APPENDIX F

COMMENTS AND RESPONSES ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

PUBLIC HEARING

ORLANDO GASIFICATION PROJECT
DRAFT ENVIRONMENTAL IMPACT STATEMENT

U.S. DEPARTMENT OF ENERGY

Wednesday, September 13, 2006

7:00 p.m. to 9:00 p.m.

Timber Creek High School
1001 Avalon Park Boulevard
Orlando, Florida

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DIANE MADDEN, Project Manager, U.S. Department of Energy Technology Laboratory

P R O C E E D I N G S

Transcript of proceedings had at the Timber Creek High School, 1001 Avalon Park Boulevard, Orlando, Florida, on Wednesday, September 13, 2006, commencing at 7:02 p.m., and reported by DIANNE X. MORGAN-McLEAN, a Registered Professional Reporter and Notary Public, State of Florida at Large.

MR. HARGIS: Well, it's a little bit after 7:00, so if everyone could take a seat. Okay. I guess we'll get started.

Okay. Welcome to the U.S. Department of Energy's Public Hearing on the Draft Environmental Impact Statement for the Orlando Gasification Project.

Let the record show that the meeting began on September 13th, 2006, at 7:02 p.m.

My name is Rich Hargis and I work for the National Energy Technology Laboratory of the U.S. Department of Energy. I am responsible for managing the preparation of the Environmental Impact Statement for this project.

Before we get started, I'd like to let you know that there are a couple of local officials -- a few local officials in the audience. Len Kozlov from the Florida Department of Environmental Protection

is here. And Lou Cunniff Coniff from Orange County EPD, Environmental Protection Division. John Kasper, also from the Orange County Environmental Protection Division. And Jodi Dittell from the same office.

The U.S. Department of Energy personnel seated to my left here are Mark Matarrese, who is the Director of the Office of Environment, Security, Safety, and Health with the Office of Fossil Energy at DOE Headquarters in Washington.

Next to him is Denise Freeman, who represents the Office of NEPA Policy and Compliance with the DOE Headquarters Office of General Counsel.

At the end is Diane Madden from the U.S. Department of Energy National Energy Technology Laboratory. And she is the DOE Project Manager for the project.

We also have a representative from Oak Ridge National Laboratory, the guy who was asking you to sign in when you came in the door, who is Bo Saulsbury. He leads the team of experts from Oak Ridge National Laboratory that is helping DOE prepare the Environmental Impact Statement.

Also in the audience are representatives from the industrial participants in the project, Southern

Company and the Orlando Utilities Commission.

Tonight's Agenda. There will be a few brief presentations before we get to the heart of the meeting, which will be your comments.

I'll start with a brief discussion of the meeting purpose. Diane Madden will then describe the Clean Coal Power Initiative and how this initiative addresses the nation's energy needs. Then Randall Rush of Southern Company will give an overview of the Orlando Gasification Project.

After that, I'll present a few slides on the Environmental Impact Statement process and the governing law, the National Environmental Policy Act or NEPA.

And then we'll turn the microphone over to you for your comments.

Okay. Why are we having this public meeting? Well, we're looking for comments from you, the public, on the environmental impact areas addressed in the Draft Environmental Impact Statement; the alternatives that were considered; the emphasis given to critical issues; and the environmental analyses that were performed.

Your comments will be considered in preparing the final Environmental Impact Statement for this

project. And your comments are very important to us in ensuring that DOE has considered all the environmental issues before making a final decision on the project and that the proper emphasis is given to the most critical issues.

We have a court reporter here today and a transcript will be made, and that includes your comments.

For those who prefer to provide written comments, please note that your name and address will be included in the final EIS, unless you specifically request that this information be withheld.

As shown here, the deadline for comments will be October 10th, 2006.

The next presentation, Diane will now discuss the Clean Coal Power Initiative.

Diane?

MS. MADDEN: The Clean Coal Power Initiative is a cost-shared collaboration between the Government and industry to implement the President's National Energy Policy recommendation to increase investment in clean coal technology by demonstrating advanced coal-based, power generation technologies.

The CCPI program, established by Congress,

provides the opportunity for a demonstration of advanced technologies that have progressed past the research and development stage to a point of readiness for operation at a scale that would be readily replicated in commercial markets.

It is an industry/government cost-sharing partnership which leverages public/private investments, enhances teamwork, promotes technology transfer, and provides expertise and funding needed to ensure the successful development and deployment of these advanced technologies.

The CCPI is a multi-year program in which the private sector submits applications to Government solicitations. And the application submitted under the program is subject to a rigorous evaluation procedure in which it is assessed against specific criteria that include technical merit, feasibility, commercialization potential, financial business plan, and other programmatic criteria.

There are currently 11 clean coal demonstration projects in the Department's portfolio. And this slide provides a view of where the projects are located and the types of clean coal technology that we're using.

And now Mr. Randall Rush, the Project Director

from Southern Company, will talk about the project.

MR. RUSH: Thank you, Diane.

If you could go to the next slide.

Let me just say before I start that I don't mind being interrupted. If you've got questions, a little discussion, that's fine. Feel free to do that.

I told you who I am. I'm responsible for the facility where the technology that we're demonstrating here was developed just southeast of Birmingham in Alabama.

I'm also, from Southern Company's perspective, overall responsible for the project here in Orlando.

Go to the next slide.

What we're here to do is to build an advanced Integrated Gasification Combined-Cycle facility. It has two main components, a gasification facility that produces the synthesis gas that could be used in this case to make power, and a combined-cycle facility that uses that synthesis gas, as well as the heat that's generated in the production of the synthesis gas, to make power.

Southern Company and the Orlando Utility Commission are the primary partners in this facility.

The key point about this coal-based technology is that if you look at the energy supply available in this country, over 90 percent of what's available for us in the U.S. is in the form of coal. Over 60 percent of the energy in the world is in the form of coal.

And if we're going to continue the lifestyle, and we would expect that people in other parts of the world are going to have a lifestyle that they would like to have, we're going to have to find better, more efficient, cleaner ways to use coal, as well as other forms of energy.

So a big piece of this project is focusing on more efficient, cleaner use of coal.

We have a technology that we believe is a superior gasification technology. There are coal gasification systems that are available today. They were all oxygen powered. They take the oxygen out of the air in a very expensive process to feed that oxygen to the gasification process.

One of the key aspects of this technology is that we use only air. We don't separate the oxygen from the air that we're using in the process. It also operates at a lower temperature than the gas powered and we believe that leads to a lower cost

and a higher viability. So ultimately low cost electricity to the consumer.

If you look at this chart, as I said, essentially we're taking the coal in a device that I won't go into the details of, unless someone asks the question. But we convert it into a synthesis gas.

We cool that gas and in the process of cooling we raise steam and that steam is used to make electricity. Then we clean the gas up to a quality similar to natural gas and then the fire in the gas turbine will make additional electricity.

Next slide.

The site in Orlando -- there's a slide coming up in a minute -- it's about 3300 acres that the Orlando Utilities Commission developed several decades ago for power generation here. Of that 3300 acres about 1100 is actually developed for power. And of that we're using about 35 acres, shown here in green, for this gasification facility -- or two coal fire facilities here using the pulverized coal technology. There's a natural gas powered combined-cycle unit here. And then between those two facilities will be located this advanced Integrated Gasification System.

Yes, sir?

UNIDENTIFIED SPEAKER: Quick question on the previous slide.

MR. RUSH: Go back a slide.

UNIDENTIFIED SPEAKER: You mentioned a multi-point flare system. Where is that in the process --

MR. RUSH: When you -- I'm sorry?

UNIDENTIFIED SPEAKER: Where is that in the process of --

MR. RUSH: If you go back to the -- you want to see it in the plot or in the process?

UNIDENTIFIED SPEAKER: Both. In the process --

MR. RUSH: Okay. Well, in the process flow essentially -- it's not shown here, but once you clean the gas up, when you're in start-up mode, you have to have the ability to flare the gas until it's of sufficient quality to make electricity.

If there is an emergency shutdown, if this gas turbine, for example, trips and says, I can't take that syngas anymore, you've got to have the ability to vent that energy, quit making syngas, because the turbine isn't ready to accept it.

What we have, if you go to the next slide, normally in this location here there's a ground

flare. I'm not talking about the kind of flare you may have seen at petroleum refineries, very high up in the air with a large flame that you can see for miles around.

This is a multi-point flare with dozens of vents where flame is behind walls at grade. So when we flare, you won't be able to see it in the community. Okay?

Let's go to the next slide.

This just is a computer rendering of what the facility will look like. I've pointed out that there were two polarized coal fire units on the site.

This photograph was actually taken from the roof of one of those. And here in the background is the 600 megawatt natural gas fired combined-cycle unit. We'll be adding a nominal 300 megawatt syngas fired unit. It will also be capable of firing natural gas in case the syngas isn't available. So it's available to make electricity, even if the gasification system isn't running at the time.

You see we'll be bringing coal into the gasification facility. And then all of this shows the detail here. Here's the gas cleanup systems that will be used before the gas is fed into the

combined-cycle unit.

And there's a cooling tower we added in red here because of the combined-cycle unit. And there's an additional component to the cooling tower because of the gasification facility.

The next slide.

I have already mentioned, I think, a lot of the information on here.

We'll be bringing in about three train loads per week of the coal for this facility. The amount of syngas produced probably doesn't mean much to anybody, but about 285 megawatts of electricity.

The existing site has about 1500 or so megawatts. And there's some details for that and specifics.

So we're adding something on the order of a sixth of the capacity.

Go to the next slide.

One of the characteristics of this technology is that its emissions, air emissions in particular, are quite a bit better than the existing fleet of coal technology.

It uses less water per megawatt of power generated, on the order of half the amount of water that the pulverized coal uses per megawatt.

And one of the things about the Stanton facility is even the PC units on the site are zero discharge. So all the water that is generated in this process is recycled and reused in the process. There will be no discharge from the facility.

We do make about a ton an hour of ammonia. Ammonia is valuable in the agricultural industry as a fertilizer. And the way the price of natural gas has gone, ammonia production in the US has moved largely offshore to Trinidad because you can't afford to use natural gas to make ammonia anymore.

About half a ton per hour of sulfur, which will also be sold. It's valuable in the phosphate industry.

And then we do, because we're using coal, make ash that we will dispose of on the site.

Next slide.

We're in the middle of what we call front end engineering and design at the moment. That work will complete in the first quarter of next year. And we expect to be in detail design in March of next year.

The initial groundbreaking of the site will be in December of next year. And we expect commercial operations in the middle of 2010.

There will be a four-year demonstration period. This is a DOE project. That's essentially the reason we're here tonight, is because of the federal funding that's involved in the facility.

And so for the first four years of operation the plant will operate normally and produce power, but there will be an intensive evaluation with additional engineers and additional testing on site to evaluate how the process is performing. Detailed public reports will be written about that.

I'm sorry. Well, I talk so loud -- I apologize.

And then after the end of that demo period, the plant will continue to operate throughout its whole life.

I believe that may be the last slide.

Yes, sir.

UNIDENTIFIED SPEAKER: How much carbon dioxide does it produce for 300 megawatts, let's say, to compare to a steam plant?

MR. RUSH: Yeah. Compared to a steam plant, I guess I could -- you want to --

MR. HARGIS: Well, those kind of questions are addressed in the Draft EIS.

MR. RUSH: Okay.

MR. HARGIS: And I think we have a table in the back if you want to take --

MR. RUSH: Okay. Rather than me responding off the cuff, look at what's officially written --

MR. HARGIS: It's on the order of a million tons a year.

MR. RUSH: Okay.

MR. HARGIS: Okay. Thanks, Randall.

Next slide.

Now I'd like to move on to some background to the environmental review process.

The driving force is the National Environmental Policy Act or NEPA. This federal law applies to all major actions by federal agencies. And it's a national charter for protection of the environment.

The mandate is to make environmental information available before final decisions are made on any major federal action that could significantly affect the quality of the human environment.

The emphasis is on making well-informed and better decisions that take proper consideration of environmental consequences.

The focus is on truly significant issues, and that is what we have tried to do in preparing the

Draft Environmental Impact Statement with the help of your comments last year through the scoping process, so that the Federal Government can make the best decision possible.

This flow chart shows the steps involved in the preparation of this EIS. The public scoping period for this project began with the Notice of Intent to prepare an EIS published in the Federal Register on August 11th, 2005.

The public scoping meeting was held at this location on August 30th of last year and 11 people gave their comments at that meeting.

The comment period ended on September 16th of last year and we received 11 responses by comment card, mail, and e-mail.

Preparation of the Draft EIS began after that comment period and a Notice of Availability was issued on August 24th, 2006.

This public hearing is now your opportunity to comment on the contents of that Draft EIS. Comments received will then be incorporated into a final EIS, which is projected to be released next January.

Then finally, a Record of Decision is issued on the proposed action based on the results in the final EIS.

This is a list of environmental impacts that have been addressed in the Draft Environmental Impact Statement.

On the left side is the list that DOE prepared prior to the scoping period last year. As a result of comments received, special emphasis was given to those resource areas highlighted in blue.

For example, the air quality section includes a mercury-deposition analysis, as well as a discussion of the increases in global CO2 emissions.

Under safety and health, a discussion of health risks due to air emissions is provided.

And we also gave special emphasis to visuals at the site, as well as community impacts, especially traffic.

The Draft Environmental Impact Statement contains a thorough analysis of both the proposed action and the no-action alternatives. The proposed action is to provide cost-shared funding for this project beyond preliminary design.

Under the no-action alternative the most likely scenario is that the combined-cycle unit would still be built, but it would operate on natural gas rather than coal-derived syngas.

A list of other alternatives considered is

shown here. In each case we tried to explain why these alternatives were not reasonable and, therefore, why no detailed analysis was provided.

Now we're ready for your comments. But, speakers, please limit your comments to five minutes so everyone who wants to speak has an opportunity. If you need additional time, we'll make time available after all those who want to speak have had a chance.

When I call your name, can you please step up to the microphone and state and spell your name for the record.

The first -- the order of speakers is preregistered speakers first. And we did have a couple of people preregistered to speak today.

One is Jason Stewart from Orlando, Florida, if you're here.

(No response.)

MR. HARGIS: I guess maybe he got tied up in traffic.

Speaker number two is Sam Kendall from Altamonte Springs.

(No response.)

MR. HARGIS: Maybe he will show up before we adjourn here.

But the next of the speakers who are registered today we have -- let's see. I know this guy is in the audience. Robert Stonerock, Jr.

Please come up to the microphone at the end of the aisle there. Please address your comments to DOE. And we'd appreciate it if you'd focus on the contents of the Draft EIS.

MR. STONEROCK: Okay. So I'm supposed to stand this way.

Do I have to confine my comments to the EIS specifically or can I include OUC in there?

