

Comment: Page 8-61, Line # 7

Insert the word "direct" between "few" and "environmental." (TPD62-42)

Response: *The comments are noted. The comments resulted in modification of the SEIS text.*

Comment: Page 5-23, 1st paragraph under Sec. 5.2.6.2 2nd line

Strike the words "Although there could have been more attention given to evaluating actual costs." (TPD62-38)

Response: *The comment is noted. The staff rejects the proposed change in wording. The staff still believes more attention could have been given by the licensee in evaluating costs. No new information was provided by the comment. Therefore, the comment will not be evaluated further. This comment did not result in a change to the text of the SEIS.*

Comment: Page 5-10, Line # 8-15

Modify the wording to read as follows: "The FPL approach in doubling of core damage frequency to account for the calculated benefits for external events provides a numerically reasonable estimate of the potential impact of external events. The staff believes the search for external event vulnerabilities as a part of the Turkey Point IPEEE, did not identify any risk contributors that would benefit from potential SAMAs and considers the FPL approach to be adequate." (TPD62-33)

Response: *The comment is noted. The staff rejects the proposed change in wording. The staff continues to believe that doubling the core damage frequency fails to capture the true benefit that could result from a specific SAMA. No new information was provided by the comment. Therefore, the comment will not be evaluated further. This comment did not result in a change to the text of the SEIS.*

Comment: Page 5-14, Line # 12-18

Strike the sentences beginning with "The preliminary review" on line 12 and ending with "modeled in the current PSA" on line 18. (TPD62-34)

Response: *The comment is noted. The staff rejects the proposed change in wording. The wording in the draft SEIS accurately describes the staff's review. No new information was provided by the comment. Therefore, the comment will not be evaluated further. This comment did not result in a change to the text of the SEIS.*

Appendix A

| **Comment:** Page 5-16, Table 5.5

| Three SAMAs (50, 54, 116) listed in the ER are not listed in Table 5.5. (TPD62-35)

| **Response:** *The comment is noted. Table 5.5 was not meant to be a comprehensive list of all of the SAMAs. Table 5.5 only attempts to demonstrate how certain SAMAs are placed in pertinent categories and describe their disposition.*

A.2 Public Meeting Transcript Excerpts and Comment Letters

Transcript of the Afternoon Public Meeting on July 17, 2001, in Homestead, Florida

[Introduction, Mr. Cameron]
[Presentation by Mr. Grimes]
[Presentation by Mr. Wilson]
[Presentation by Mr. Brandt]
[Presentation by Mr. Snodderly]

Ms. Jacobs: Diane Jacobs, Sierra Club.

I'd like to know why the application is filed so far in advance of the expiration of the original licenses?

Mr. Grimes: Typically, large generating capacity takes about ten years to plan and project. The replacement power for a plant about the size of Turkey Point would need to be in the planning stages about this time in order for Florida Power and Light to reasonably be able to replace that capacity in the event it concluded to close the plant upon its expiration.

So we're finding that all of the plants that these licenses expire in the 2010 to 2015 range are the ones that are currently pursuing license renewal in order to establish what the requirements for plant operations beyond that term would need to be.

Mr. Cameron: Thank you. Thank you very much.

Is there another question on process?

Ms. Rudisch: My name is Mary Rudisch, Sierra Club.

After this Draft Supplement is reviewed and if the NRC decides that amendments need to be made to the Environmental Impact Statement, how do you go about that process?

Mr. Cameron: Okay, Jim, do you want to handle that one, and is it clear what Mary is asking us?

Mr. Wilson: I'm hoping if I get a little bit far afield you'll recalibrate me and let me know.

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We'll be collecting comments provided at this public meeting off the transcript. We'll also be looking at comments that we receive either in writing or in E-mail at a special address.. We'll be giving you a sheet to show you how to provide those comments.

At the end of the scoping period, that's some time after September 6th, at the end of the comment period, I'm sorry, we will look at every comment and try and group like comments and then disposition them. They will appear on an Appendix to the Environmental Impact Statement that we'll issue hopefully some time in January, before the end of January. We'll try and characterize each comment and restate it, and if necessary, we'll change the text in the Environmental Impact Statement to accommodate the comment and there will be a kind of a road map that tracks the comment to the change in the document that we made.

Mr. Cameron: Mary, does that answer your question?

