

#002001

From Jim Kanish
11/6/01
144

- Primary industrial particulate emissions are estimated to be about 60 to 70 percent $PM_{2.5}$ (particulate matter less than 2.5 microns).
- The forms of mercury emitted from industrial sources such as coal-fired utility boilers and cement kilns are not fully understood and remain controversial. The methods of measuring the forms of mercury have improved, and it is becoming increasingly clear that reactive gas mercury (RGM) releases from industrial sources are more important than previously believed. Existing US Environmental Protection Agency (USEPA) and Florida Department of Environmental Protection (FDEP) regulations are currently deficient in not requiring mercury species to be measured when mercury monitoring is required for compliance purposes.

Select Recommendations:

- The County's emission inventory estimates should be refined by direct measurements and other methods that supplement the approaches used in preparing the inventory for this report.
- Because electric power plants are currently the largest permitted emission source in the region, it would be helpful to know how emissions can be most efficiently reduced over the lifetime of the equipment now in place. Factors that need to be taken into account include process, plant age, fuel source, emissions, advances in pollution reduction techniques and kilowatts produced. This is especially important in regard to the relative contributions of the full range of energy conservation measures that could be implemented in the industrial, commercial and residential sectors. Alachua County, according to GRU, has the lowest per capita residential energy consumption in Florida. The County should continue to be a model by expanding its energy savings with new energy conservation efforts and corresponding pollution reductions.
- On-road vehicles are a significant source of air pollution, so reductions in vehicular emissions should be a priority for Alachua County. Traffic control measures (e.g., light timing, traffic circles) should be implemented to reduce emissions per mile traveled. The County should also evaluate growth management policies that reduce vehicle miles traveled. Additionally, the County should consider purchasing fuel-efficient and alternative-fuel vehicles, and sharing or otherwise reducing the total number of highly polluting vehicles such as sport utility vehicles (SUVs) and trucks.
- Reducing vehicular emissions will require a detailed analysis of traffic patterns, because some parameters such as interstate speed and volume cannot be directly changed. Such a study should concentrate on the optimum methods for achieving emission reductions.
- Alachua County should develop a mercury emission inventory and obtain information on speciation between reactive and elemental mercury emissions from current County mercury sources.

GAINESVILLE ENERGY ADVISORY COMMITTEE

Gainesville City Commission

June 19, 2001

RE: Air Pollution Control Alternatives for Deerhaven Unit 2

File Number: 990532

Honorable Mayor and Commissioners:

The Gainesville Energy Advisory Committee received a presentation on July 18, 2000 from GRU staff on the Evaluation of Air Pollution Control Alternatives for Deerhaven Unit 2. Consulting engineers Burns & McDonnell produced the report.

A motion was made and seconded after an extensive discussion. The motion was: *The Gainesville Energy Advisory Committee, having heard the summary of the Evaluation of Air Pollution Control Alternatives for Deerhaven Unit 2, supports the continual review of emissions levels and their control, with the idea of maintaining the high quality that has been already established in the past.*

Mercury Emissions

GEAC expressed the opinion that mercury emissions rates are poorly known for reactive mercury species because measurement techniques are only recently available. It is the GEAC's opinion that the state of air quality science has only recently developed to the point that measurements can be made to support decision making regarding major expenditures for mercury control process equipment.

Considering that GRU's current coal source has low total mercury levels, the GEAC suggested an economical approach to evaluate GRU mercury emissions.

Premises

1. Mercury emissions rates are poorly known for reactive mercury species because measurement techniques are only recently available.
2. Reactive mercury emissions (unlike elemental mercury emissions) can have local depositional effects and may therefore be of special concern especially in regard to deposition to local waters.
3. GRU's current coal source has low total mercury levels.

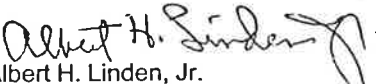
Proposal:

GRU should evaluate its potential reactive mercury deposition effects through the following measures:

1. Perform mercury sensitivity analyses. Run air pollution dispersion models, based on the assumption that all of the current mercury emissions are in the form of reactive mercury and that all coal-borne mercury is emitted in this form (an unlikely scenario, but the most conservative approach).
2. Evaluate local air deposition impacts under this "all reactive mercury" scenario at current operating conditions.
3. Estimate the coal-borne mercury levels required for threshold impacts under the "all reactive mercury" scenario and current operating conditions.