MR. HARGIS: Well, we are here for -- to get comments on the Draft EIS. But you have an open mike and five minutes. Say whatever you like.

MR. STONEROCK: Okay. Great. Thank you.

I'm Robert Stonerock, Jr. And it's S-T-O-N-E-R-O-C-K. I'm vice president of Eco-Action, Incorporated. And I'm also a member of the Florida Renewable Energy Association. I live in Orlando. I represent my wife, daughter, and myself. Also, I'm a physician deeply concerned about public health.

On August 30th I stood up here last year and said that I think that OUC is a great organization that has people who are a pleasure to work with. My

opinion has not changed about this.

I also said that I disagree with OUC about greenhouse gasses. I said that, unlike OUC, I am alarmed about carbon dioxide emissions, and I believe these emissions are creating the biggest emergency the Earth has faced in the last 160 million years. RS-001

My opinion has not changed about that either, except that I see hopeful signs that OUC might be looking into offering a green electricity program working with renewables, and I'd encourage more of that.

These hopeful signs are greatly diminished by OUC's intent to build this proposed plant using so-called clean coal technology, which as a side comment, in my view, couldn't be clean, even if you scrubbed it with Tide 24 hours a day. RS-002

The Department of Energy's fat document here we were given to read hardly addresses carbon dioxide. It does, however, quantify the magnitude of the situation. RS-003

It says that the new OUC plant will emit 1.8 million tons of carbon dioxide per year, which will add that much to the existing carbon dioxide that humans put in the air every year, which appears to

be worldwide 26,713 million tons in the year 2000.

Now, you just know that it's got to be more this year. And 26,713 million tons s really a polite way of saying almost 27 trillion tons. And you know -- let's see.'

To give everybody an idea of the magnitude of 27 trillion tons of carbon dioxide, consider that in 1980 Mount St. Helens erupted spewing 800 thousand tons of carbon dioxide into the atmosphere that year only.

My calculator tells me that 27 trillion tons represents the output of nearly 34,000 volcanoes the size of Mount St. Helens. 34,000. Every year. RS-003

Is it any surprise that this amount of waste product in our air would alter our environment? Is it any surprise that the man who got the most votes in the 2000 presidential race would show a graph in his documentary on global warming that shows atmospheric carbon dioxide levels shooting up higher than ever before in recorded history, and it's still sharply rising with a very steep slope.

Now OUC wants to put two more volcanoes down the road right next to the ten or so that already are there. And the Department of Energy has gone into meticulous detail about mercury, NOx, and

particulates, even to the point of producing a table that more or less says that these other pollutants will lead to one in a million human deaths per year in Orlando.

But DOE has only one other sentence in its fat document dealing with carbon dioxide, and that addresses the gasification equipment of this plant here, that it is, quote, inherently flexible and will allow it to readily adapt to other applications beyond power generation, including chemical production and possible future carbon management requirements. RS-003

Having reviewed this document, I have come to realize that it represents the Department of Energy's due diligence before implementing a grant for a demonstration project that has defined limits and specifications. RS-004

This is one way that the Department of Energy can get around addressing this grave concern about carbon dioxide shared by Al Gore and me and hopefully some of you in this room about that 37,000 volcano equivalents per year.

When I was here last August, I proposed two things to help reduce greenhouse gases. The first one was to approve the project on the condition that RS-005

OUC will phase in carbon sequestration, and the other was to phase in using biomass for energy as a substitute for coal in this very plant.

I can see clearly now that the Department of Energy is not going to add these conditions to the building of this project.

Therefore, today I am calling on OUC to include these additional technologies into the new plant in stepwise fashion on a voluntary basis.

I am also calling on OUC to pursue its green electricity program in earnest and to facilitate the deployment of solar projects with the goal of eliminating the need to build future power plants that would supply power on demand.

RS-005

Finally, noticed that in the case of NOX, there will be no net increase due to this new plant because of OUC's placement of more scrubbers in the other Stanton plant.

In the spirit of this, I call on OUC to implement sufficient scrubbers on all plants in order to reduce all forms of atmospheric pollution down to only two or three percent.

I also call on OUC to phase in carbon sequestrations for all of its power plants.

RS-006

I have a wonderful neighbor who told me his

concerns about his grandchildren, that they may pay with their lives because we are ignoring the obvious today.

OUC has the choice to do something rock-solid good for my neighbor's grandchildren. And I sincerely hope that OUC will make the choice to do just that.

Thank you.

MR. HARGIS: Thank you, Robert Stonerock.

(Applause.)

MR. HARGIS: We had one person signed up. Ed Alexander said he wasn't sure if he wanted to make a comment or not. Ed Alexander?

(No response.)

MR. HARGIS: Another maybe was Frank Truckenmueller. Did you have anything you wanted to add?

(No response.)

MR. HARGIS: Okay. We only have one other registered speaker. And that's Hal O'Brien.

Please state and spell your name.

MR. O'BRIEN: Hal O'Brien, O-B-R-I-E-N. I was just brought aware of this out of Washington yesterday so I'm not up on some of what you have got in here.

But the doctor had a good approach to this carbon dioxide. We have technology now that does away with carbon dioxide. Our company does. And I can build that power plant, I know, for probably around a third of what they propose to do this. We can burn any type of coal and we have absolutely zero emissions. Nothing going in the air, nothing. But we were not aware of this going on down here until yesterday, so I haven't had the opportunity to get our --

HO-001

I'm with the toxic waste end of our business in Washington with the Department of Defense. But the emissions that appear to be coming out of here -- it only looks like you're only using a wet scrubber to begin with. You can't do away with the emissions with the equipment you've got up there. It's impossible. You're going to come out with carbon dioxide sulphur. And all these byproducts that it appears like you're going to sell it, why not destruct it and make power out of it and have nothing in the end.

I guess, like I said, I'm not prepared to go over this, because I haven't had a chance to look at it. But the only one interested in getting byproducts are Dupont because they want government

HO-002

contracts. But if you do away with it and generate power, what do you need it for. HO-002

And to generate power as suggested here in a lower heat, it's impossible. It's ludicrous to think you can generate from cold -- not coal, cold. The colder you get, the less power you get. And we start out like 3500 degrees. And this thing, I don't think it's capable of getting more than 2500 degrees. HO-003

But it's just that this, it's going to go out and, in my opinion, put an awful lot of emissions in the air that the people are going to breath. And we have technology available today that will do away with that completely. There would be no emissions, zero. * HO-004

MR. HARGIS: Okay. Well, we appreciate that. And we'll look forward to receiving your written comments after you've had a chance to look at the Draft EIS.

Okay. Anybody in the audience that hasn't registered that would like to give us your comments, your opinions, open mike.

(No response.)

MR. HARGIS: Okay. Well, next slide.

Well, what happens next? DOE collects and

responds to all comments received or postmarked by October 10th, 2006.

We then prepare a final Environment Impact Statement and a Record of Decision based on those comments received. The final EIS is projected for January 2007, as I said.

The Assistant Secretary for Fossil Energy signs the Record of Decision and that would occur 45 to 60 days after the Final EIS is issued.

The due date for comments, please remember, is October 10th. We will attempt to address comments after that date to the extent possible.

The place to send comments is shown here. But it's also listed on any number of handouts available at this meting, as well as in the Draft EIS itself.

And with that, let the record show that the meeting ended at 7:35 p.m.

And with that, we are adjourned.

Thanks for coming and thanks for your participation.

(Meeting concluded at 7:35 p.m.)

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CERTIFICATE OF OATH

STATE OF FLORIDA)
COUNTY OF ORANGE)

I, DIANNE X. MCLEAN, Registered Professional Reporter, do hereby certify that I was authorized to and did stenographically report the foregoing proceedings and that the transcript is a true and complete record of my stenographic notes.

DATED this 6th day of October, 2006.

_____
Dianne X. McLean

Oral Comments from the September 13, 2006, Public Hearing in Orlando, Florida

Robert Stonerock

RS-001: I disagree with OUC about greenhouse gases. Unlike OUC, I am alarmed about carbon dioxide emissions, and I believe these emissions are creating the biggest emergency the Earth has faced in the last 160 million years. I see hopeful signs that OUC might be looking into offering a green electricity program working with renewables, and I'd encourage more of that.

Response: Comments noted. Sections 4.1.2 and 6 address the issue of CO_2 emissions from the proposed facilities.

RS-002: These hopeful signs are greatly diminished by OUC's intent to build this proposed plant using so-called clean coal technology, which as a side comment, in my view, couldn't be clean, even if you scrubbed it with Tide 24 hours a day.

Response: Comments noted.

RS-003: The Department of Energy's fat document here we were given to read hardly addresses carbon dioxide. It does, however, quantify the magnitude of the situation. It says that the new OUC plant will emit 1.8 million tons of carbon dioxide per year, which will add that much to the existing carbon dioxide that humans put in the air every year, which appears to be worldwide 26,713 million tons in the year 2000. Now, you just know that it's got to be more this year. And 26,713 million tons is really a polite way of saying almost 27 trillion tons. **[DOE correction: 27 billion]** To give everybody an idea of the magnitude of 27 trillion **[DOE correction: 27 billion]** tons of carbon dioxide, consider that in 1980 Mount St. Helens erupted spewing 800 thousand tons of carbon dioxide into the atmosphere that year only. My calculator tells me that 27 trillion **[DOE correction: 27 billion]** tons represents the output of nearly 34,000 volcanoes the size of Mount St. Helens. 34,000. Every year. Is it any surprise that this amount of waste product in our air would alter our environment? Is it any surprise that the man who got the most votes in the 2000 presidential race would show a graph in his documentary on global warming that shows atmospheric carbon dioxide levels shooting up higher than ever before in recorded history, and it's still sharply rising with a very steep slope. Now OUC wants to put two more volcanoes down the road right next to the ten or so that already are there. And the Department of Energy has gone into meticulous detail about mercury, NOx, and particulates, even to the point of producing a table that more or less says that these other pollutants will lead to one in a million human deaths per year in Orlando. But DOE has only one other sentence in its fat document dealing with carbon dioxide, and that addresses the gasification equipment of this plant here, that it is, quote, "inherently flexible and will allow it to readily adapt to other applications beyond power generation, including chemical production and possible future carbon management requirements."

Response: Comments noted. Sections 4.1.2, 4.2, and 6 address the issue of CO_2 emissions from the proposed facilities. DOE has updated the information on global CO_2 emissions in Section 4.1.2, added information on carbon sequestration options in Section 4.2, and

provided a discussion of the effects of IGCC market penetration on national CO_2 emissions in Section 6.

RS-004: Having reviewed this document, I have come to realize that it represents the Department of Energy's due diligence before implementing a grant for a demonstration project that has defined limits and specifications. This is one way that the Department of Energy can get around addressing this grave concern about carbon dioxide shared by Al Gore and me and hopefully some of you in this room about that 37,000 volcano equivalents per year.

Response: The solicitation under which this project was selected did not specify the incorporation of carbon capture and sequestration technology in project proposals. To be cost-effective, carbon capture and sequestration must be integrated in the project design and considered in the site selection process.

DOE is actively pursuing methods of a addressing CO2 emissions, including the development of carbon sequestration technology through its Carbon Sequestration Program (see Carbon Sequestration Technology Roadmap and Program Plan 2006 at http://www.netl.doe.gov/technologies/carbon_seq/index.html). Other than enhanced oil recovery, sequestration options have not been demonstrated at the scale required for the Orlando Gasification Project. Sequestration options for all regions of the country are still under investigation in DOE's Carbon Sequestration Program (DOE 2006). A program goal is to initiate at least one large-scale demonstration, at the scale required for a power plant, in 2009 to demonstrate the appropriateness for CO_2 injectivity and validate storage capacity estimates and permanence.

DOE's FutureGen project is an example of carbon capture and sequestration being integrated in the design and site-selection process. Virtually every aspect of the prototype plant would employ cutting-edge technology. (For more information on FutureGen see http://www.netl.doe.gov/technologies/coalpower/futuregen/.)

RS-005: I proposed two things to help reduce greenhouse gases. The first one was to approve the project on the condition that OUC phase in carbon sequestration, and the other was to phase in using biomass for energy as a substitute for coal in this very plant. I can see clearly now that the Department of Energy is not going to add these conditions to the building of this project. Therefore, today I am calling on OUC to include these additional technologies into the new plant in stepwise fashion on a voluntary basis. I am also calling on OUC to pursue its green electricity program in earnest and to facilitate the deployment of solar projects with the goal of eliminating the need to build future power plants that would supply power on demand.

Response: Comments noted. In the long term, the feasibility of carbon sequestration for the proposed facilities would depend upon the implementation of CO_2 emissions regulations and further characterization of the geologic formations in the Orlando area. It is generally recognized that carbon sequestration is unlikely to be deployed in situations other than value added applications (e.g., enhanced oil recovery) in the absence of regulations (IPCC 2005). If such regulations were enacted, it is likely that there would be more incentive to characterize the sequestration potential of geologic formations in the central Florida region. The only characterization of sequestration

potential that includes the Orlando area was at a "reconnaissance level" and was completed about six years ago. However, a geologic formation has been identified (the Cedar Keys/Lawson) and this formation could be further characterized. (http://www.beg.utexas.edu/environqlty/co2seq/0cedarkey.htm) In the event that such further characterization revealed suitable sequestration potential, the proposed IGCC facilities might be retrofit with carbon capture equipment and the carbon sequestered in a geologic formation at some time in the future.

With regard to renewable energy technologies, the Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) has taken a leadership role in the development of solar and biomass technologies through its Solar Energy Technologies Program (www.eere.gov/solar) and its Biomass Program (www.eere.gov/biomass).

RS-006: Finally, I noticed that in the case of NOX, there will be no net increase due to this new plant because of OUC's placement of more scrubbers in the other Stanton plant. In the spirit of this, I call on OUC to implement sufficient scrubbers on all plants in order to reduce all forms of atmospheric pollution down to only two or three percent. I also call on OUC to phase in carbon sequestrations for all of its power plants.

Response: Comments noted. OUC's actions at its other power plants are beyond the scope of this EIS.

Hal O'Brien

HO-001: We have technology now that does away with carbon dioxide. Our company does. And I can build that power plant, I know, for probably around a third of what they propose to do this. We can burn any type of coal and we have absolutely zero emissions. Nothing going in the air, nothing.

Response: Comments noted. Alternative technologies are discussed in Section 2.3.2.4. In addition, it should be noted that DOE is pursuing to fund in its R&D portfolio of demonstration projects a variety of technologies with a range of specific demonstration goals. Some projects' goals strive for zero emissions (for example, of carbon dioxide emissions); others will attempt to demonstrate the viability of using a particular advanced technology for removal of a selected pollutant. Still others pursue efficiency and economics-related goals. The goal of the Orlando Gasification Project is to demonstrate advanced coal-based technologies that can generate clean, reliable, and affordable electricity in the United States. Another goal is to provide a more cost-effective fuel supply for integration with the planned combined-cycle unit to generate electricity.