Ms. Rudisch: Can I ask a question about the safety review process, which is different from the environmental review process?

Let me think for a second how I want to say this.

After the review of the Draft Supplement for the safety review process of the two Turkey Point nuclear reactors, has that ever prompted the NRC to go back and reinspect the plant in the past? Has that ever been your practice, to go back and reinspect the plant?

Mr. Grimes: Let me say -- let me answer the question in this way.

We have resident inspectors that live and work in these plants and follow them on a routine basis. The trigger for inspection activities is normally an event or an inspection finding or a maintenance finding. In some cases we have had questions arise by the content of applications. The larger population of applications that we get are license amendments for the existing licenses. We've only completed three license renewal reviews. So I can't say we have a lot of experience that we can draw on in terms of issues that were triggered by the content of the application.

By and large, our inspection activities are derived from plant operating experience, things that we find in the plant, as opposed to materials that's presented in applications.

Does that answer your question?

Ms. Rudisch: I understand that the process is ongoing and I understand that the NRC has resident inspectors that live here in Homestead, Florida with their families, but I also understand that they're rotated out every four years too.

The question is, I guess what I wanted to ask was, based on public comment to the -- based on public comment, has the NRC ever gone back and reinspected plants, based on public comment?

Mr. Cameron: And this could be apart from license renewal, right?

Mr. Grimes: And the answer is, yes. We have had -- there are circumstances where public comments have triggered questions in our own minds and we've said well, we don't have any record to draw on and we don't have any recent experience, so that's a good question, let's go find out what the answer is. And we conduct an inspection.

If it's a fairly simple thing we call a resident and say, "Would you please go look?"

In other cases we've augmented the plans for the team inspections we conduct for the license renewal process. Team inspections have a flexible perk to them. And so we've included specifics in there that were triggered by comments that were raised during the scoping process for the environmental review.

Mr. Brown: I'm Dr. Brown, Jerry Brown, with the Radiation and Public Health Project. Mike, I have a question for you. I'm sorry, I didn't get your last name.

In relationship to the very detailed accident analysis that you've done and your conclusion that things are in a safety zone, if that is so, does the NRC take a position on the renewal of the Price Anderson Act, which is up for renewal in Congress? The Price Anderson Act passed in 1957 at the insistence of the utilities, place a limit of liability on any pro-reactor accident and the limit of dollar liability that the utility would face.

If the reactors are in your analysis safe, do you feel there is a need for the Price Anderson Act and does the NRC Commission or staff take any position on the Price Anderson Act?

Mr. Snodderly: The Price Anderson Act assumes that there is an accident. So in response to your question I say yes, there is a need for Price Anderson, because what we're doing is, we're trying to assess that the probability of such accident is low. What Price Anderson's trying to address is, given an accident, you need some type of insurance to cover the cost associated with such an accident.

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| So I think that's a key distinction. One is trying to show that the probability or likelihood of such
| an accident is low; that's what I was looking at and I want to put that over here. Now given an
| accident, do we need some type of an insurance fund to address the consequences associated
| with the given accident.

| So I think that's an important distinction. Does that answer your question?

| Mr. Brown: (Inaudible.)

| Mr. Cameron: I'm going to repeat that for the record. Does the NRC take a position on
| renewing the Price Anderson Act?

| Let's go to Chris Grimes. You heard from Mike on one aspect of it. Chris, answer to that?

| Mr. Grimes: I'm going to say that I think that we look to Congress to make some decisions
| about liabilities and we've established a fairly detailed evaluation of the risks of power plant
| accidents and their probability. And just like any other insurance fund, you can establish
| -- you can use those to establish financial risk factors, but I don't think the NRC staff has a
| particular position on the need for such insurance or that fund. And that I do know that that
| matter is pending before Congress, and if we were to ask for an opinion -- quite frankly, I don't
| know that we would express an opinion.

| Mr. Cameron: I think we'll need to go on here, but some information that may be helpful is that
| there was a hearing, Congressional hearing, about two weeks ago on Price Anderson that not
| only the NRC but some non-governmental organizations and others testified at. Now I don't
| know if there's an answer in the NRC testimony to your question, Dr. Brown, but can we make
| and note, and I'll make a note that we can get Dr. Brown the copy of the NRC's public testimony
| in that.

| All right, other questions?

| Mr. Oncavage: Mark Oncavage, Petitioner for Safety Hearings, pro se.

| The question is, the published date of the GEIS is 1996, correct? How much time prior to 1996
| were you collecting data and studies?

| Mr. Grimes: I'm going to defer to Mr. Wilson.