If no significant impacts are predicted, then re-evaluate only if the mercury levels in GRU coal increase above an identified threshold level. If impacts are predicted under the "all reactive mercury" scenario, then estimate the likely ratio of elemental to reactive mercury based on currently available measurements and project local air deposition impact based on the ratio of reactive mercury to total mercury.

Respectfully Submitted,


Albert H. Linden, Jr.
Gainesville Energy Advisory Committee Chair

CC: City Commissioners

W:\U0070\GEAC\DH AJr Emissions - CC letter.doc

City Commission

Meeting Minutes

June 25, 2001

GENERAL MANAGER FOR UTILITIES (continued from afternoon portion of the meeting)

990532 Deerhaven 2 Air Emission Control Study (B)

Gainesville Regional Utilities Assistant General Manager for Energy Delivery Darrell Dubose, Strategic Planning Director Ed Regan and Energy Advisory Committee Chair Al Linden gave presentations.

Chair Tom Bussing recognized Citizen Jim Konish and Dian Deevey who spoke to the matter.

RECOMMENDATION *The City Commission receive a report on a study of the costs and benefits of installing additional air emission control equipment on Deerhaven 2 prepared at the request of the Commission's Regional Utilities Committee.*

Heard

PINE BEETLE DISCUSSION - CITIZEN COMMENT (CONTINUED)

001493 Pine Beetle Issue (NB)

Chair of the Technical Advisory Committee for Pine Beetle Suppression, Dr. John Foltz, City of Gainesville Parks Manager Pat Byrne and City Arborist Meg Neiderhofer gave presentations.

Chair Tom Bussing recognized Kirkwood Environmental Improvement Association President Michael Resnick, Kirkwood Resident John Hudson and Citizen Mary Anderson who spoke to the matter.

Note: Mayor-Commissioner Pro Tem Pegeen Hanrahan left the meeting room at 8:45 PM and returned at 8:52 PM.

RECOMMENDATION *The City Commission ask the City Manager to work with his staff to in the near future, when there is moment, to step back to pull out the Pine Beetle Infestation Emergency Ordinance and procedures, review those, and come back to the City Commission with some recommendations on how we can make it better.*

A motion was made by Commissioner Barrow, seconded by Mayor-Commissioner Pro Tem Hanrahan, that this matter be Approved as Recommended. The motion carried by the following vote:

Votes: Aye: Chuck Chestnut, Warren Nielsen, John R. Barrow and Tom Bussing
Absent: Pegeen Hanrahan

PUBLIC HEARINGS

Review of GRU Deerhaven Plant Pollution Control Alternatives

Review of Burns & McDonnell Report

August 14, 2001

Alachua County Environmental Protection
Department

Objectives

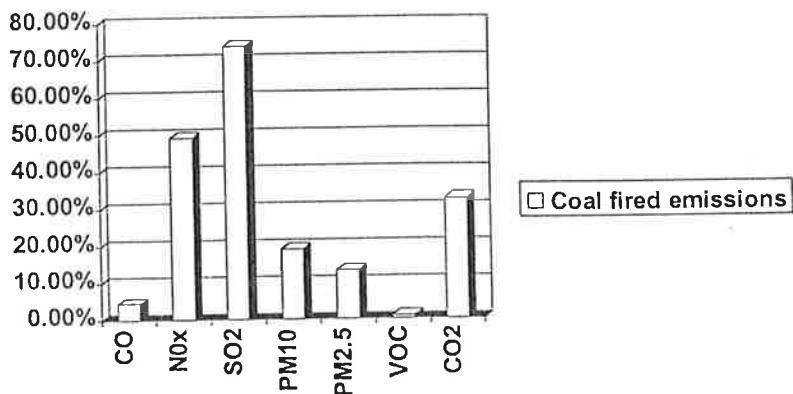
- Assignment by BOCC on July 24, 2001
- Overview of GRU Deerhaven emissions.
- Review GRU Report on Control Alternatives
- Recommendations for Future Consideration

Approach

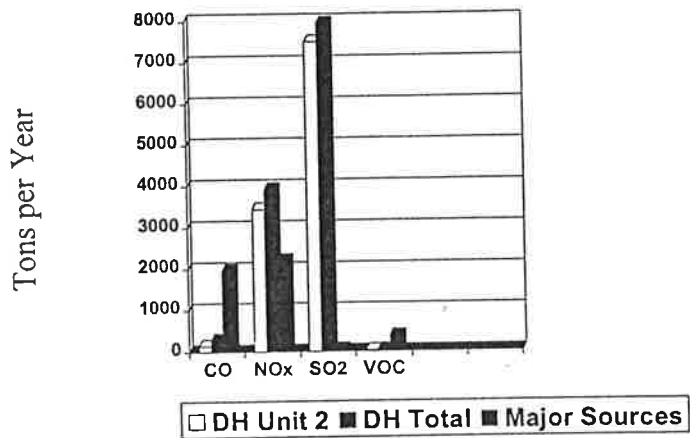
- Review GRU emissions data
- Review B&M report technologies and costs
- Review alternative technologies
- Identify other control issues