HO-002: The emissions that appear to be coming out of here—it only looks like you're only using a wet scrubber to begin with. You can't do away with the emissions with the equipment you've got up there. It's impossible. You're going to come out with carbon dioxide sulphur. And all these byproducts that it appears like you're going to sell it, why not destruct it and make power out of it and have nothing in the end. The only one interested in getting byproducts are DuPont because they want government contracts. But if you do away with it and generate power, what do you need it for?

Response: The pollution control systems being used in this project represent the current state-of-the-art for the commercial demonstration of Integrated Gasification Combined Cycle technology. Furthermore, the FDEP has accepted these systems as representing Best Available Control Technology in the Draft Prevention of Significant Deterioration Permit issued July 26, 2006 (see Appendix G for emissions limits).

HO-003: And to generate power as suggested here in a lower heat, it's impossible. It's ludicrous to think you can generate from cold—not coal, cold. The colder you get, the less power you get. And we start out like 3,500 degrees. And this thing, I don't think it's capable of getting more than 2,500 degrees.

Response: There is sufficient data at pilot scale to support the technical basis for this technology, including data regarding operating temperatures. There are a number of reports on the development of the Transport Gasifier technology available at http://www.netl.doe.gov/technologies/coalpower/gasification/facilities/psdf.html.

HO-004: But it's just that this, it's going to go out and, in my opinion, put an awful lot of emissions in the air that the people are going to breath. And we have technology available today that will do away with that completely. There would be no emissions, zero.

Response: See responses to comments HO-001, HO-002, and RS-004 above.

>>> "Jason Stewart" <jswstewart@juno.com> 9/10/2006 6:54 PM >>>
TO Mr. Hargis

Please send me a complete copy of the Draft and Final EIS report.
I also wish to speak at the hearing.
I wish also to have the following items included in the final report and addressed by your personnel.

Please provide the following or explain the following.

Air Quality

How does OUC plan to reduce current NO and SO gas emissions to reduce overall emissions once the new plant goes on-line? JS-001

What will be the new overall percentage reduction or increase in overall NO and SO emissions relative to current emission levels? JS-002

Please provide a figure / diagram illustrating the corresponding concentration levels of NO and SO gas for the surrounding areas of the Stanton Power Plant similar to the PPM figure provided in the ALOHA truck report. JS-003

Trucking

Please provide the intended route to be used by the Trucks removing and delivering the Anhydrous Ammonia, construction materials, wastes etc to and from the site. My personal recommendation is that these trucks use the SR 417 and SR 528 as access to the site. JS-004

Buffer Zone

It is indicated in the report that the plant has a visual screen of forest and natural tress to prevent home owners from visually viewing the new construction. Is this land owned by the Stan ton Power Plant and OUC group, if it is has it been permitted to prevent future removal for expansion. JS-005

Thank You

Jason Stewart PE
POB 780874
Orlando FL 32828

Jason Stewart

JS-001: How does OUC plan to reduce current NO and SO gas emissions to reduce overall emissions once the new plant goes on-line?

Response: As stated in the Summary and in Section 4.1.2.2, OUC has agreed as part of the air permitting process to reduce NO_x emissions from existing units at the Stanton Energy Center to offset increases due to the Orlando Gasification Project. There are no emissions reductions planned for SO_2.

JS-002: What will be the new overall percentage reduction or increase in overall NO and SO emissions relative to current emissions levels?

Response: The percentage increase/decrease can be calculated from the net emissions decreases for NO_x and net emissions increases for SO_2 shown in Table 2.1.1. The percentage decrease in NO_x emissions is ~1.8% (100 – (9,332/(9,325+177))*100) and the percentage increase in SO_2 emissions is ~2.0% (100*(6,955/(6,800+18))-100).

JS-003: Please provide a figure/diagram illustrating the corresponding concentration levels of NO and SO gases for the surrounding areas of the Stanton Power Plant to the PPM figure provided in the ALOHA truck report.

Response: As stated in Section 4.1.2.2 (DEIS pages 4-7 and 4-8), modeling of all sources at the Stanton Energy Center was not conducted because the maximum concentrations from the Orlando Gasification Project were predicted to be less than their corresponding significant impact levels. Instead, maximum predicted concentrations of criteria pollutants were added to measured background concentrations (see Table 4.1.2). This is a very conservative approach, since (1) the maximum ambient impact locations are different from the monitoring locations, so the predicted increases would be less at the monitoring locations and (2) NO_x emissions offsets were not considered.

JS-004: Please provide the intended route to be used by the Trucks removing and delivering the Anhydrous Ammonia, construction materials, wastes, etc., to and from the site. My personal recommendation is that these trucks use the SR 417 and SR 528 as access to the site.

Response: The intended routes for trucks that would deliver materials to and remove materials from the site are (1) SR 50 to South Alafaya Trail, (2) SR 408 to South Alafaya Trail, and (3) SR 417 to Curry Ford Road to South Alafaya Trail. Once the new Innovation Way is ready for use, trucks will also be able to access the plant site using this route, via SR 528.

JS-005: It is indicated in the report that the plant has a visual screen of forest and natural trees to prevent homeowners from visually viewing the new construction. Is this land owned by the Stanton Power Plant and OUC group? If it is, has it been permitted to prevent future removal for expansion?

Response: OUC owns the land that the Stanton Energy Center occupies. The Conditions of Certification issued by FDEP state that the site shall be developed so as to retain the buffer of natural vegetation.

REGISTERED ATTENDANCE AT PUBLIC MEETING (VOLUNTARY)

NAME AND MAILING ADDRESS:	DO YOU WISH TO MAKE AN ORAL STATEMENT AT THIS MEETING?
Chad A Barnett 2421 Guiana Plum Dr Orlando, Fl 32828 PHONE: ( ) unlisted	☐ YES ☒ NO DO YOU WISH TO SUBMIT A WRITTEN STATEMENT? ☒ YES ☐ NO
NAME OF ORGANIZATION OR AGENCY AND YOUR POSITION Avalon Park Home Owner	WHOM ARE YOU REPRESENTING? ☐ SELF ☐ FEDERAL, STATE OR LOCAL GOVERNMENT AGENCY ☐ ORGANIZATION ☒ OTHER My Family
COMMENTS: What about the traffic – First build the road then build the power Plant	

CB-001

Chad A. Barnett

CB-001: What about the traffic? First build the road then build the power plant.

Response: Sections 4.1.7.7 and 6 assess the potential traffic impacts of constructing and operating the proposed facilities, and discuss potential mitigation measures for those impacts. The mitigation measures required by the State of Florida in the Conditions of Certification for the project are included in Section 4.1.7.7. In addition, DOE will consider adopting, as a mitigation measure in the Record of Decision, a condition that all offsite transportation of sulfur, ammonia and ash should be done by rail to the maximum extent practicable (see response to OC-006).

Orange County and the Florida Department of Transportation are responsible for scheduling local road projects in the vicinity of the proposed facilities. The scheduling of local road projects relative to the construction of the proposed facilities is not within DOE's control.

Robert Stonerock

RS-007: Robert Stonerock submitted a written copy of the oral comments he made during the September 13, 2006, public hearing (see comments RS-001 through RS-006).

Response: See responses to comments RS-001 through RS-006.

United States Department of the Interior
OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

ER 06/820

September 22, 2006

Mr. Richard A. Hargis, Jr.
U.S. Department of Energy
National Energy Technology Laboratory
P.O. Box 10940
MS 922-342C
Pittsburgh, PA 15236

RE: Draft Environmental Impact Statement for the Orlando Gasification Project (DOE/EIS- 0383)

Dear Mr. Hargis:

The Department of the Interior has reviewed the referenced DEIS and have no comments to provide for your consideration at this time.] DOI-001

You can reach me at 404-331-4524 if you should have any questions or comments.

Sincerely,

Gregory Hogue
Regional Environmental Officer

cc:
BJohnson, USGS-Reston, VA
OEPC-WASO

United States Department of the Interior

DOI-001: The Department of the Interior has reviewed the referenced DEIS and have no comments to provide for your consideration at this time.

Response: Comment noted.

SEMINOLE AUDUBON SOCIETY
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SANFORD FL 32772-2977
www.seminoleaudubon.org
(407) 977-4389

October 6, 2006

Sent via email

Richard A. Hargis, Jr.
NEPA Document Manager, U.S. Department of Energy
National Energy Technology Laboratory, M/S 922-342C
P.O. Box 10940
Pittsburgh PA 15236
hargis@netl.doe.gov

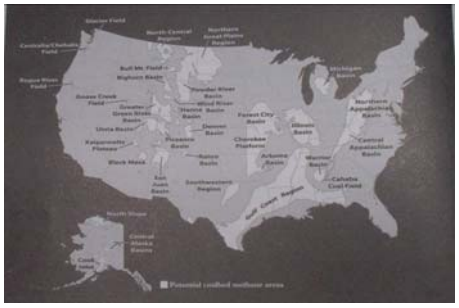
RE: Draft EIS for Orlando Gasification Project – DOE/EIS-0383

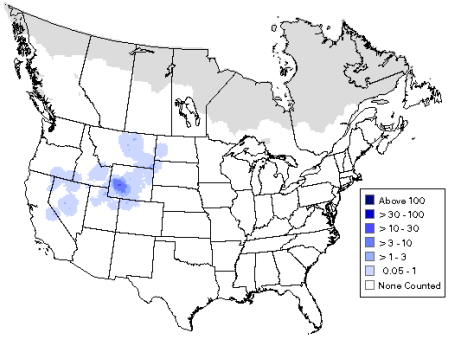
Mr. Richard A. Hargis, Jr.,

The Draft Environmental Impact Statement (EIS) for the Orlando Gasification Project (DOE/EIS-0383) addresses only impacts to the site of the proposed plant. I would like to raise additional impacts related to the extraction of 1,020,000 tons of coal per year and the transport of this coal on 2-3 trains per week traveling from the Powder River Basin in Wyoming the nearly 2000 miles to Orlando, Florida. SAS-001

The Powder River Basin is part of the Sagebrush Sea, an ecosystem that provides essential habitat for the imperiled sage grouse, mountain plover and black-tailed prairie dog. The greater sage grouse is a species of particular interest. They exhibit nearly complete reliance on sagebrush for food and shelter. Sage grouse show strong site fidelity, with average individual movement of less than 25 miles. Sage grouse cannot survive in areas where sagebrush no longer exists. Sagebrush may seem hardy, but it can take years to recover from disturbance. In the Columbian Basin where there was a fire forty years ago, sagebrush has still not returned. SAS-002

Please compare these maps. The map on the left shows the coal deposits in the U.S. and the map on the right shows the breeding range of the greater sage grouse, *Centrocercus urophasianus.* You will note the Powder River Basin is the heart of sage grouse territory. SAS-003





Extraction of coal in this area means destruction and fragmentation of sagebrush habitat which in turn leads to the demise of sage grouse. Research released in June by David Naugle, wildlife professor at the University of Montana, indicates there has already been an 84% decline in sage grouse in the Powder River Basin. SAS-003

In addition to the negative impacts the extraction of coal for this plant will have on the landscape and wildlife populations in Wyoming, humans between Wyoming and Florida will also be negatively impacted. Orlando area residents may be willing to tolerate the disturbance caused by 2-3 coal trains per week. However, up the rail-line closer to the Powder River Basin, residents of towns and cities will experience many more coal trains as massive amounts of coal are transported to new plants in the Midwest and Eastern U.S. Rumbling, vibration, noise and engine warning-horns will disturb residents day and night. They will also have to endure increased daily delays at RR traffic crossings. SAS-004

Seminole Audubon Society does not believe that coal provides a rational energy plan for Orlando. We believe that utilizing local or regional energy sources will be much more efficient than importing coal from across the country. Florida is blessed with solar energy and our climate favors biomass resources. We believe a more responsible energy plan would accelerate the development of these local energy sources. Utilizing these cleaner, renewable resources would also favor both humans and wildlife with little or no negative impacts to the quality of life. SAS-005

Sincerely,

Faith B. Jones

Faith B. Jones, President
puffin_fj@yahoo.com

Centrocercus urophasianus

Healthy Sagebrush habitat

Sagebrush habitat destroyed by coal extraction

Cc: Orlando Utilities Board of Commissioners - commissioners@ouc.com

Seminole Audubon Society

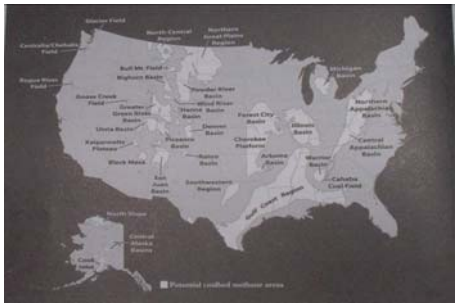
SAS-001: The DEIS addresses only impacts to the site of the proposed plant. I would like to raise additional impacts related to the extraction of 1,020,000 tons of coal per year and the transport of this coal on 2-3 trains per week traveling from the Powder River Basin in Wyoming the nearly 2000 miles to Orlando, Florida.

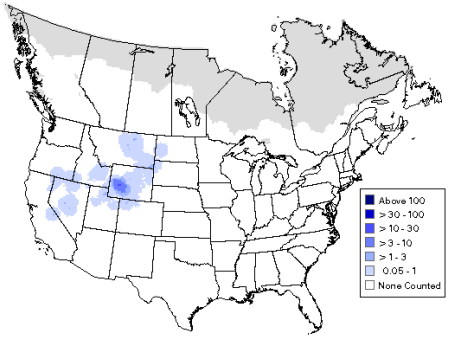
Response: As noted in Section 4.1.2.2 of the DEIS, the amount of coal produced in the Powder River Basin (about 396 million tons in 2004) is orders of magnitude greater than the incremental amount required for the proposed project (about one million tons per year). The proposed facilities' coal consumption would represent approximately 0.26 percent of the basin's annual output. Section 4.1.7.7 acknowledges that the proposed facilities would require 2 to 3 additional train loads of coal per week. It is likely that the impacts described in this comment would disturb residents in the Powder River Basin, and that those residents would have to endure increased daily delays at railroad traffic crossings. However, it is not likely that the small increase in rail traffic associated with the proposed facilities (2 to 3 trains per week) would create significant impacts given the existing level of coal extraction and shipping in the Powder River Basin.

SAS-002: The Powder River Basin is part of the Sagebrush Sea, an ecosystem that provides essential habitat for the imperiled sage grouse, mountain plover and black-tailed prairie dog. The greater sage grouse is a species of particular interest. They exhibit nearly complete reliance on sagebrush for food and shelter. Sage grouse show strong site fidelity, with average individual movement of less than 25 miles. Sage grouse cannot survive in areas where sagebrush no longer exists. Sagebrush may seem hardy, but it can take years to recover from disturbance. In the Columbian Basin where there was a fire forty years ago, sagebrush has still not returned.