Mr. Wilson: I believe that they were working on the Generic Environmental Impact Statement in the late 1980's. We had a working draft that we were working with in early 1990's. I believe we issued it for comment in 1992, and it took four years to resolve the comments and issue a final document.

Mr. Oncavage: So to re-cap, the earliest portion of the data collection goes back to the late '80's?

Mr. Wilson: That's my understanding.

Mr. Cameron: Okay, other questions?

Yes, sir, and please just state your name and affiliation for the record.

Mr. Dan: My name is Steve Dan. I live in Miami. I've lived here my whole life.

Dr. Brown's article from the other day, I'm sure you've all had a chance to review it, about the Tooth Fairy Project. And it's a national study of baby teeth in Miami-Dade, where they found that the teeth have the highest concentrations of strontium 90 found anywhere in the nation.

I was just wondering, because according to this we're within regulatory limits. I was concerned with what are those limits, how much is being emitted now, how much has been emitted over time? You say you are within limits now. Have you always been within those limits?

You also mentioned that the soil is within range of soils found around nuclear weapons testing fall-out. How does that compare to the rest of the nation now?

And you say that cancer rates are stable or declining, and I was wondering if that's true here, because according to Dr. Brown's article, that information seems to be contradictory.

So I was wondering if you could comment on those things.

Mr. Cameron: Okay, there was a whole list of questions there. Do we want to go to Trish Milligan to try to address some of those?

Keep in mind that we are considering questions, comments, on the record. Hopefully we'll give you some of the information you need and see if we can perhaps provide other information later.

This is Patricia Milligan from the NRC staff. She's with the Office of Nuclear Reactor Regulation and she is a health physicist, correct?

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| Ms. Milligan: Yes. I'm a certified health physicist and also a pharmacist and licensed to
| practice in a bunch of different states and I've done a lot of work in nuclear pharmacy as well.
| So my background has been fairly extensive and I've only been with the NRC about three
| years.

| So I'm going to have to ask you to repeat all of your questions. I didn't read the article by Dr.
| Brown in the Miami paper. I think it was yesterday's paper. I didn't get a chance to see that.

| So if you could ask me again, one at a time, and then I'll answer your questions one at a time.

| Mr. Dan: Are you aware of the Tooth Fairy Project?

| Ms. Milligan: Yes, I am.

| Mr. Cameron: Why don't you go up to the front? That's a good idea.

| Mr. Dan: The Tooth Fairy Project. Are you aware of the Tooth Fairy Project?

| Ms. Milligan: Yes, I am.

| Mr. Dan: Okay. The conclusions there look pretty grave for both sets, grown-ups who have
| lived down here our whole lives. Could you comment on that?

| Ms. Milligan: Well, the Florida Department of Health just released from the Department of
| Epidemiology, a review of that study and their conclusions were very different looking at the
| very same data that Dr. Brown and his group looked at.

| The report is available and I could read you sections of it, but the summary says in essence that
| they were unable to replicate any of the results from Dr. Brown's study using Dr. Brown's data
| and that they found in fact the cancer rates in this area to be at or below State and National
| averages and they did not find the instance of cancers and strontium to be what Dr. Brown's
| study has been suggesting. That was just released today and there is copies available here,
| sir, for you.

| Mr. Cameron: Okay, second question?

| Mr. Dan: We were talking about that the strontium 90 concentrations are in the soil,
| concentrations that you'd expect near nuclear weapons testing facilities. Is that what we

believe is going on, that we're at around where the rest of the nation is? I mean does the rest of the nation have the same, you know, fall-out problem as if they were right next to a nuclear weapons test facility?

Ms. Milligan: As I understand the question, you are interested in what the strontium 90 concentration in the soil is in this area?

Mr. Dan: Correct.

Ms. Milligan: Okay. When you have fall-out from atmospheric testing, what you see is you have different fall-out patterns depending on such things as rainfall. Rain will scrub particulates from the atmosphere and they'll deposit. Areas of higher rainfall will have higher particulate matter such as strontium 90 and other things in atmosphere testing.

Coincidentally or interestingly enough, some of the sites out west where the atmospheric testing occurred have in fact, because of low rainfall, actually less fall-out than some of their neighbors that have more rainfall.