Pollutants From Coal Fired Stationary Combustion Sources

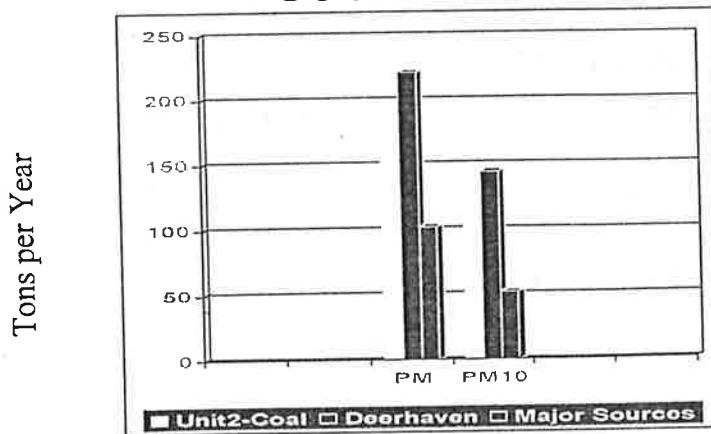
National Totals (1998)



GRU DEERHAVEN V/S MAJOR COUNTY STATIONARY SOURCES



GRU DEERHAVEN V/S MAJOR COUNTY STATIONARY SOURCES



Pollutants Evaluated by Report

- NO_x
- SO₂
- PM (PM10, PM2.5)
- Mercury (Hg)
- CO₂ (Greenhouse Gas)

NO_x Control Evaluated by GRU Report

- Gas Reburn and Overfire Air (OFA)
 - ✓ – Natural gas fuel
 - \$12 Million gas pipeline costs appears high
- Selective Catalytic Reduction (SCR)
 - ✓ – 85% removal efficiency appears low

NO_x Control Not Evaluated by GRU Report

- ✓ ● Selective Non-Catalytic Reduction (SNCR)

- ✓ ● Sorption--Adsorption and Absorption

SO₂ Control Evaluated By GRU Report

- Wet Flue Gas desulfurization using Limestone (LSFO)
- Semi-Dry Flue Gas desulfurization
 - Lime Spray Drying (LSD)
 - Fluidized bed dry scrubbing (CFB)

SO₂ Control

Not Evaluated By GRU Report

- ✓ ● Magnesium Enhanced Lime Process (MEL)
- ✓ ● Semi-Dry Flue Gas desulfurization
 - Duct Sorbent Injection (DSI)

Particulate Control

Evaluated by GRU Report

- Baghouse to supplement existing ESP
 - ✓ - Full emission reduction potential not examined
 - Possible backup for ESP failure

Particulate Control

Not Evaluated by GRU Report

- ✓ ● Specific PM 2.5 Control
 - Baghouse, Compact hybrid Particulate Collector, Advanced hybrid particulate collector, Electrostatically Stimulated Fabric Filter
- ✓ ● Existing ESP- Performance Improvement
 - Improve Charging Hardware
 - Improve Reliability

Mercury (Hg) Control

- Proposed Rules from EPA in 2004
- Concerns about Atmospheric Deposition
- ✓ ● Carbon Injection Technology--Not Fully Evaluated
- Carbon Injection/Spray Cooling/Baghouse -Not Considered

Greenhouse Gas Reductions

- Deerhaven a major source of CO₂ emissions
- CO₂ emission is major concern
- County Greenhouse Gas Reduction Plan
- CO₂ Control
- ✓ – Carbon sequestration- Not fully evaluated

Synergistic Controls

- ✓ ● Combined Technology that controls multiple pollutants-- Not Considered
 - Collateral control of non-targeted pollutant
 - Complementary control for multiple pollutants
 - Integrated systems for multiple pollutants