Response: Any destruction and fragmentation of sagebrush habitat due to the coal mined for this project would be a small part of the total. We also note that the U.S. Fish & Wildlife Service made a determination in January 2005 that the greater sage grouse did not warrant protection under the Endangered Species Act.

SAS-003: Please compare these maps. The map on the left shows the coal deposits in the U.S. and the map on the right shows the breeding range of the greater sage grouse, *Centrocercus urophasianus.* You will note the Powder River Basin is the heart of sage grouse territory.





Extraction of coal in this area means destruction and fragmentation of sagebrush habitat which in turn leads to the demise of sage grouse. Research released in June by David Naugle, wildlife professor at the University of Montana, indicates there has already been an 84% decline in sage grouse in the Powder River Basin.

Response: Comments noted. See response to comment SAS-002.

SAS-004: In addition to the negative impacts the extraction of coal for this plant will have on the landscape and wildlife populations in Wyoming, humans between Wyoming and Florida will also be negatively impacted. Orlando area residents may be willing to tolerate the disturbance caused by 2-3 coal trains per week. However, up the rail-line closer to the Powder River Basin, residents of towns and cities will experience many more coal trains as massive amounts of coal are transported to new plants in the Midwest and Eastern U.S. Rumbling, vibration, noise and engine warning-horns will disturb residents day and night. They will also have to endure increased daily delays at RR traffic crossings.

Response: See response to comment SAS-001.

SAS-005: Seminole Audubon Society does not believe that coal provides a rational energy plan for Orlando. We believe that utilizing local or regional energy sources will be much more efficient than importing coal from across the country. Florida is blessed with solar energy and our climate favors biomass resources. We believe a more responsible energy plan would accelerate the development of these local energy sources. Utilizing these cleaner, renewable resources would also favor both humans and wildlife with little or no negative impacts to the quality of life.

Response: Alternative technologies are discussed in Section 2.3.2.4.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

October 10, 2006

Mr. Richard A. Hargis
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochrans Mill Road
P.O. Box 10940
Pittsburgh, PA 15236

SUBJ: EPA Review and Comments on
Draft Environmental Impact Statement (DEIS)
Orlando Gasification Project
CEQ Number 20060349

Dear Mr. Hargis:

The U.S. Environmental Protection Agency (EPA), pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act, reviewed the subject DEIS for the Integrated Gasification Combined Cycle (IGCC) power plant proposed for Orlando, Florida. The purpose of this letter is to provide EPA's formal NEPA review comments on the U.S. Department of Energy's (DOE) DEIS regarding the proposed project.

DOE, pursuant to its Clean Coal Power Initiative (CCPI), selected the Southern Company, in partnership with the Orlando Utilities Commission (OUC), to demonstrate the IGCC technology. This demonstration project would determine if DOE should provide cost-share federal funding, and whether the technology is feasible for commercialization within the power generation industry. DOE is providing federal funding for the gasifier, synthesis gas cleanup systems and supporting infrastructure, with private funding provided for the combined cycle unit.

The IGCC would produce syngas from coal to provide fuel for a combined cycle combustion turbine component that will nominally generate 285 MW of electricity. This IGCC technology would have a substantial overall emissions reduction advantage (less sulfur dioxide [SO_2], oxides of nitrogen [NO_x] and mercury [Hg] emissions) when compared to conventional coal-fired power plants. As a combined cycle system, it would also reuse waste heat for additional electricity generation. Because of the emissions reduction aspect of the current IGCC technology as well as its waste heat reuse component, EPA supports its demonstration for potential commercial use. EPA-001

EPA provided DOE with NEPA scoping comments in a letter dated September 22, 2005. We appreciate DOE's early coordination with us, including a telephone conference during scoping. We also discussed the proposed project with the applicants during their presentation to us in Atlanta. For a previous IGCC design, EPA partnered with DOE in the early 1990's during the EIS development for another DOE IGCC demonstration – specifically for the Tampa Electric Company (TECO) power plant project in Polk County, Florida, pursuant to the DOE Clean Coal Technology (CCT) Program. However, the current CCPI demonstration is a different, more advanced IGCC than the Polk County CCT demonstration. EPA-002

If the current IGCC demonstration is successful, it could be used within the power generation industry at other facilities. However, if the demonstration is unsuccessful, EPA understands that the applicants are still committed to producing additional power. In that case, the Combined Cycle Combustion Turbine (CCCT) component of the proposed IGCC facility could be used as a fallback technology. Since the CCCT component is designed to burn natural gas as well as synfuel from the coal gasifier, the fallback technology would be to burn natural gas exclusively. We note that such a system would have similar or fewer emissions than the proposed IGCC. EPA-003

The proposed site (OUC's Stanton Energy Center [SEC] near Orlando) is an existing energy complex with two coal-fired units and a natural gas unit, and is capable of generating a total of 1,563 MW. Despite the emissions reduction advantages of an IGCC, locating the proposed project there would exacerbate existing power generation impacts. However, since the proposed project is to occupy some 35 acres within 1,100 acres that have been licensed by the State of Florida for power generation, the remaining 2,180 acres of undeveloped land within the overall complex could potentially serve as a buffer to development outside the complex. Because the demonstration project would be co-located with other existing power plant units, we have focused our comments on air quality (including air toxics) and cumulative impacts. Our detailed comments are enclosed. EPA-004

Based on EPA's review of the DEIS, the project received a rating of "EC-1," meaning that environmental concerns exist regarding aspects of the proposed project and some additional information is requested for the Final EIS (FEIS). (See enclosed Summary Of Rating Definitions And Follow Up Action.) Although we applaud the emissions reduction advantages of the IGCC, there are inherent environmental concerns of power stations and the cumulative impacts of the co-location of this demonstration at the SEC. Potential impacts of the proposed power plant include air quality, wetlands, hazardous waste, cumulative impacts, and other concerns. Evaluation of these impacts may require various forms of modeling and risk assessment and are discussed in our enclosed comments. EPA-005

We appreciate the opportunity to provide these comments, and appreciate your early coordination with us during the scoping process. If you have questions, please coordinate them with Ramona McConney (404/562-9615) or Chris Hoberg (404/562-9619).

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Enclosures: EPA review comments
Summary of Rating Definitions and Follow up Action

EPA's detailed comments on
Draft Environmental Impact Statement (DEIS)
Orlando Gasification Project
CEQ Number 20060349

Summary

In the DEIS Summary, the section on air quality mentions mercury, but only in the context of direct human inhalation. We recommend that acknowledgement be made of potential mercury bioaccumulation, and that a conclusion about bioaccumulation be stated consistent with the statements at the top of page 4-51 in Section 4.1.9.1. EPA-006

Air Emissions

Section 2.1.6.1, Table 2.1.3 (page 2-23) contains estimated air emissions for the project, however, it does not include an estimate for sulfuric acid mist emissions. If DOE wishes to add sulfuric acid mist emissions to Table 2.1.3, estimates can be found in the PSD permit application for the project. EPA-007

Air Quality Standards

In Section 3.2.2, Table 3.2.1, the cited 8-hour national ambient air quality standard for ozone is 157 $\mu g/m^3$. The actual standard found in 40 CFR 50.10 is 0.08 ppm. DOE might want to state in footnote "g" that the cited value in $\mu g/m^3$ is converted from the ppm standard. EPA-008

Although not essential, DOE might want to consider adding year 2005 monitored values to Table 3.2.1. EPA-009

In Table 3.2.2, change the row heading "Particulate matter less than 10 µm ..." to "Particulate matter less than or equal to 10 µm ...." EPA-010

On page 3-8 in the paragraph below Table 3.2.2, line 8, we recommend changing *"is attempted at emission sources"* to *"from stationary sources is."* The entire sentence would then read *"Regulation of hazardous air pollutants from stationary sources is based on the National Emissions Standards for Hazardous Air Pollutants (40 CFR Part 61; 40 CFR Part 63)."* EPA-011

PSD Permit

Section 4.1.2: The final prevention of significant deterioration (PSD) permit for this project is expected to be issued by the Florida Department of Environmental Protection (FDEP) by about the end of 2006. (The draft PSD permit was issued in July 2006 and the public comment period on the draft permit closed in April 2006.) If the final PSD permit is issued by FDEP prior to the completion of DOE's FEIS, we recommend that the FEIS contain a summary of emissions limits in the final PSD permit. EPA-012

Table 4.1.2 (page 4-9) contains the same typographical error in four of the column headings. The quantity unit "Φ/m^3" should be "$\mu g/m^3$". EPA-013

Air Quality - Ammonia

Section 4.1.9.1 covers criteria pollutants and hazardous air pollutants. Although not a listed criteria or hazardous air pollutant, ammonia could be released in small quantities (referred to as "ammonia slip") as part of routine operation from use of selective catalytic reduction (SCR) for control of nitrogen oxides emissions. Ammonia is mentioned in Section 4.1.9.2, but only in the context of potential accidental releases. We recommend adding a statement in Section 4.1.9.1 that any routine release of ammonia from use of SCR is expected to have negligible public health impacts. EPA-014

Air Toxics

Table D.15 addresses toxic air pollutants that may be emitted from the stack at full load. Although the DEIS does not address it, the Clean Air Mercury Rule, (published May 18, 2006; see 70 Federal Register 28606), established emissions of mercury as a primary chemical of concern from coal-fired power plants for human health and the environment. Coordination with the FDEP is necessary to appropriately handle new unit allocations under Florida's Clean Air Mercury Rule. EPA-015

Table D.15 also shows the refined AERMOD results for toxic air pollutants from the combustion of synthetic gas. This shows that the potential emissions from the new unit to be significantly less than reference concentrations (RfCs) and a cumulative cancer risk of one in one million. We note that toxicity values used in this evaluation appear to be limited to those currently in IRIS. However, EPA's Office of Air Quality Planning and Standards (OAQPS) has developed a more extensive list of recommended toxicity values for chemicals lacking an IRIS value (see Table 1, chronic toxicity values, at http://www.epa.gov/ttn/atw/toxsource/summary.html). We recommend that this set of OAQPS toxicity values be reviewed, and Table D.15 augmented to include additional (or updated) toxicity values as described in OAQPS Table 1. EPA-016

We also recommend that Section 4.1.10.1 be amended to include an assessment of air toxics impacts associated with construction activities. We also note that OAQPS Table 2 provides a listing of acute toxicity values. We recommend that the DOE use its modeling exercise and other appropriate information to evaluate the potential for acute air toxics impacts due to both construction and facility operation scenarios. EPA-017

Finally, Section 4.4.6.1 focuses on the potential impact of air emissions of a few chemicals (e.g., mercury, beryllium, sulfur dioxide, nitrogen dioxide, 10 micrometer particulate matter, and carbon dioxide) on ecological receptors. We recommend an explicit statement as to why the other air toxics associated with this project are not expected to adversely impact the environment (e.g., terrestrial and aquatic receptors). EPA-018

Air Quality: Stationary Sources, Mercury deposition

Section 4.1.2.2, Criteria Pollutants, Pages 4-6 thru 4-10: The DEIS presents the results of air dispersion modeling which was performed using the SCREEN3 and AERMOD models. The results of the modeling indicate that the predicted concentrations for the criteria pollutants are all below the PSD significant impact levels. A summary of the modeling procedures is contained in Appendix D of the DEIS. It appears that most of the modeling procedures were appropriate (with the exception of the issue discussed in the next paragraph). In order to verify that the correct procedures and input parameters were used, it would be helpful to have electronic copies of the input and output files from the modeling. Copies of all modeling files are typically provided on CDs or DVDs for permit applications. EPA-019

Appendix D, Pages D-11 thru D-13: The DEIS indicates that the surface characteristics (albedo, Bowen ratio, and surface roughness) used as inputs to AERMET were developed based on an analysis of the land-use surrounding the proposed IGCC site. However, EPA's AERMOD Implementation Guide recommends that surface characteristics representative of the National Weather Service (NWS) surface meteorological measurement site should generally be used in AERMET. For detailed information, see the following website: http://www.epa.gov/scram001/7thconf/aermod/aermod_implmtn_guide.pdf

EPA-020

The most important issue when selecting the appropriate surface characteristics is to be sure that they are representative of actual conditions. To quote the AERMOD Implementation Guide, *"The determination of representativeness will depend on a comparison of the surface characteristics (i.e., z_o, B_o and r) between the NWS site and the source location, coupled with a determination of the importance of those differences relative to predicted concentrations."* A detailed discussion of the issue of representativeness is available in the Implementation Guide. Additional justification for the surface characteristics used in the modeling for the DEIS should be provided by DOE. This would include comparison of the surface characteristics from the NWS met site with those at the proposed IGCC site. If the surface characteristics that were used in the modeling are not representative of the NWS meteorological site, then additional modeling may need to be conducted.

EPA-021

Section 4.1.2.2, Hazardous Air Pollutants, Pages 4-12, 4-13: The DEIS provides a good discussion of issues related to mercury deposition and references a number of recent studies on the subject. The question of how much mercury deposition results from nearby large emission sources is currently the subject of much debate. Since the time that the DEIS was prepared, a study sponsored by EPA was published on September 8, 2006, in *Environmental Science and Technology* (http://pubs.acs.org/cgi-bin/asap.cgi/esthag/asap/html/es060377q.html). This study indicates that mercury deposition from local coal burning power plants can be the dominant source in some situations. EPA suggests that a reference to this recent study and its conclusions be added to the discussion on pages 4-12 and 4-13 of the DEIS.

EPA-022

Section 4.1.2.2, Hazardous Air Pollutants, Page 4-17: The Draft EIS provides a comparison of the modeled reactive gaseous mercury (RGM) air concentrations and wet deposition rates with the actual monitoring data to provide context for the modeled values. Modeled RGM air concentrations can be correlated with dry deposition rates and are used as a surrogate for dry deposition rates because dry deposition monitoring data are not available (no reliable dry deposition monitoring methods currently exist). The modeled RGM concentrations are compared with RGM air concentration measurements that have been conducted during limited studies in Florida. The modeled RGM wet deposition rates are compared to measured wet deposition rates at a nearby Mercury Deposition Network (MDN) monitoring station. These comparisons indicate that the modeled RGM air concentrations and wet deposition rates are small in comparison to the actual monitored values.

EPA-023

It might also be helpful and provide additional context to the modeled values to compare the modeled wet and dry mercury deposition rates with the Community Multi-scale Air Quality (CMAQ) mercury deposition modeling that was done for the Clean Air Mercury Rule (CAMR). A Technical Support Document for the CAMR modeling is available on EPA's website (http://www.epa.gov/ttn/atw/utility/aqm_oar-2002-0056-6130.pdf). Figure 3 in this document indicates that the 2001 Base Case total mercury deposition was estimated to be 15-20 $\mu g/m^2$ for the Orlando area. A comparison of the AERMOD modeled RGM total deposition rates presented in the Draft EIS (< 1 $\mu g/m^2$ - see Table 4.1.6 in the DEIS) with the CMAQ results supports the conclusion presented in the DEIS that mercury deposition rates from the proposed IGCC facility are relatively small.