So rainfall patterns, if you look at it globally, not just in this country but around the world, they all vary depending on regional factors. We do not see any one particular area to be alarmingly high in terms of fall-out if you look at it on a national and global average.

Mr. Dan: So again, you're saying that the soil here in Miami-Dade County is no higher than the national average?

Ms. Milligan: Yes, that's correct. It's all within the bounds of background that we expect from strontium 90 fall-out from atmospheric testing.

I will say though that certain states, because of precipitation patterns and because of composition of soil, may have less strontium 90 and other states may have a little more, but if you look at it as an average, we're all right in the average that's expected from atmospheric fall-out.

Mr. Cameron: Another question, Mr. Dan?

Mr. Dan: We're saying here that the National Cancer Institute attributes cancer rates to longer life and that the cancer rates have been stable or declining. I'm sure that's nationally. But here, according again to Dr. Brown's article, that's not true. In fact, cancer rates are increasing in this part of the area.

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| Ms. Milligan: Well again, if you take a look at what the Department of Health just released
| today and they reviewed the cancer statistics, they do not find the increase in cancer that Dr.
| Brown's study has said. And they used the same data that Dr. Brown used.

| If you look at the National Cancer Institute national data, you find that Florida, as to these
| counties down here, tend to have a lower than a national average cancer rate for some of -- for
| breast cancer and for leukemia.

| Mr. Dan: Finally, just curious about, is there a way for the public to be able to find strontium 90
| level in their house, like some sort of little test kit or something along these lines so that we
| could know when you guys --

| Ms. Milligan: That's an interesting marketing idea. Maybe that's my next career.

| But no, at this point, you could I suppose find a lab that could do the analysis for you, and a
| great many of our labs are able to do those analyses. I don't know of anything commercially
| that's available.

| What we do know when we look at environmental samples, is that the amount of strontium 90
| we've learned is very, very, very low in terms of picocuries quantities and picocuries -- would be
| one -- so we're looking at extraordinary small quantities, oftentimes are too small to even be
| detected.

| Mr. Cameron: Okay. Mr. Dan, I think we're going to move on, and I thank you for your
| questions. I would point out that Dr. Brown and Dr. Sternglass are going to be making some
| comments later on. We also have Mr. Keaton here from the State of Florida who might provide
| us a little bit more information on the recent Florida study, although I would emphasize in
| fairness to him that that is not his particular group and for Mr. Dan or others who want to talk to
| Ms. Milligan later after the meeting, please take the opportunity to do that.

| Do we have other questions before we go on? Yes, ma'am?

| Ms. Gilbert: Cathy Gilbert. Just to repeat one question that was just now asked and wasn't
| answered, was what is the emission rate here? What kind of emissions do we have from the
| plant?

| Mr. Cameron: I think that that's a broad question in terms of different types of emissions.
| Who's the best person to answer that? Trish?

Ms. Milligan: Every year our licensee is required to file an annual report that details what's released, the quantities of all the isotopes that are released. And when I went back and took a look specifically at Turkey Point in preparation for coming down here so I could answer these kind of questions, all the releases from Turkey Point were within minimum ranges typically for the strontium isotope which were well within the regulatory limits for releases. Some years they were below concentrations. But the folks from Turkey Point probably have that data more readily available. We also have it available. I think it's on our website.

Mr. Cameron: So that if people did want to take a look at that information we could give them a reference on our website so they could take a look at that and I'll put that up there as another issue and we'll try to get that where you can access that.

Yes?

Ms. Rudisch: Mary Rudisch, Sierra Club. So the information that the NRC reviews is information that Florida Power and Lights gives you?

Mr. Cameron: Can we talk -- I think put this in context and talk about how the monitoring program works, where it starts, whose responsibility it is? Can you do that for us, Chris?

Mr. Grimes: I'm going to try and do that on a very broad scale.

The power reactor license requires that the applicant have a monitoring program. And so they actually conduct the monitoring. In this case I understand, and I'll be corrected if I'm wrong, I'm sure, I believe that the State of Florida actually does the monitoring for them and then they in turn take those results and give them back to the NRC as the results of the monitoring program they're required to have.

But there are also other monitoring that's done beyond the NRC requirements, simply for the utility to have a better understanding about what's going on in the environment around them. But they provide a required set of results on environmental monitoring from in the plant to the immediate environment and then to the extreme environment. There are three ranges of monitoring. And then they provide those results to us.