Cost Analysis

COST ANALYSIS					
Pollutant	Technology	Capital Cost \$/kW		Variable O&M Cost mills/kWh	
		GRU/B&M	EPD	GRU/B&M	EPD
NO _x	Gas Reburn	\$60.7a	\$32.4b	3.15a	Pipeline Cost-Not known
	SCR	\$65.7a	\$69.7-71.8b, 63.23d	0.78a	1.18-1.38b 0.55d
	SNCR	Not Considered	\$16.6-19b, 14.54d	Not Considered	0.85-0.92b, 0.32d
SO ₂	Wet Limestone (LFSO)	\$250a	\$195-542c \$269d	3.61a	3.6c-1.7d
	Semi-dry FGD (LSD)	\$226a	\$140-363c	3.33a	3.47c
	MEL	Not Considered	\$238-384c	Not Considered	3.87c
Particulates	Baghouse	\$53.2a	\$38d	0.53a	.98d

(a)-Year 2000\$
 (b)-Year 1997\$
 (c) Year 1998\$
 (d) Year 1995\$

Note: Some derivations based on 74% capacity factor, 236 MW.

Recommendations

- GRU should further evaluate additional controls
 - NO_x: SNCR, Costs of Gas Reburn
 - SO₂: MEL process
 - Particulates: PM2.5 Technologies
 - Mercury: Carbon injection /Spray cooling/Baghouse
 - Greenhouse Gas Reductions
 - Synergistic technologies

Recommendations

- GRU should consider performance improvement for existing ESP
- GRU/ City of Gainesville should join with Alachua County in the Cities for Climate Protection Campaign

Review of GRU Deerhaven Plant Pollution Control Alternatives

Review of Burns & McDonnell Report

August 14, 2001

Alachua County Environmental Protection
Department



Board of County Commissioners

ALACHUA COUNTY BOARD OF COUNTY COMMISSIONERS

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Commission

Dave Newport
Chair

Robert Hutchinson
Vice Chair

Mike Byerly

Rodney J. Long

Penelope Wheat

Administration

Randall H. Reid
County Manager

August 23, 2001

Mayor Tom Bussing
City of Gainesville
PO Box 490-19
Gainesville, FL 32602-490

Dear Mayor:

On August 14, 2001, the Alachua County Board of County Commissioners (BoCC) heard a presentation by the County's Environmental Protection staff regarding opportunities for reducing air emissions at the Deerhaven power plant. Staff's presentation included a review of the Deerhaven plant pollution control alternatives report prepared by GRU contractor Burns & McDonnell, Inc. The presentation was followed by staff recommendations and comments from GRU staff and concerned citizens.

Subsequently, the BoCC approved transmittal of the following recommended actions for consideration by the City Commission and GRU:

1. GRU should evaluate and implement performance improvements in the electrostatic precipitator (ESP) particulate control device at Deerhaven to reduce excess emissions during start-up and shut down operations;
2. GRU should further evaluate alternate control technologies for reduction of NOx, Mercury, SO2 and particulate emissions from the Deerhaven plant, considering not only capital investment and operational costs but also the costs of emissions in terms of their fiscal impacts on community health, the environment, and economic development impacts such as impacts on nature-based tourism and job recruiting;
3. The City of Gainesville should join Alachua County as a member of the Cities for Climate Protection, a local government initiative involving over one hundred cities and counties in the U.S. which have made voluntary commitments to reduce greenhouse gases (see website at http://www.iclei.org/us/US_ccp.html). The County is committing to a 20 percent reduction in its emission of greenhouse (GHG) gases by 2010. We hope that the City could commit to a similar goal;

An Equal Opportunity Employer M.F.V.D.



4. GRU should evaluate carbon sequestration mitigation strategies to reduce carbon dioxide (CO2) emissions as part of an overall City GHG reduction goal.

It is indisputable that every member of the City Commission is dedicated to improving the air quality and overall environment of Gainesville and Alachua County. We applaud your efforts. These measures are being suggested, after consultation with our professional staff, in an effort to assist the City's already exemplary environmental protection efforts. On behalf of the Board of County Commissioners, I look forward to continuing to work with the City of Gainesville and GRU to reduce emissions from the Deerhaven plant.

Sincerely,



Dave Newport,
Chair

DN/cb
chr01.089

- cc. Board of County Commissioners
Randall H. Reid, County Manager
Chris Bird, Director, Department of Environmental Protection
Mike Kurtz, General Manager, GRU
Laura Merker, Commission Services Coordinator

und the Region

HAVE A NEWS TIP?

■ Call 374-5093
Mon.-Fri. and 374-5085
on weekends.

A QUESTION ABOUT COVERAGE?