EPA-024

Additional information on the CMAQ modeling done for the CAMR is provided in another technical support document titled "Technical Support Document: Methodology Used to Generate Deposition, Fish Tissue Methylmercury Concentrations, and Exposure for Determining Effectiveness of Utility Emission Controls" available at: http://www.epa.gov/ttn/atw/utility/eff_fnl_tsd-031705_corr_oar-2002-0056-6301.pdf .

EPA-025

Construction Impacts

Construction impacts related to exhaust emissions from construction vehicles, equipment, and fugitive dust are disclosed in the document. It is suggested that DOE consider the use of diesel retrofit technologies, such as diesel oxidation catalysts, to reduce the air quality impacts of diesel powered equipment during the construction phase. The expected project construction time is estimated as beginning in late 2007 and continuing until early 2010 (Section 2.1.3). EPA-026

Pollution Prevention and Mitigation Measures

In Section 4.2, page 4-58, DOE states that the removal of fuel-bound nitrogen "would result in appreciably lower NO_x emissions compared to conventional coal-fired power plants." A state-of-the-art pulverized coal power plant burning the same type of western low-sulfur coal proposed for gasification at the OUC IGCC facility could probably achieve a NO_x emissions rate on the order of 0.05 to 0.06 lb/MMBtu (30-day average). Please check the proposed NO_x emissions rate for the proposed combined cycle unit during the demonstration phase, and confirm that this rate is "appreciably lower" than the rate for a state-of-the-art pulverized coal power plant boiler. We can provide this comparison if requested. EPA-027

In Table 4.2.1 (page 4-59), this statement appears: *"An extensive network of area air quality monitors would continually sample for H_2S and other compounds. Detection would trigger actions to eliminate equipment leaks."* EPA is not familiar with this proposed network. EPA recommends that DOE specify the approximate number of monitors and identify which "other compounds" will be monitored. EPA-028

Alternatives

"Clean coal technologies" refer to advanced coal utilization technologies that are environmentally cleaner, and in many cases, more efficient and less costly than conventional coal-utilization processes. The CCPI moves promising technologies from R&D to the commercial marketplace through demonstration. Successful demonstrations also help position the United States to supply advanced coal-fired combustion and pollution control technologies to a rapidly expanding world market. EPA-029

Two principal needs would be addressed by the proposed project: the Congressional mandate to demonstrate advanced coal-based technologies that can generate clean, reliable, and affordable electricity; second, the demonstration of a more cost-effective fuel supply for integration with a planned combined cycle unit to generate electricity. EPA-030

A variety of technical alternatives for the project are discussed in the DEIS as well as the site selection process for the preferred site. An alternative configuration of retrofitting and integrating the proposed Orlando Gasification Project with the existing SEC was evaluated. In addition, alternatives for the scale of the project were evaluated during the selection process. The No Action Alternative is also discussed in the document. EPA-031

Wetlands

The DEIS states that net wetland impacts would consist of 3.95 acres cleared, of which 1.04 acres would be filled. Measures to minimize direct and secondary impacts to wetlands are listed in the DEIS. A draft wetland mitigation plan with applicant commitments should be discussed in the FEIS, and finalized during the 404 permitting process. EPA-032

Hazardous Waste

During the operations phase of the project, the activated carbon sorbent used to remove mercury from gasification facility emissions and from sour water treatment would be tested to determine whether it requires management as a hazardous waste under RCRA. Coordination with FDEP and/or EPA is advised regarding hazardous waste issues. EPA-033

If any hazardous waste is discovered on the selected construction site, this issue should be reported to appropriate agencies and appropriately addressed prior to site clearing and plant construction. EPA-034

Other Wastes

Section 4.1.4.2, page 4-24: Please clarify whether the onsite septic system is used only for domestic waste. In addition, clarify the potential solid wastes which will be produced by the onsite coal-combustion process, and whether these wastes will be disposed of in the on-site landfill, or at another location. EPA-035

Environmental Justice (EJ)

Pg 3-31, Section 3.7.6: Based on the EJ data for the U.S., State of Florida, Orange County and Seven Census Tracts, the proposed project is located in 4 out of 7 census tracts that have minority populations that equal or exceed the State or Orange County minority population average. One of 7 census tracts exceed the State and Orange County poverty level. EPA-036

Other than providing demographic information, the EJ section was relatively vague on the magnitude and type of potential adverse impacts associated with the projects (i.e., truck traffic, odors, noise, air emissions). Based on the EJ information in the DEIS, it is difficult to independently assess the impacts of the project on the surrounding populations. In addition, the EJ section does not discuss efforts to engage these communities in the public involvement process, nor does it indicate whether these communities support the project or have concerns regarding the proposed expansion. EPA-037

EPA recommends that the FEIS discuss in more detail the type of impacts anticipated, the magnitude of these impacts, and efforts to incorporate EJ communities in the public involvement process and address any major concerns. Some of this information maybe available based on past experience with large, multi-year power plant construction and refurbishment projects in similar areas. It would also be helpful to include a map that shows the location of the proposed facility in relationship to the census tracts and major facilities (i.e. prison) described in the document. EPA-038

Indirect and Cumulative Impacts

EPA appreciates the discussion of indirect and cumulative impacts in Chapter 6 of the DEIS. Because the SEC is already a power plant complex, the proposed site would integrate with the existing infrastructure (e.g., roads and transmission lines). However, cumulative impacts from this proposed project and existing SEC power plant units could potentially impact natural resources and air quality. The resources and impact areas that were identified were: (1) atmospheric resources, including CO_2 emissions; (2) groundwater resources and related withdrawal issues; (3) social and economic resources and related traffic congestion issues; (4) noise issues; and (5) ecological resources, including wetland issues. EPA-039

DOE reviewed construction air permits issued after January 1, 2004, by the FDEP for facilities located within 50 kilometers (31 miles) of the SEC to identify other planned emission sources. Although 22 smaller (non-PSD) construction permits were issued, no larger (PSD) permits were issued during this period within 50 kilometers from the Stanton Energy Center. EPA-040

Construction and operation of the proposed facilities would combine with other ongoing and planned activities near the SEC to create cumulative impacts on the area's social and economic resources. The largest contribution to cumulative impacts from the proposed facilities would be the presence of 600 to 700 additional workers during the 9-month peak construction period. Other activities that would contribute to cumulative impacts include the ongoing and planned residential, commercial, and industrial developments north and south of the SEC and the planned Avalon Park Boulevard extension project north and west of the SEC. EPA-041

Since mercury impacts are typically a concern for any coal-based electric power generating project, the DOE should include a statement in the FEIS summarizing conclusions about mercury emissions to the atmosphere and subsequent deposition. EPA-042

Endangered Species

No federally-listed threatened or endangered species are known to occur within the immediate vicinity of the main proposed facilities or the transmission line interconnection. EPA defers to the U.S. Fish and Wildlife Service regarding potential project impacts to federally protected species. EPA-043

Since no liquid effluent would be discharged from the proposed project, there would be no thermal effluent effects on the Florida manatee. The DEIS states that neither bald eagles nor other threatened and/or endangered species are nesting on the proposed site. EPA-044

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS sate, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate
The EPA believes the DEIS adequately sets forth the environmental impact(s) of the preferred alterative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information
The DEIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the DEIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate
EPA does not believe that the DEIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the DEIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the DEIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised DEIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

United States Environmental Protection Agency

EPA-001: The IGCC would produce syngas from coal to provide fuel for a combined cycle combustion turbine component that will nominally generate 285 MW of electricity. This IGCC technology would have a substantial overall emissions reduction advantage (less sulfur dioxide [SO_2], oxides of nitrogen [NO,] and mercury [Hg] emissions) when compared to conventional coal-fired power plants. As a combined cycle system, it would also reuse waste heat for additional electricity generation. Because of the emissions reduction aspect of the current IGCC technology as well as its waste heat reuse component, EPA supports its demonstration for potential commercial use.

Response: Comments noted.

EPA-002: EPA provided DOE with NEPA scoping comments in a letter dated September 22, 2005. We appreciate DOE'S early coordination with us, including a telephone conference during scoping. We also discussed the proposed project with the applicants during their presentation to us in Atlanta. For a previous IGCC design, EPA partnered with DOE in the early 1990's during the EIS development for another DOE IGCC demonstration - specifically for the Tampa Electric Company (TECO) power plant project in Polk County, Florida, pursuant to the DOE Clean Coal Technology (CCT) Program. However, the current CCPI demonstration is a different, more advanced IGCC than the Polk County CCT demonstration.

Response: Comments noted.

EPA-003: If the current IGCC demonstration is successful, it could be used within the power generation industry at other facilities. However, if the demonstration is unsuccessful, EPA understands that the applicants are still committed to producing additional power. In that case, the Combined Cycle Combustion Turbine (CCCT) component of the proposed IGCC facility could be used as a fallback technology. Since the CCCT component is designed to burn natural gas as well as synfuel from the coal gasifier, the fallback technology would be to burn natural gas exclusively. We note that such a system would have similar or fewer emissions than the proposed IGCC.

Response: Comments noted.

EPA-004: The proposed site (OUC's Stanton Energy Center [SEC] near Orlando) is an existing energy complex with two coal-fired units and a natural gas unit, and is capable of generating a total of 1,563 MW. Despite the emissions reduction advantages of an IGCC, locating the proposed project there would exacerbate existing power generation impacts. However, since the proposed project is to occupy some 35 acres within 1,100 acres that have been licensed by the State of Florida for power generation, the remaining 2,180 acres of undeveloped land within the overall complex could potentially serve as a buffer to development outside the complex. Because the demonstration project would be co-located with other existing power plant units, we have focused our comments on air quality (including air toxics) and cumulative impacts.

Response: Comments noted.

EPA-005: Based on EPA's review of the DEIS, the project received a rating of "EC-1," meaning that environmental concerns exist regarding aspects of the proposed project and some additional information is requested for the Final EIS (FEIS). Although we applaud the emissions reduction advantages of the IGCC, there are inherent environmental concerns of power stations and the cumulative impacts of the co-location of this demonstration at the SEC. Potential impacts of the proposed power plant include air quality, wetlands, hazardous waste, cumulative impacts, and other concerns. Evaluation of these impacts may require various forms of modeling and risk assessment and are discussed in our enclosed comments.

Response: Comments noted. These potential impacts are addressed in the EIS and in response to the specific EPA comments that follow.

EPA-006: In the DEIS Summary, the section on air quality mentions mercury, but only in the context of direct human inhalation. We recommend that acknowledgement be made of potential mercury bioaccumulation, and that a conclusion about bioaccumulation be stated consistent with the statements at the top of page 4-51 in Section 4.1.9.1.

Response: Human exposures to mercury have two important exposure routes, inhalation of airborne mercury (which is generally only significant in occupational settings) and ingestion of methyl mercury in contaminated foodstuffs. In particular, fish serve as the main route of exposure to the general population (*Toxicological Profile for Mercury, Agency for Toxic Substances and Disease Registry*, U. S. Public Health Service, 1989). Expected plant emission rates do not pose an inhalation threat to Orlando area residents. Bioaccumulation of mercury in the food chain is of concern and efforts are underway to limit this route of exposure under the EPA's Clean Air Mercury Rule adopted by Florida in June 2006. The FEIS Summary has been revised to be consistent with the text in Section 4.1.9.1.

EPA-007: Section 2.1.6.1, Table 2.1.3 (page 2-23) contains estimated air emissions for the project; however, it does not include an estimate for sulfuric acid mist emissions. If DOE wishes to add sulfuric acid mist emissions to Table 2.1.3, estimates can be found in the PSD permit application for the project.

Response: Estimates of sulfuric acid mist emissions from the proposed facilities have been added to Table 2.1.3. Table 2.1.1, which includes air emissions of only criteria pollutants, their precursors, and CO_2, has not been changed.

EPA-008: In Section 3.2.2, Table 3.2.1, the cited 8-hour national ambient air quality standard for ozone is 157 $\mu g/m^3$. The actual standard found in 40 CFR 50.10 is 0.08 ppm. DOE might want to state in footnote "g" that the cited value in $\mu g/m^3$ is converted from the ppm standard.

Response: The suggested text has been added to footnote "g" of Table 3.2.1. In addition, the monitored values provided in the table have been changed from the 3rd and 4th highest values for each year to the 3-year average of the 4th-highest value to be consistent with the actual standard. As a result, there is one value shown that is higher than the standard, but - due to data handling conventions - does not represent an exceedance of the standard. This has been explained in the text in Section 3.2.2.

EPA-009: Although not essential, DOE might want to consider adding year 2005 monitored values to Table 3.2.1.

Response: Monitored values for the year 2005 have been added to Table 3.2.1. Monitored values for the year 2000 have been removed from Table 3.2.1 so that the table displays the most recent 5 years of data (2001-2005).

EPA-010: In Table 3.2.2, change the row heading "Particulate matter less than 10 μm ..." to "Particulate matter less than or equal to 10 μm."

Response: Because Table 3.2.2 currently reads "Particulate matter less than 10 μm aerodynamic diameter (PM-10)," the only change that has been added is the phrase "or equal to."

EPA-011: On page 3-8 in the paragraph below Table 3.2.2, line 8, we recommend changing "*is attempted at emission sources"* to "*from stationary sources is*." The entire sentence would then read "*Regulation of hazardous air pollutants from stationary sources is based on the National Emissions Standards for Hazardous Air Pollutants (40 CFR Part 61; 40 CFR Part 63*)."

Response: The text has been revised as suggested.

EPA-012: Section 4.1.2: The final prevention of significant deterioration (PSD) permit for this project is expected to be issued by the Florida Department of Environmental Protection (FDEP) by about the end of 2006. (The draft PSD permit was issued in July 2006 and the public comment period on the draft permit closed in August 2006.) If the final PSD permit is issued by FDEP prior to the completion of DOE'S FEIS, we recommend that the FEIS contain a summary of emissions limits in the final PSD permit.

Response: DOE agreed in a conference call with EPA on October 30, 2006, to include in the FEIS a summary of emissions limits from the final PSD permit, if available. The final PSD permit was issued on December 22, 2006. A summary of the emission limits from the final PSD permit is provided in Appendix G.

EPA-013: Table 4.1.2 (page 4-9) contains the same typographical error in four of the column headings. The quantity unit "Φ/m^{3}" should be "μg/m^{3}".

Response: Table 4.1.2 has been revised as suggested.

