department of Environmental Protection
(FDEP) File No. 1110138-001AC
St. Lucie Plasma Gasification Project

Dear Mr. Linero:

I am writing in support of the Notice of Intent to Issue the air construction permit for the St. Lucie County plasma arc gasification project. I personally visited and observed the plasma arc gasification facility in Utashinai, Japan with St. Lucie County staff and have conducted research into this and other solid waste technologies. The proposed plasma arc gasification facility is a great advancement from conventional landfilling and waste incineration practices currently implemented in Florida. The environmental benefits of this project are well documented in the permit as compared to other industrial facilities. Waste gasification is a proven technology and a valuable process in our Country's development of renewable energy alternatives.

Thank you for the opportunity to comment on the merits of the proposed facility. If you should have any questions or comments, please contact me.

Very truly yours,

Eric J. Grotke, P.E., BCEE
Principal
Camp Dresser & McKee Inc.

File: 6277-58836

cc: Ron Roberts, SLC



G3 Clean Energy
Renewable Energy Consultants

June 4, 2010

RECEIVED

JUN 08 2010

**BUREAU OF
AIR REGULATION**

Mr. Alvaro Linero
Florida Department of Environmental Protection
Division of Air Resource Management, Bureau of Air Regulation.
2600 Blair Stone Road, MS #5505,
Tallahassee, Florida 32399-2400.

Subject: Geoplasma-St. Lucie, LLC WTE Facility

Dear Mr. Linero,

I am writing to you today to offer my support for the granting of the air permit for the Geoplasma-St. Lucie, LLC WTE project.

My professional career in the power industry spans over 22 years, with the last several years focused on high efficiency and renewable technologies. I was formerly a senior executive with Westinghouse Plasma Corporation, departing the company to form my own renewable energy consulting business.

President Obama has spoken on numerous occasions regarding the need for the United States to develop more renewable energy sources. Although not mentioned as often as wind and solar, gasification of waste and biomass must play a part in our renewable energy revolution.

Gasification of waste offers 2 strong benefits; first, a source of base load renewable energy – as unlike wind and solar, a gasification plant will operate 24 hours/day, seven days per week and second, a reduction in greenhouse gas emissions. Gasification of waste reduces greenhouse gas emissions by eliminating the free methane emissions from landfill, and offsetting the need for power production from fossil fuels.

Gasification of waste has been proven successfully by several manufacturers, including the Westinghouse Plasma Corporation, the core technology supplier for the Geoplasma-St. Lucie Project. Opponents to the project will point to a small group of failed plants, ignoring in their presentation, the numerous WTE facilities operating responsibly worldwide.

First hand, I have watched the safe and environmentally responsible operation of Westinghouse Plasma gasifiers for both commercial and research application. 2 WTE plants in Japan, using Westinghouse Plasma technology, have been operating for over 7 years in accordance with the Japanese standards.

The state of Florida can help lead the United States forward in the growth of renewable energy technologies by granting the air permit for the Geoplasma St. Lucie project.

Very Truly Yours,

Thomas J. Gdaniec

Thomas J. Gdaniec
201 Woodcrest Ct
Harrison City, Pa. 15636

**BOARD OF
COUNTY
COMMISSIONERS**



CHARLES GRANDE
COMMISSIONER

June 2, 2010

Mr. Linero Alvaro, Program Administrator
State of Florida
Florida Department of Environmental Protection
2600 Blainstone Drive
M.S. # 5505
Tallahassee, FL 32399

RECEIVED
JUN 07 2010
**BUREAU OF
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Dear Mr. Alvaro,

I am writing in response to the Notice of Intent to issue the air construction permit for the St. Lucie County plasma arc gasification project to be constructed by Geoplasma-St. Lucie LLC.

County staff has conducted numerous public meetings on the project. The meetings included environmental groups, builders associations, homeowners associations, environmental advisory board, public workshops, condominium associations, and school children. All of the meetings ended with overwhelming support for the project.

County staff has researched the possible technologies that could help alleviate the negative impacts of the current solid waste processing techniques. When the due diligence period began Solid Waste staff set the criteria for any technology to be considered. The criteria were:

- * Proven
- * Observable in a commercial setting
- * Economically viable
- * Environmental beneficial

To verify the 7000 pages of research compiled during the due diligence phase, County staff, including the Chairman of the Board of County Commission at the time, and consulting engineers, traveled to Japan to observe a plasma gasification plant in commercial operation processing MSW. After three years of research, and visiting the facility in Japan, staff concluded that plasma arc gasification met all of the criteria.

The economic and environmental benefits would be incalculable for St. Lucie County.

The County fully supports this project and thank you in advance for your consideration in this matter.

Sincerely,

Charles Grande, Chairman
St. Lucie County Commission

RR/CG

cc: Board of County Commission
County Attorney
County Administrator
Solid Waste