But as I mentioned before, we have resident inspectors that are checking the monitoring results almost on a daily basis depending on where the monitoring results might occur during their plant tours. And then we also have region based and headquarters based staff that come out and periodically sample the monitoring reports relative to actual in plant conditions.

Mr. Cameron: Thank you very much. Let's go to this gentleman here.

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| Mr. Danek: My name is Joe Danek with Florida Power and Light, and as the NRC just said, we
| do have a monitoring program that's conducted by the plant. It is closely followed by the
| resident inspector, but also the regional radiation protection inspector from the Nuclear
| Regulatory Commission and monitor releases. We also have a cross-check sampling program
| associated with that.

| One thing very unique with the State of Florida is that the State Department of Health does the
| entire radiological environmental monitoring program around Turkey Point and St. Lucie site.
| That's very unique for the State of Florida. Many states, power plants do their own radiological
| environmental monitoring program, but in our case the State does that and I think they -- the
| radiological environment around Turkey Point and their measurements continue to be very, very
| low level to within comparable levels within the State.

| Mr. Cameron: Okay, thank you very much. Maybe Mr. Keaton can tell us a little bit more about
| that when we hear from him later.

| Are there other questions before we move on to the -- to hearing more from our review? Yes?

| Ms. Jacobs: I don't know exactly who to direct this to. Diane Jacobs, Sierra Club. But do you
| think that there's any evidence or any reason to suspect that the current acceptable level of
| strontium 90 in emission from these nuclear power plants might be too high?

| Ms. Milligan: One of the things that I looked at when I was evaluating a lot of this data is, I took
| a look at what's happening in America and then I looked at what's happening outside in other
| countries. Other countries have nuclear power plants. For example, just about eighty-five
| percent of electricity is from nuclear power in France, and I looked at Japan as well. And when
| I went and looked at their incidents rates of cancer and looked at strontium 90 and looked at
| those things, what I found was logically -- I expected that okay, if there's a strontium 90 issue
| than France should have very high instances of these diseases. And what we found -- what I
| found when I looked at the disease rate, cancer rates in France, taking away from lung cancer
| because they smoke -- but if you look at breast cancer and blood cancer is what you find is that
| they are in par or actually less than in America. If you go to Japan you find that breast cancer
| and blood cancers are up to one-third less than what they are in America. So if strontium 90
| were the smoking gun that's causing all these things, then you should expect to see it globally
| in those countries similar to U.S., you should expect to see comparable factors, and you just
| don't see that.

| Ms. Jacobs: (Inaudible.)

Ms. Milligan: I think our levels are similar to international levels, yes. Their levels are not higher than ours, in answer to your question. They're actually at our level, or in fact in some instances, lower.

Mr. Cameron: Thank you very much. Chris just wants to add something.

Mr. Grimes: I'd like to add that during the course of some of the comments that we're going to hear tonight, we're going to hear from views on radiation health effects, we're going to hear some questions about the adequacy of radiation health standards. Our purpose in this meeting is to hear from you, to hear about those concerns and to get as much in the way of specifics about these concerns as possible so that we can go back and address them. There are numerous studies that we could refer to and there are some conferences that are held just for the purpose of discussing radiation health effects and low levels of radiation and separation of variables and things like that. But we do have a fairly detailed account of what the radiation safety standards are in Title 10, refer to Federal regulations and where they come from and how they're founded and what they mean. And then we have a variety of these different studies.

And so as part of what we're going to do tonight, today or whatever. I have already lost where we are in the day. We're in Florida, I know that. But we do want to hear about these comments and concerns and then we're going to try and get those into some issues that we can address specifically in response to the comments in the preliminary report.

Mr. Cameron: Okay. Thank you very much, Chris.

Yes, sir, and could you tell us who you are?

Mr. Velazquez: My name is Arnold Velazquez. I'm a consulting engineer. And the question I'd like to ask, are there any steps in the process to verify or validate the test results obtained at the plant?

Mr. Cameron: When you say test results, I have a feeling -- okay. The question is, is there any way to validate the monitoring results?

Mr. Grimes: I'm going to give a very simplistic answer to that.