■ Call 374-5035
or 374-5040.

GOP'S BYR Leg Plai as n

The Associated Press

TALLAHASSEE — Rep. Johnnie Byrd of Plant City, who has the backing of party leaders here, first sought the nomination in 1996, but was unseated. He was re-elected Tuesday by fellow Republicans.



Byrd

House where the 77-43 advantage was a "Times like this" leaders... and one of those leaders is Jeb Bush, adding quiet, evenhandedly reminded him of a colon. "To be tenacious, it matters."

Byrd is the conservative Florida senator as speaker Daniel Webster in the state Senate, and Rep. Tom Feeney as the current speaker.

Feeney was elected as a Republican in 1996 when Byrd was defeated in a four-way race then captured the nomination in a run-



LEE FERINDEN/Special to The Sun

Giving something back

Sheriff Steve Oelrich and Russell Grinnell of Lake City watch new police dog Yokey at the Alachua County Sheriff's Office on Tuesday. Grinnell was the recipient of a liver from Oelrich's son Nick, 18, who died in an accident in 1995. Grinnell later donated nearly \$4,000 to buy Yokey. "In honor of Nick we wanted to give a little something back," Grinnell said. "This is a special day for us."

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her on a cell phone. Suddenly, "she looked up and here comes this deer right through the windshield," Oudman said.

The deer struck Stephens' chest, killing her. Walker was unhurt.

Walker's vehicle did not have any scratches or marks on the front end to indicate contact with the deer before it smashed through the windshield, Oudman said.

Pensacola customers to pay for plant work

■ PENSACOLA — Gulf Power Co. plans to charge customers an average of \$5 a month to

area's air the state's most polluted.

The utility, a subsidiary of Atlanta-based Southern Co., announced Monday that it will spend more than \$162 million on pollution controls at its coal-burning plant north of Pensacola.

The cost will be passed on to customers who pay some of the lowest rates in Florida, an average of \$64.85 monthly for residential use.

The improvements would remove half of the nitrogen oxides the plant discharges. They mix with sunlight and other pollutants to create ozone, or smog.

MORNING MEMO



Today's events

■ Community Redevelopment Agency Agenda Review, 10 a.m., city

hall.

■ Alachua County Tourist Development Council, 1:30 p.m., High Springs City Hall.

■ Alachua County Recreation and Open Space Advisory Committee, 5:30 p.m., County Administration Building.

■ Gainesville/Alachua County Cultural Affairs Board Community Relations Subcommittee, 5:30 p.m., Thomas Center.

■ Water Management Committee.

On August 29, 2001 the RUC heard a report from staff regarding the County Commission's air emission studies. Dr. John Mousa from the Alachua County Department of Pollution Control was recognized and spoke to the RUC. Dr. David Harlos, former Energy Advisory Committee member was recognized and spoke. Citizen Jim Konish was recognized and spoke to the Committee. The Committee asked staff to 1) evaluate performance improvements in the electrostatic precipitator (ESP) particulate control device at Deerhaven to reduce excess emissions during start-up and shut-down operations; 2) evaluate additional alternate control technologies for reduction of NOx, mercury, SO2 and particulate emissions from Deerhaven as suggested by the Alachua County Environmental Protection Department, considering not only capital investment and operational costs but also the costs of emissions in terms of their fiscal impact on community health, the environment and economic development impacts such as impacts on nature based tourism and job recruiting; 3) recommend staff review the Cities for Climate Protection Program with the Committee to determine whether the City should join; and 4) GRU continue to develop and improve conservation programs.



Legislative History

9/22/99	City Commission		Regional Utilities Committee
9/30/99	Regional Utilities Committee	Discussed	
3/21/00	Regional Utilities Committee	Discussed	
4/27/00	Regional Utilities Committee	Discussed	
7/11/00	Regional Utilities Committee	Discussed	
2/8/01	Regional Utilities Committee	Discussed	
6/25/01	City Commission	Heard	
7/18/01	Regional Utilities Committee	Discussed	
8/29/01	Regional Utilities Committee	Discussed	

9/29/01



001734

Reclaimed Water Rates and Charges

This item is being combined with a previous RUC referral titled "Water Re-Use" legislative file #990580.

Explanation: On August 27, 2001 the City Commission heard a presentation from staff and then referred to the Regional Utilities Committee the consideration of a GRU reuse program that would allow GRU to provide reclaimed water into existing and new neighborhoods and assess a monthly charge to reuse customers. On January 22, 2001, the City Commission allowed GRU to provide this service on a pilot basis. An ordinance change was necessary to allow GRU to implement pricing consistent with the Commission action.