EPA-014: Section 4.1.9.1 covers criteria pollutants and hazardous air pollutants. Although not a listed criteria or hazardous air pollutant, ammonia could be released in small quantities (referred to as "ammonia slip") as part of routine operation from use of selective catalytic reduction (SCR) for control of nitrogen oxides emissions. Ammonia is mentioned in Section 4.1.9.2, but only in the context of potential accidental releases. We recommend adding a statement in Section 4.1.9.1 that any routine release of ammonia from use of SCR is expected to have negligible public health impacts.

Response: Although ammonia is not a criteria air pollutant or hazardous air pollutant, a concentration of ammonia on the order of 25 parts per million is known to produce transitory eye and respiratory tract irritation (*The AIHA 2001 Emergency Response Planning Guidelines*, American Industrial Hygiene Association Publication 455-EA-01). Ammonia that could be released in small quantities (referred to as "ammonia slip") from use in the selective catalytic reduction process for control of nitrogen oxide emissions is not expected to be sufficiently concentrated to produce these effects. The FDEP final PSD permit (Permit No. PSD-FL-373) includes an ammonia slip limit of 5.0 ppmvd corrected to 15% O_2 based on a 3-hour stack test. The FDEP final PSD permit ammonia limit includes the following footnote: "The SCR system shall be designed and operated for an ammonia slip limit of no more than 5 ppmvd corrected to 15% O_2 based on the average of three test runs. Notwithstanding this provision, ammonia slip may exceed 5 ppmvd but may not exceed 10 ppmvd corrected to 15% O_2 when the SCR system is voluntarily operated to reduce NOx emissions below 10 ppmvd."

Section 4.1.9.1 has been revised to include this text.

EPA-015: Table D.15 addresses toxic air pollutants that may be emitted from the stack at full load. Although the DEIS does not address it, the Clean Air Mercury Rule, (published May 18, 2006; see 70 Federal Register 28606), established emissions of mercury as a primary chemical of concern from coal-fired power plants for human health and the environment. Coordination with the FDEP is necessary to appropriately handle new unit allocations under Florida's Clean Air Mercury Rule.

Response: The Clean Air Mercury Rule (CAMR) has not yet been finalized as part of the Florida State Implementation Plan (SIP). On December 29, 2006, FDEP submitted their proposed Clean Air Mercury Rule (CAMR) implementation plan to EPA; EPA is expected to approve Florida's CAMR implementation plan in about 9 to 15 months. However, coordination between SCS/OUC and FDEP on this rule was initiated during the prevention of significant deterioration (PSD) permitting process. Section I (General Information) of the Final PSD Permit lists CAMR as a rule to which the proposed facilities may be subject, pending its finalization by FDEP. The permit also contains monitoring, record keeping, and reporting requirements for mercury associated with CAMR. FDEP, in a draft administrative order allocating mercury allowances for 2010, 2011, and 2012, shows a set aside of allowances for new units. Further coordination will continue as the rules are finalized.

EPA-016: Table D.15 also shows the refined AERMOD results for toxic air pollutants from the combustion of synthetic gas. This shows that the potential emissions from the new unit to be significantly less than reference concentrations (RfCs) and a cumulative cancer risk of one in one million. We note that toxicity values used in this evaluation appear to be limited to those currently in IRIS. However, EPA's Office of Air Quality Planning and Standards (OAQPS) has developed a more extensive list of recommended toxicity values for chemicals lacking an IRIS value (see Table 1, chronic toxicity values, at http://www.epa.gov/ttn/atw/toxsource/summary.html). We recommend that this set of OAQPS toxicity values be reviewed, and Table D.15 augmented to include additional (or updated) toxicity values as described in OAQPS Table 1.

Response: Both Table D.15 and Table D.16 have been augmented with values from the reference provided, as suggested.

EPA-017: We also recommend that Section 4.1.10.1 be amended to include an assessment of air toxics impacts associated with construction activities. We also note that OAQPS Table 2 provides a listing of acute toxicity values. We recommend that the DOE use its modeling exercise and other appropriate information to evaluate the potential for acute air toxics impacts due to both construction and facility operation scenarios.

Response: In a conference call on October 30, 2006, EPA agreed that modeling to quantify air toxics impacts due to construction activities was not required, but text has been added to Section 4.1.2.1 to (1) discuss the emissions qualitatively and (2) provide the distances to the nearest property boundary and the nearest residence.

For acute air toxics impacts due to facility operation, the maximum 1-hr average ambient concentrations predicted using AERMOD have been compared to values in the referenced table to confirm that acute air toxics impacts would be below the thresholds for acute impacts. Text has been added to Section 4.1.9.1 to note the results of this comparison.

EPA-018: Section 4.1.6 focuses on the potential impact of air emissions of a few chemicals (e.g., mercury, beryllium, sulfur dioxide, nitrogen dioxide, 10 micrometer particulate matter, and carbon dioxide) on ecological receptors. We recommend an explicit statement as to why the other air toxics associated with this project are not expected to adversely impact the environment (e.g., terrestrial and aquatic receptors).

Response: Section 4.1.6.1 (DEIS page 4-29) has been revised to specifically include the air toxics listed in Table 2.1.3.

EPA-019: Section 4.1.2.2, Criteria Pollutants, Pages 4-6 thru 4-10: The DEIS presents the results of air dispersion modeling which was performed using the SCREEN3 and AERMOD models. The results of the modeling indicate that the predicted concentrations for the criteria pollutants are all below the PSD significant impact levels. A summary of the modeling procedures is contained in Appendix D of the DEIS. It appears that most of the modeling procedures were appropriate (with the exception of the issue discussed in the next paragraph). In order to verify that the correct procedures and input parameters were used, it would be helpful to have electronic copies of the input and output files from the modeling. Copies of all modeling files are typically provided on CDs or DVDs for permit applications.

Response: DOE has forwarded copies of the modeling files to EPA Region IV.

EPA-020: Appendix D, Pages D-11 thru D-13: The DEIS indicates that the surface characteristics (albedo, Bowen ratio, and surface roughness) used as inputs to AERMET were developed based on an analysis of the land-use surrounding the proposed IGCC site. However, EPA's AERMOD Implementation Guide recommends that surface characteristics representative of the National Weather Service (NWS) surface meteorological measurement site should generally be used in AERMET. For detailed information, see the following website: http://www.epa.gov/scram001/7thconf/aermod/aermod_implmtn_guide.pdf

Response: During initial implementation of AERMOD, there was uncertainty and differing technical opinions regarding the best approach for selecting surface characteristics. Based on general discussions with FDEP meteorologists and other modeling professionals by ECT, the early consensus appeared to be the selection of surface characteristics representative of the project site as the best approach. As noted, EPA subsequently provided guidance on this issue in their AERMOD Implementation Guide dated September 27, 2005.

Although EPA suggested that surface characteristics should generally be taken from the measurement site in the AERMOD Implementation Guide, EPA did not state that the surface characteristics must come from the measurement site. This is demonstrated in the following quote from the Implementation Guide concerning one of the more important surface characteristics, "The surface roughness length…and therefore should generally be associated with the area surrounding the meteorological site." For these proposed facilities, surface characteristics from the project site and meteorological site were compared to establish representativeness. It was found that the surface characteristics impacting surface roughness length were comparable at the project and meteorological sites. Details of this comparison are discussed in the response to Comment EPA-21.

EPA-021: The most important issue when selecting the appropriate surface characteristics is to be sure that they are representative of actual conditions. To quote the AERMOD Implementation Guide, "*The determination of representativeness will depend on a comparison of the surface characteristics (i.e., z_o, $_{Bo}$ and r) between the NWS site and the source location, coupled with a determination of the importance of those differences relative to predicted concentrations.*" A detailed discussion of the issue of representativeness is available in the Implementation Guide. Additional justification for the surface characteristics used in the modeling for the DEIS should be provided by DOE. This would include comparison of the surface characteristics from the NWS met site with those at the proposed IGCC site. If the surface characteristics that were used in the modeling are not representative of the NWS meteorological site, then additional modeling may need to be conducted.

Response: An evaluation of representativeness between the Stanton Energy Center project site and the meteorological measurement site was performed. The project and meteorological sites are within 10 miles of one another and share similar terrain. According to population density, both sites are considered rural. Since surface roughness length is the most sensitive surface characteristic, it was evaluated first. The overall roughness of the terrain is similar for the Stanton project site and the meteorological site (Orlando International Airport). There are mostly grasses, low-level brush, and residential buildings surrounding the project site, while there are mostly grasses, runways, and low-level buildings surrounding the meteorological site. Both of these sites are open and not influenced by appreciably rough terrain features. It can therefore be assumed that surface roughness is comparable at the two sites. As the AERMOD Implementation Guide suggests, albedo and Bowen ratio do not have a strong influence on measured winds and can be determined from surface characteristics at the proposed project site. To more accurately depict the planetary boundary layer, surface characteristics at the project site were used to determine albedo and Bowen ratio. To be consistent, all the surface parameters were evaluated

at the project site providing the most accurate depiction of the planetary boundary layer surrounding the Stanton area.

EPA-022: Section 4.1.2.2, Hazardous Air Pollutants, Pages 4-12, 4-13: The DEIS provides a good discussion of issues related to mercury deposition and references a number of recent studies on the subject. The question of how much mercury deposition results from nearby large emission sources is currently the subject of much debate. Since the time that the DEIS was prepared, a study sponsored by EPA was published on September 8, 2006, in *Environmental Science and Technology* (http://pubs.acs.org/cgi-bin/asap.cgi/esthag/asap/html/es060377q.html). This study indicates that mercury deposition from local coal burning power plants can be the dominant source in some situations. EPA suggests that a reference to this recent study and its conclusions be added to the discussion on pages 4-12 and 4-13 of the DEIS.

Response: The issue of mercury deposition from nearby sources is currently the subject of much study and debate. The modeling study performed for the DEIS focused on emissions from the IGCC and demonstrates that the resulting maximum annual areal average RGM wet deposition is only 0.05% of the currently measured wet deposition rate in the area of the proposed project site. Other recent studies on this issue include the following:

Environmental Science and Technology (http://pubs.acs.org/cgi-bin/asap.cgi/esthag/asap/html/es060377q.html).

Edgerton, E. S., Hartsell, B. E., and Jansen, J. J., (2006). Mercury Speciation in Coal-fired Power Plant plumes Observed at Three Surface Sites in the Southeastern U.S. Environ. Sci. Technol.; ASAP Article 10.1021/es0515607 S0013-936X(05)01560-9

Lohman, K., Seigneur, C., and Jansen, J. (2006). Modeling Mercury in Power Plant Plumes. Environ. Sci. Technol.; vol. 40, no. 12, pp. 3848 - 3854

The above references have been added to the EIS and text has been added to Section 4.1.2.2.

EPA-023: Section 4.1.2.2, Hazardous Air Pollutants, Page 4-17: The Draft EIS provides a comparison of the modeled reactive gaseous mercury (RGM) air concentrations and wet deposition rates with the actual monitoring data to provide context for the modeled values. Modeled RGM air concentrations can be correlated with dry deposition rates and are used as a surrogate for dry deposition rates because dry deposition monitoring data are not available (no reliable dry deposition monitoring methods currently exist). The modeled RGM concentrations are compared with RGM air concentration measurements that have been conducted during limited studies in Florida. The modeled RGM wet deposition rates are compared to measured wet deposition rates at a nearby Mercury Deposition Network (MDN) monitoring station. These comparisons indicate that the modeled RGM air concentrations and wet deposition rates are small in comparison to the actual monitored values.

Response: Comments noted.

EPA-024: It might also be helpful and provide additional context to the modeled values to compare the modeled wet and dry mercury deposition rates with the Community Multi-scale Air Quality (CMAQ) mercury deposition modeling that was done for the Clean Air Mercury Rule (CAMR). A Technical Support Document for the CAMR modeling is available on EPA's website (http://www.epa.gov/ttn/atw/utility/aqm_oar-2002-0056-6130.pdf). Figure 3 in this document indicates that the 2001 Base Case total mercury deposition was estimated to be 15-20 µg/m^2 for the Orlando area. A comparison of the AERMOD modeled RGM total deposition rates presented in the Draft EIS (< 1 µg/m^2 - see Table 4.1.6 in the DEIS) with the CMAQ results supports the conclusion presented in the DEIS that mercury deposition rates from the proposed IGCC facility are relatively small.

Response: Text has been added to note that generic CMAQ modeling results would support the conclusions reached in the DEIS using the AERMOD model, in which mercury deposition rates from the proposed facilities were found to be relatively small.

No specific comparison between CMAQ and AERMOD was performed because the two models contain numerous differences in their inputs and execution (e.g., different meteorological data, different number of sources, different dispersion, different receptors, etc.). Accordingly, any comparison would be only superficial and would not be expected to affect the conclusions in the text of the EIS. The Air Quality Modeling Technical Support Document (TSD) for CAMR confirms that reactive gaseous mercury (RGM) is the most readily deposited form of mercury and that elemental mercury is not readily deposited but instead enters the global pool of mercury. The Orlando Gasification Project estimate for total RGM wet and dry deposition (i.e., 0.1374 ug/m2/yr) is well below the total mercury deposition rate of 15-20 ug/m2 predicted by CMAQ modeling for the central Florida area for both the 2001 base case and the 2020 post Clean Air Interstate Rule case.

EPA-025: Additional information on the CMAQ modeling done for the CAMR is provided in another technical support document titled "Technical Support Document: Methodology Used to Generate Deposition, Fish Tissue Methylmercury Concentrations, and Exposure for Determining Effectiveness of Utility Emission Controls" available at: http://www.epa.gov/ttn/atw/utility/eff_fnl_tsd-031705_corr_oar-2002-0056-6301.pdf.

Response: Comment noted.

EPA-026: Construction impacts related to exhaust emissions from construction vehicles, equipment, and fugitive dust are disclosed in the document. It is suggested that DOE consider the use of diesel retrofit technologies, such as diesel oxidation catalysts, to reduce the air quality impacts of diesel powered equipment during the construction phase. The expected project construction time is estimated as beginning in late 2007 and continuing until early 2010 (Section 2.1.3).

Response: As discussed in a conference call between DOE and EPA on October 30, 2006, specification of the use of diesel retrofit technologies is not warranted since impacts from diesel engines during construction are not expected to be a concern (see response to comment EPA-017). However, DOE will encourage SCS/OUC to

consider the use of biodiesel and diesel retrofit technologies during construction activities to further reduce impacts.

EPA-027: In Section 4.2, page 4-58, DOE states that the removal of fuel-bound nitrogen "would result in appreciably lower NO_x emissions compared to conventional coal-fired power plants." A state-of-the-art pulverized coal power plant burning the same type of western low-sulfur coal proposed for gasification at the OUC IGCC facility could probably achieve a NO_x emissions rate on the order of 0.05 to 0.06 lb/MMBtu (30-day average). Please check the proposed NO_x emissions rate for the proposed combined cycle unit during the demonstration phase, and confirm that this rate is "appreciably lower" than the rate for a state-of-the-art pulverized coal power plant boiler. We can provide this comparison if requested.

Response: Section 4.2 has been revised to clarify that the comparison is with existing coal-fired power plants rather than state-of-the-art power plants.

EPA-028: In Table 4.2.1 (page 4-59), this statement appears: "*An extensive network of area air quality monitors would continually sample for H2S and other compounds. Detection would trigger actions to eliminate equipment leaks*." EPA is not familiar with this proposed network. EPA recommends that DOE specify the approximate number of monitors and identify which "other compounds" will be monitored.

Response: Fugitive emissions of gaseous-phase compounds could be generated within the gasification island. The potential sources would be leaks from equipment such as valves, compressor seals, and flanges. These emissions would be minimized by good operating and maintenance practices. In addition, area gas detectors would be used to alert plant staff of fugitive gas emissions.

Gaseous-phase compounds to be monitored include: CO, H_2S, O_2, and LEL (lower explosive limit) gases.

The "air quality monitors" referred to in this EPA comment are the same as the "area gas detectors" described above. They are the same pieces of equipment and would be located strategically within the gasification structure itself. The final number of monitors has not yet been determined, but there would be a sufficient number to reflect good engineering practice. The statement in Table 4.2.1 has been changed to read "area gas detectors."

EPA-029: "Clean coal technologies" refer to advanced coal utilization technologies that are environmentally cleaner, and in many cases, more efficient and less costly than conventional coal-utilization processes. The CCPI moves promising technologies from R&D to the commercial marketplace through demonstration. Successful demonstrations also help position the United States to supply advanced coal-fired combustion and pollution control technologies to a rapidly expanding world market.

Response: Comments noted.

EPA-030: Two principal needs would be addressed by the proposed project: the Congressional mandate to demonstrate advanced coal-based technologies that can generate clean,

reliable, and affordable electricity; second, the demonstration of a more cost-effective fuel supply for integration with a planned combined cycle unit to generate electricity.

Response: Comments noted.

EPA-031: A variety of technical alternatives for the project are discussed in the DEIS as well as the site selection process for the preferred site. An alternative configuration of retrofitting and integrating the proposed Orlando Gasification Project with the existing SEC was evaluated. In addition, alternatives for the scale of the project were evaluated during the selection process. The No Action Alternative is also discussed in the document.

Response: Comments noted.

EPA-032: The DEIS states that net wetland impacts would consist of 3.95 acres cleared, of which 1.04 acres would be filled. Measures to minimize direct and secondary impacts to wetlands are listed in the DEIS. A draft wetland mitigation plan with applicant commitments should be discussed in the FEIS, and finalized during the 404 permitting process.

Response: OUC is currently working on a draft wetland mitigation plan. No details are available at this time. Once the plan is finalized, it will be included in the 404 permit application and sent to the appropriate federal and state agencies for their review and approval.

EPA-033: During the operations phase of the project, the activated carbon sorbent used to remove mercury from gasification facility emissions and from sour water treatment would be tested to determine whether it requires management as a hazardous waste under RCRA. Coordination with FDEP and/or EPA is advised regarding hazardous waste issues.

Response: Comment noted. Section 7.1 provides a broad outline of RCRA requirements applicable to the proposed action.

EPA-034: If any hazardous waste is discovered on the selected construction site, this issue should be reported to appropriate agencies and appropriately addressed prior to site clearing and plant construction.

Response: Comment noted. Section 4.1.8.1 states that if buried hazardous waste is discovered during construction, the waste would be reported to appropriate agencies and removed using a commercial hazardous waste management contractor.

EPA-035: Section 4.1.4.2, page 4-24: Please clarify whether the onsite septic system is used only for domestic waste. In addition, clarify the potential solid wastes which will be produced by the onsite coal-combustion process, and whether these wastes will be disposed of in the on-site landfill, or at another location.

Response: As described in Section 2.1.6.2, the onsite septic system would be used only for domestic and sanitary wastewater generated by site personnel. Sections 2.1.6.3 and 4.1.8.2 discuss the proposed management of gasification ash and other solid wastes

produced by operations. The proposed facility operations would not include coal combustion. The coal-combustion ash landfill mentioned in Section 4.1.4.2 is the existing onsite landfill that receives coal-combustion ash from the two coal-fired generating units currently operating at the Stanton Energy Center and that would also receive some project solid wastes.

EPA-036: Pg 3-31, Section 3.7.6: Based on the EJ data for the U.S., State of Florida, Orange County and Seven Census Tracts, the proposed project is located in 4 out of 7 census tracts that have minority populations that equal or exceed the State or Orange County minority population average. One of 7 census tracts exceed the State and Orange County poverty level.

Response: Section 3.7.6 acknowledges that Orange County and most of the seven census tracts have higher minority percentages than the state of Florida and the United States. Census Tract 167.22, which includes the population of the Florida Department of Corrections' Central Florida Reception Center, has a slightly higher minority percentage than Orange County, and a much higher minority percentage than Florida and the United States. Conversely, Orange County and six of the seven census tracts have lower percentages of people below the poverty level than the state of Florida and the United States. Census Tract 167.22 has a much lower percentage of people below the poverty level than Orange County, the state of Florida, and the United States.

EPA-037: Other than providing demographic information, the EJ section was relatively vague on the magnitude and type of potential adverse impacts associated with the projects (i.e., truck traffic, odors, noise, air emissions). Based on the EJ information in the DEIS, it is difficult to independently assess the impacts of the project on the surrounding populations. In addition, the EJ section does not discuss efforts to engage these communities in the public involvement process, nor does it indicate whether these communities support the project or have concerns regarding the proposed expansion.

Response: Section 4.1.7.6 has been revised to focus the analysis of environmental justice impacts on the resource areas of greatest concern (land use/aesthetics, air quality/odors, water quality, health effects, noise, and socioeconomics). In addition, DOE's efforts to engage minority and low-income communities during the NEPA process have been more clearly described.

EPA-038: EPA recommends that the FEIS discuss in more detail the type of impacts anticipated, the magnitude of these impacts, and efforts to incorporate EJ communities in the public involvement process and address any major concerns. Some of this information may be available based on past experience with large, multi-year power plant construction and refurbishment projects in similar areas. It would also be helpful to include a map that shows the location of the proposed facility in relationship to the census tracts and major facilities (i.e. prison) described in the document.

Response: See response to comment EPA-037. Section 3.7.6 has been revised to include a map that shows the location of the proposed facilities relative to the census tracts evaluated and other major facilities.

EPA-039: EPA appreciates the discussion of indirect and cumulative impacts in Chapter 6 of the DEIS. Because the SEC is already a power plant complex, the proposed site would integrate with the existing infrastructure (e.g., roads and transmission lines). However, cumulative impacts from this proposed project and existing SEC power plant units could potentially impact natural resources and air quality. The resources and impact areas that were identified were: (1) atmospheric resources, including CO_2 emissions; (2) groundwater resources and related withdrawal issues; (3) social and economic resources and related traffic congestion issues; (4) noise issues; and (5) ecological resources, including wetland issues.

Response: Comments noted. Section 6 addresses these potential cumulative impacts.

EPA-040: DOE reviewed construction air permits issued after January 1, 2004, by the FDEP for facilities located within 50 kilometers (31 miles) of the SEC to identify other planned emission sources. Although 22 smaller (non-PSD) construction permits were issued, no larger (PSD) permits were issued during this period within 50 kilometers from the Stanton Energy Center.

Response: Comments noted.

EPA-041: Construction and operation of the proposed facilities would combine with other ongoing and planned activities near the SEC to create cumulative impacts on the area's social and economic resources. The largest contribution to cumulative impacts from the proposed facilities would be the presence of 600 to 700 additional workers during the 9-month peak construction period. Other activities that would contribute to cumulative impacts include the ongoing and planned residential, commercial, and industrial developments north and south of the SEC and the planned Avalon Park Boulevard extension project north and west of the SEC.

Response: Comments noted. Section 6 addresses potential cumulative impacts, including those indicated in the comment.

EPA-042: Since mercury impacts are typically a concern for any coal-based electric power generating project, the DOE should include a statement in the FEIS summarizing conclusions about mercury emissions to the atmosphere and subsequent deposition.

Response: Text addressing this concern has been added to the EIS Summary.

EPA-043: No federally-listed threatened or endangered species are known to occur within the immediate vicinity of the main proposed facilities or the transmission line interconnection. EPA defers to the U.S. Fish and Wildlife Service regarding potential project impacts to federally protected species.

Response: Comments noted. Section 4.1.6.3 addresses potential impacts to threatened and endangered species. A consultation letter from the USF&WS is provided in Appendix A.

EPA-044: Since no liquid effluent would be discharged from the proposed project, there would be no thermal effluent effects on the Florida manatee. The DEIS states that neither bald eagles nor other threatened and/or endangered species are nesting on the proposed site.

Response: Comments noted. Section 4.1.6.3 addresses potential impacts to threatened and endangered species.

ORANGE COUNTY--COUNTY ATTORNEY'S OFFICE
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October 10, 2006

Mr. Richard A. Hargis, Jr., Document Manager
National Environmental Policy Act (NEPA)
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochrans Mill Road
P.O. Box 10940
Pittsburgh, Pennsylvania 15236-0940

RE: Orange County's Comments on Draft Environmental Impact Statement (EIS) for the Orlando Gasification Project, OUC Stanton Energy Center Unit B, dated August 2006

Dear Mr. Hargis:

Below are the official comments of Orange County regarding the Draft EIS for the subject project.

Air Quality Management Section Comments

1. Recycling ammonia back to the gasifier for destruction is discussed on Page 2-12. This is the first discussion we have seen of this procedure. Recycling ammonia as described should only be done as a last resort, such as when storage tanks are full and no offsite transport is available. The result of the procedure appears to be decomposition and oxidation of the ammonia in the gasifier. We believe this would further result in significant increases in the nitrogen in the syngas and the unit's NOx emission rate and it is unclear what the overall impact of this would be. Consequently, we believe that additional ammonia storage capacity should be required to eliminate this possibility. OC-001

2. The Draft EIS indicates on Page 4-44 that carbon contaminated with mercury may not be a hazardous waste. The wastes to be disposed of at the solid waste disposal unit are sulfur and ashes, which are considered industrial wastes, and activated carbon contaminated with mercury, which Orange County does consider a hazardous waste. We believe the solid waste disposal unit must comply with the design criteria for a Class I landfill and the requirements included in Chapter 32, Article V of the Orange County Code for this solid waste management facility. OC-002

3. Section 3.1.2, Land Use, discusses land use and planned development around Stanton, but does not adequately discuss the planned Innovation Way development by Orange County in that area and also incorrectly identifies such development as that of International Corporate Park in some sentences. OC-003

4. The air quality data presented in Table 3.2.1 is only for the years 2000 to 2004. This data set obviously omits years 1997 through 1999 and 2005 during which a number of exceedances of the current 8-hour ozone standard were measured in the county. For the past 10 years, we have recorded at least one 8-hour average ozone reading above 80 ppb every year. We are concerned that Orange County may exceed the 8-hour ozone National Ambient Air Quality Standard (NAAQS). A number of our 2004 and 2005 8-hour average ambient ozone concentrations have exceeded the NAAQS standard for ozone. In fact, if our fourth highest 8-hour average ozone concentration in 2006 exceeds 94 ppb, Orange County will have exceeded the 0.08 ppm ozone NAAQS standard in a rolling three year average and may be reclassified as a non-attainment area. OC-004

5. Mercury atmospheric dispersion and deposition modeling is discussed at length in the Draft EIS. The emphasis is on the resultant ambient concentration predicted by dispersion modeling for the IGCC unit. Mercury emissions from the IGCC stack are expected to be about 20 lb/yr, after removal of 90% of mercury in the IGCC's mercury control system. Mercury emissions from the existing plant are about 0.1 TPY or about 200 lb/year, according to annual operating reports of emissions from the facility. The predicted mercury emissions from the IGCC unit are small compared to actual mercury emissions from the existing units. Modeled county-wide annual average ambient concentrations from existing major and area sources combined (7.6×10^{-5} micrograms/m^3) are small compared to the background concentration of 1.5×10^{-3} micrograms/m^3. It appears that mercury emissions from the IGCC unit will be small compared to emissions from existing units, and the mercury emissions from the existing units are small compared to the background concentrations of mercury. Predicted mercury deposition rates are also low. If this analysis is correct, ambient mercury concentrations due to the existing units are not a concern, and ambient mercury concentrations due to the IGCC unit will not be significant. However, we note that elevated levels of mercury have been observed in Lake Hart, approximately 7 miles south-southwest of Stanton. Stanton has been thought in the past to be the source of the mercury, but the mercury analysis presented in the Draft EIS does not seem to support this hypothesis. We request that the analysis be reviewed to verify the accuracy of the original conclusion. OC-005

6. Offsite transportation of sulfur, ammonia and ash by truck on Alafaya Trail may cause traffic congestion, as noted in the Draft EIS in Section 4.1.7.7. The Draft EIS also notes that offsite transportation by rail would have a minimal effect on rail traffic. Consequently, we believe that all offsite transportation of sulfur, ammonia and ash should be done by rail to the maximum extent practicable. OC-006

7. Greenhouse gas emissions, particularly CO_2, have become an increasing concern for Orange County. We believe that this issue is not adequately addressed in the Draft EIS. We believe that the impacts of CO_2 emissions from Stanton should be fully addressed in the final EIS. Stanton has always been the largest point source of CO_2 emissions in the county and the addition of Unit B makes this situation even worse. Concerned citizens and environmental activist groups are pressing for local adoption of Kyoto Protocol targets by the county. The Kyoto targets are a reduction in CO_2 emissions to 1990 levels by 2012. Expansion of Stanton since 1990, by the addition of Units 2 and A and the planned addition of Unit B, make achieving the Kyoto targets very difficult. We believe that OUC should consider CO_2 removal and sequestration for all units at Stanton. CO_2 removal and sequestration should be easier for Unit B than for the other units at Stanton. We request that the final EIS consider the costs, impacts, and benefits of carbon sequestration for Unit B, as well as consider the purchase of carbon credits in the financial markets for Unit B and the existing units. OC-007

Natural Resource Management Section Comments

1. Section 4.1.5.2 of the Draft EIS (Page 4-27) indicates that 3.95 acres of wetlands will be impacted by the proposed transmission line corridor, with 1.04 acres of the 3.95 actually being filled and the remainder being cleared and maintained. We are surprised and concerned by this information as we have been advised previously by OUC that only 1 acre total would be impacted. OC-008