On August 29, 2001 the Regional Utilities Committee heard a presentation from staff regarding the residential water reuse program. The Committee directed

David P. Harlos, Sc.D.

618 Northeast 9th Avenue
Gainesville, FL 32601
352 375 8797
d_harlos@bellsouth.net

Gainesville City Commission
Alachua County Commission
Gainesville Regional Utilities

06 November 2001

RE: Air Quality Concerns at Deerhaven Electrical Generating Station

Dear Gainesville Citizens:

The following remarks are in regard to the future measures that may be required to reduce emissions from Gainesville's primary electrical generating station at Deerhaven. A considerable number of recommendations have already been provided to the County through the considerable efforts of the Alachua County Air Quality Commission.

I suggest that these recommendations be carefully reviewed because GRU is a primary air pollution source in the County, and is the one source that is most directly controllable.

Since the report was issued I served briefly on the GRU energy advisory board and I have the following comments on several issues that were considered by the board.

GRU Fine Particulate and NOx Emission Controls

GRU recently commissioned a feasibility study of air pollution control alternatives. Others have critiqued this report and I understand that there has been some GRU response.

EPA studies of the directly linking deaths from fine coal and diesel particulate continue to be supported by new research and by challenge reviews of the original studies. These deaths are not among persons whom were previously sick but appear to be caused by as yet unknown links between air pollution and sudden cardiac deaths. The medical issues are complex and include findings of inhaled coal fine particulate inside of heart tissue of victims. Nevertheless, the health-based, fine particulate standard will probably impact Deerhaven, which is close to a rapidly section of the County.

GRU NOx emissions no doubt have a regional impact on ozone levels, which have been close to current regulatory limits (see Air Quality Commission Report). Elsewhere in Florida, the Southern Company has taken steps to reduce its NOx emissions by half at its Gulf Power Co. plant, in the more polluted Pensacola area. While GRU may not yet be required to take this measure, the combination of the fine particulate problem and moderate ozone levels may require action on both of these contaminants in the future.

I recommend that GRU continue its efforts to identify air pollution control alternatives that simultaneously reduce NOx and fine particulate as these concerns continue to loom large in the County's future.

Alternatives to Direct Pollution Control: Energy Conservation

The energy crisis in California demonstrated that energy conservation is still a powerful source of pollution reduction. Deferred power plant construction in California was in part blamed for this crisis. California was able to defer construction of plants for years partly because it leads the nation in energy conservation. This parallels California's lead in motor vehicle emission control. It escapes most people's notice that California has tougher car emission standards that have been blocked by the auto lobby in other parts of the country. Efforts in both of these areas have benefited California citizens and the environment for years.

California implemented additional economic conservation incentives at the time of the crisis, but *before* these went into effect, there was a 22% drop in demand through voluntary measures. This happened in a state where conservation had been pushed for years. Although GRU prides itself on its energy conservation program, California's example suggests we have done very little mine this extensive resource of pollution prevention.

Energy conservation was occasionally mentioned in the GRU Advisory Board meetings but a fundamental conflict of interest prevents GRU, and perhaps the County, from taking energy conservation seriously, namely, the County is supported on energy sales revenue. Energy conservation reduces County revenues. This conflict needs to be faced squarely and resolved, because it prevents us from acting in the best interests of County citizens and the environment in utilizing the powerful economic and environmental benefits of a serious energy conservation program.

I recommend that the air pollution control alternatives review examine the economic and environmental benefits of energy conservation in the same economic framework as installed controls.

Everglades Alternative Energy Project

GRU is considering investing in a biomass energy project in a former section of the Everglades. This steam generator will burn an exotic grass to produce energy. I asked GRU about the invasive characteristics of the plant and was assured that it was "okay". Many such exotic plants have cost the U.S. billions of dollars in subsequent control and damage costs (Maleluca, Cogon grass, Kudzu, etc.) because of irresponsible introductions. It is very difficult to evaluate the invasive characteristics of such introductions, but the glowing terms describing the rapid growth of this plant suggest to me that it is indeed invasive, and it will be used in the Everglades, which may already be terminally imperiled by so many other factors.

I recommend that GRU suspend its support of the biomass to energy project until it has a review in hand from at least the biologists and academic researchers on the Florida Exotic Pest Plant Council on the suitability of this plant in its currently proposed setting.

Respectfully,

David Harlos, Sc.D.