2. Section 4.1.4.2 of the Draft EIS (Page 4-24) states that groundwater withdrawals would increase by 100,000 gallons per day with the addition of the new facility and that total withdrawals from onsite wells would be 540,000 gallons per day. The Draft EIS further states that the current permitted withdrawal rate is 2,000,000 gallons per day. We do not dispute these figures, but note that they are based on old, out of date modeling and evaluation and that new modeling and evaluation should be conducted to ascertain the true, current impact of groundwater withdrawal. OC-009

Water Reclamation Division Comments

1. On numerous occasions, the Draft EIS refers to "wastewater effluent" or "treated effluent"; we note that these are not accurate technical descriptions of the water proposed to be drawn from Orange County's Eastern Water Reclamation Facility. Rather, the proper term is "reclaimed water" and we request that this be substituted for "wastewater effluent" or "treated effluent" wherever those terms are used. OC-010

2. The Draft EIS (at second sentence of Section 4.1.4.1 and entire first paragraph on Page 4-23) states that facility operations would indirectly affect water volumes in the Econlockhatchee River and in wetlands downstream of the Orange County Eastern Water Reclamation Facility. We dispute this statement and its supporting information on Page 4-23 and request that the entire paragraph on Page 4-23 and the sentence on Page 4-22 be stricken. The fact is we do not know whether the additional water proposed to be used by Stanton Unit B from the Eastern Water Reclamation Facility will have any effect at all on discharges to the Econlockhatchee River or the downstream wetlands. The information cited in the Draft EIS as coming from T. Madhanagopal and M. Gant of Orange County Utilities was not accurately reported and, indeed, was taken out of context. Consequently, for the sake of accuracy, the above noted sections should be removed. OC-011

Very truly yours,

Allen G. Erickson
Assistant County Attorney

AGE/jps

CC: Anthony J. Cotter, Assistant County Attorney
Lori Cunniff, Manager, Environmental Protection Division
Tracy Lewis, Chief Engineer, Utilities Engineering
John Kasper, Engineer, Environmental Protection Division

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Orange County, Florida, County Attorney's Office

OC-001: Recycling ammonia back to the gasifier for destruction is discussed on Page 2-12. This is the first discussion we have seen of this procedure. Recycling ammonia as described should only be done as a last resort, such as when storage tanks are full and no offsite transport is available. The result of the procedure appears to be decomposition and oxidation of the ammonia in the gasifier. We believe this would further result in significant increases in the nitrogen in the syngas and the unit's NOx emission rate and it is unclear what the overall impact of this would be. Consequently, we believe that additional ammonia storage capacity should be required to eliminate this possibility.

Response: Recycling of ammonia back to the gasifier would not increase the NOx emissions from Unit B. The syngas ammonia concentration is not affected by ammonia injection into the gasifier due to the complete decomposition of the ammonia in the gasifier mixing zone. To confirm the expected chemical decomposition reactions of ammonia, tests were conducted at the Power Systems Development Facility in 2006. Anhydrous ammonia was injected into the gasifier mixing zone at varying concentrations to evaluate the impact on ammonia concentration in the syngas. During these tests, the ammonia concentration did not change at the gasifier exit as compared to normal operation without additional ammonia injection. Also, there was no indication of any NOx at the gasifier exit or increased NOx concentration at the atmospheric syngas combustor exit. It is anticipated the ammonia recycle would only be used when the storage tank is nearing full capacity and offsite transportation is unavailable.

The design basis for the ammonia storage tank would be approximately 3 days production from the gasifier. Adding ammonia storage capacity to minimize operations with ammonia recycle is not warranted and would increase the risks associated with potential ammonia releases.

OC-002: The DEIS indicates on Page 4-44 that carbon contaminated with mercury may not be a hazardous waste. The wastes to be disposed of at the solid waste disposal unit are sulfur and ashes, which are considered industrial wastes, and activated carbon contaminated with mercury, which Orange County does consider a hazardous waste. We believe the solid waste disposal unit must comply with the design criteria for a Class I landfill and the requirements included in Chapter 32, Article V of the Orange County Code for this solid waste management facility.

Response: As discussed in Sections 2.1.6.4 and 4.1.8.2, the activated carbon used for mercury removal would not be disposed in the onsite landfill, but would be managed offsite, either by the manufacturer or by a commercial hazardous waste contractor. The discussion in Section 4.1.8.2 that is cited in this comment describes and discusses published research findings that suggest that the impacts of managing this material would be small, even if it were managed in the onsite landfill. Section 4.1.8.2 has been revised to clarify that this is not the proposed method for managing this material. The onsite landfill is regulated by FDEP under the Stanton Energy Center Conditions of Certification issued in accordance with the Florida Power Plant Siting Act. As discussed in Section 7.2, the site certification process under the Power Plant Siting Act supersedes separate state, regional, and local permitting processes, but the project proponent must demonstrate that applicable regulations and standards will be

fulfilled. The current Conditions of Certification for the Stanton Energy Center authorize use of the onsite landfill for disposal of ash and scrubber sludge from existing generating units. Disposal of wastes from the proposed facilities would require additional authorizations, which would be included in revised Conditions of Certification. The project proponent is seeking authorization for onsite disposal of gasification ash and sulfur, but not spent activated carbon from the mercury removal process.

OC-003: Section 3.1.2, Land Use, discusses land use and planned development around Stanton, but does not adequately discuss the planned Innovation Way development by Orange County in that area and also incorrectly identifies such development as that of International Corporate Park in some sentences.

Response: Section 3.1.2 describes the land use as it currently exists. Section 4.1.1.1 discusses the land use impacts of constructing and operating the proposed facilities. Section 4.1.7.7 mentions the beneficial effects of the planned Innovation Way during operation of the proposed facilities. Section 6 discusses the cumulative effects of the proposed facilities and the planned Innovation Way. It is DOE's understanding that "Innovation Way" refers to the planned roadway extension of Avalon Park Boulevard, while "International Corporate Park" refers to a Planned Development of mixed industrial and commercial uses.

OC-004: The air quality data presented in Table 3.2.1 is only for the years 2000 to 2004. This data set obviously omits years 1997 through 1999 and 2005 during which a number of exceedances of the current 8-hour ozone standard were measured in the county. For the past 10 years, we have recorded at least one 8-hour average ozone reading above 80 ppb every year. We are concerned that Orange County may exceed the 8-hour ozone National Ambient Air Quality Standard (NAAQS). A number of our 2004 and 2005 8-hour average ambient ozone concentrations have exceeded the NAAQS standard for ozone. In fact, if our fourth highest 8-hour average ozone concentration in 2006 exceeds 94 ppb, Orange County will have exceeded the 0.08 ppm ozone NAAQS standard in a rolling three year average and may be reclassified as a non-attainment area.

Response: The meteorological dataset has been changed to include the 5-year period from 2000-2005, and text has been added in Section 3.2.2 to address the above concern.

OC-005: Mercury atmospheric dispersion and deposition modeling is discussed at length in the DEIS. The emphasis is on the resultant ambient concentration predicted by dispersion modeling for the IGCC unit. Mercury emissions from the IGCC stack are expected to be about 20 lb/yr, after removal of 90% of mercury in the IGCC's mercury control system. Mercury emissions from the existing plant are about 0.1 TPY or about 200 lb/year, according to annual operating reports of emissions from the facility. The predicted mercury emissions from the IGCC unit are small compared to actual mercury emissions from the existing units. Modeled county-wide annual average ambient concentrations from existing major and area sources combined (7.6×10^{-5} micrograms/m^3) are small compared to the background concentration of 1.5×10^{-3} micrograms/m^3. It appears that mercury emissions from the IGCC unit will be small compared to emissions from existing units, and the mercury emissions from the existing units are small compared to the background concentrations of mercury. Predicted mercury deposition rates are also

low. If this analysis is correct, ambient mercury concentrations due to the existing units are not a concern, and ambient mercury concentrations due to the IGCC unit will not be significant. However, we note that elevated levels of mercury have been observed in Lake Hart, approximately 7 miles south-southwest of Stanton. Stanton has been thought in the past to be the source of the mercury, but the mercury analysis presented in the DEIS does not seem to support this hypothesis. We request that the analysis be reviewed to verify the accuracy of the original conclusion.

Response: The analysis has been reviewed and the accuracy of the conclusion has been verified.

OC-006: Offsite transportation of sulfur, ammonia and ash by truck on Alafaya Trail may cause traffic congestion, as noted in DEIS Section 4.1.7.7. The DEIS also notes that offsite transportation by rail would have a minimal effect on rail traffic. Consequently, we believe that all offsite transportation of sulfur, ammonia and ash should be done by rail to the maximum extent practicable.

Response: Methods of transportation for these materials, as well as other materials and equipment, either to or from the site, will be subject to many factors, including, by way of example, availability, logistics and economics. Therefore, it is not possible at this time to state that any particular mode of transport will be used to the maximum extent practicable. However, DOE will consider adopting such a condition as a mitigation measure in the Record of Decision.

OC-007: Greenhouse gas emissions, particularly CO_2, have become an increasing concern for Orange County. We believe that this issue is not adequately addressed in the DEIS. We believe that the impacts of CO_2 emissions from Stanton should be fully addressed in the FEIS. Stanton has always been the largest point source of CO_2 emissions in the county and the addition of Unit B makes this situation even worse. Concerned citizens and environmental activist groups are pressing for local adoption of Kyoto Protocol targets by the county. The Kyoto targets are a reduction in CO_2 emissions to 1990 levels by 2012. Expansion of Stanton since 1990, by the addition of Units 2 and A and the planned addition of Unit B, make achieving the Kyoto targets very difficult. We believe that OUC should consider CO_2 removal and sequestration for all units at Stanton. CO_2 removal and sequestration should be easier for Unit B than for the other units at Stanton. We request that the FEIS consider the costs, impacts, and benefits of carbon sequestration for Unit B, as well as consider the purchase of carbon credits in the financial markets for Unit B and the existing units.

Response: See response to comment RS-004. As stated in Section 4.2, mitigation of carbon dioxide emissions through carbon capture and sequestration is not technically feasible for this project. Likewise, the purchase of carbon credits would be an undue burden on the economics of this project and is not being pursued in the absence of regulations regarding emissions of carbon dioxide.

Cumulative emissions of CO_2 from all units at the Stanton Energy Center have been added to the text in Section 6

OC-008: Section 4.1.5.2 of the DEIS (Page 4-27) indicates that 3.95 acres of wetlands will be impacted by the proposed transmission line corridor, with 1.04 acres of the 3.95 actually being filled and the remainder being cleared and maintained. We are surprised and

concerned by this information as we have been advised previously by OUC that only 1 acre total would be impacted.

Response: Comment noted. The information provided on DEIS page 4-27 is generally consistent with that given in Sections 6.1.7.2 and 6.1.8.2 of the Supplemental Site Certification Application (February 2006); both documents state that approximately 4 acres of wetlands would potentially be impacted by construction of the proposed transmission corridor and that approximately one acre would be filled.

OC-009: Section 4.1.4.2 of the DEIS (Section 4-24) states that groundwater withdrawals would increase by 100,000 gallons per day with the addition of the new facility and that total withdrawals from onsite wells would be 540,000 gallons per day. The DEIS further states that the current permitted withdrawal rate is 2,000,000 gallons per day. We do not dispute these figures, but note that they are based on old, out of date modeling and evaluation and that new modeling and evaluation should be conducted to ascertain the true, current impact of groundwater withdrawal.

Response: DOE believes that the modeling of potential groundwater impacts described in Section 4.1.4.2 is sufficient to estimate the amount of lowering of the water table (i.e., potentiometric surface) that could result from Stanton Energy Center's groundwater pumping. The modeling relied upon in the Draft EIS was completed in 2001 to support the site certification for Stanton Unit A. It employed baseline hydrogeologic data and modeling tools (for example, the USGS MODFLOW modular 3-dimensional finite difference groundwater flow model) that are still considered current and valid (Barlow and Harbaugh). There is no technical reason to repeat this modeling effort for this proposed action. The implications of changes in regional groundwater conditions that may have occurred since 2001 are considered in Chapter 6 (Cumulative Effects), where potential contributions of the proposed action to cumulative impacts on regional groundwater conditions are discussed. As discussed in that chapter, the potentiometric surface in the Upper Floridan aquifer has been declining, and is expected to continue to decline, due to increased groundwater pumping in the surrounding region. Lowering of the potentiometric surface is, in turn, causing reduced flow to springs and increasing the potential for saline or brackish water to migrate into water-supply aquifers. As stated in Chapter 6, groundwater use by the proposed facilities would contribute to this regional trend, and water use for the proposed facilities is already accounted for in the St. Johns River Water Management District's assessments of regional water supply.

OC-010: On numerous occasions, the DEIS refers to "wastewater effluent" or "treated effluent;" we note that these are not accurate technical descriptions of the water proposed to be drawn from Orange County's Eastern Water Reclamation Facility. Rather, the proper term is "reclaimed water" and we request that this be substituted for "wastewater effluent" or "treated effluent" wherever those terms are used.

Response: "Reclaimed water" is a general term for wastewater that is treated so that it can be reused (http://www.awwa.org/Advocacy/pressroom/reclaimed.cfm). Because the Stanton Energy Center uses reclaimed water from several different sources (including Orange County's Eastern Water Reclamation Facility, the county municipal landfill, and onsite sources), for clarity the EIS uses terminology more specific than "reclaimed water" when describing or discussing any particular reclaimed water supply,

including the supply from the Eastern Water Reclamation Facility. As appropriate, DOE has nonetheless made the requested substitution of terms.

OC-011: The DEIS (at second sentence of Section 4.1.4.1 and entire first paragraph on Page 4-23) states that facility operations would indirectly affect water volumes in the Econlockhatchee River and in wetlands downstream of the Orange County Eastern Water Reclamation Facility. We dispute this statement and its supporting information on Page 4-23 and request that the entire paragraph on Page 4-23 and the sentence on Page 4-22 be stricken. The fact is we do not know whether the additional water proposed to be used by Stanton Unit B from the Eastern Water Reclamation Facility will have any effect at all on discharges to the Econlockhatchee River or the downstream wetlands. The information cited in the DEIS as coming from T. Madhanagopal and M. Gant of Orange County Utilities was not accurately reported and, indeed, was taken out of context. Consequently, for the sake of accuracy, the above noted sections should be removed.

Response: DOE is obliged to assess the potential environmental impacts of the proposed action using the best information available. Therefore, the fact that Orange County does not know whether the proposed water use would have an effect on discharges is not a sufficient reason for DOE to remove the discussion of the potential impact from the EIS. However, the wording of the DEIS discussion cited in the comment was perhaps misleading, as it incorrectly implied that the Orange County Utilities staff members were the source of a conclusion. In fact, the Orange County Utilities staff supplied information used by DOE in assessing potential impacts. Accordingly, DOE has revised this discussion to more accurately represent the information supplied by Orange County Utilities and the way that DOE used this information in its analysis.