The normal process consists of looking at the standards that are used to calibrate the instruments that are relied upon to make a measurement, and so part of the inspection process is to check the validity of the inspection standard. Most of them go back to National Institute of Standards and Technologies reference point that are used in order to calibrate the instrument. And so we normally look at that process that's used to calibrate the instruments that are relied

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| upon. But periodically there will be independent samples that are taken and tested separately
| as a means of also validating the process that is used, and those are done randomly. They're
| normally done on an unannounced basis so that the process -- there's a confidence in the
| process level by checking it in an unannounced way.

| Mr. Cameron: Okay, thank you very much.

| Let's take one more question and then let's move on to public comment. As I said and several
| have said, if you have time after the meeting to talk individually with the NRC staff they'll be
| available for you.

| Yes, ma'am?

| Ms. Roberts: My name is Maria Roberts and what I would like to hear right now is a summary
| of the Tooth Fairy report and a summary of the Florida Department of Health report and
| thereafter continued public comment. That's what I would like, please.

| Mr. Cameron: Well, I understand why you would like to hear that now, but I think that what
| we're going to have to do is to hear that during the course of the public comment, and we do
| have Dr. Brown and Dr. Sternglass who is going to talk about the Tooth Fairy Report. What
| we'll do is we'll follow that up with the State personnel who can at least tell us a little bit about it.

| Well, hopefully we should be there around 3:30, okay. All right.

| Before we go into public comment, there is a NRC evaluation form for the meeting, okay. It's
| called NRC Public Meeting Feedback. We try to use this to get a feel if we're doing an effective
| job, at least on the public meeting part. So if you could fill that out for us before you leave.
| There's copies out there on the desk.

| And right now what I'd like to do is, we do have Yolanda Marsh with us. I believe she probably
| is still with us, from Commissioner Denis Moss' office, and I was going to ask her to come up
| first.

| I just would ask you to try to keep it to five minutes. We may have some people who go over a
| minute or so. Some may be under.

| Yolanda, you can be there or you can be up here, wherever you feel most comfortable.

| Ms. Marsh: I don't even have five minutes.

Mr. Cameron: Good. I don't mean good, but -- (Laughter).

Yolanda, our stenographer said that this one isn't picking up as much, so maybe you could go -- did you fix this? Why don't you go ahead and try it? I'm sorry.

TPD09 Ms. Marsh: Hello. My name is Yolanda Marsh. I am with Commissioner Moss' office. I am just here today to represent Commissioner Moss because he couldn't be here due to another engagement.

09-1 And I'm just basically here to say that Commissioner Moss is in support of the Turkey Point Power Plant renewal. And that's basically it, and if you all have any questions for him, you can feel free to contact our office or write letters to comment on whatever you feel that you would like to comment on.

And I do have my business cards here if you all want them. I will place them up front and you can get them later.

Mr. Cameron: Okay. Thank you very much, Yolanda, and thank Commissioner Moss for us.

Let's go to Mr. Curt Ivy who's the City Manager for the City of Homestead. Mr. Ivy?

We're going to go through some local emergency planning officials next. We're going to hear from Florida Power and Light and then we're going to get to Dr. Brown, Dr. Sternglass, and State of Florida and others.

Mr. Ivy? Wherever you feel most comfortable.

TPD10 Mr. Ivy: Let me go up here.

Thank you. Good afternoon. I'm Curt Ivy, City Manager for the City of Homestead.

10-1 I'm here today to speak in favor of Turkey Point. I'm not going to speak on the need for future power. I'm not going to speak on their safety record. I'm not going to speak on their environmental record. All that I'm sure will come out.

I'm going to speak to you as a community manager in the City of Homestead. I'd rather talk about the impact that Turkey Point has on our community. Again, there's a lot more experts out there that can deal with the other issues in regards to Turkey Point. But myself, I'm interested in the impact to our community.

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10-2 | The impact to our community for the presence of Turkey Point being in our community is very
| significant. We're talking 800 employees, one of our largest employers in the area. I'm talking
| about another 500 seasonal, I will use the term seasonal workers, that come in and use the
10-3 | services of the surrounding community, including Homestead. I'd like to talk about spouses of
| employees being our teachers, our nurses, other members in the work force for our community.
| I mention that only because we had one other organization here that's no longer here and that
| was Homestead Air Force Base.

10-4 | We know what the loss of economic generator is to this community because we've had that
| happen to us, and that's in the form I can relate it to, Homestead Air Force Base.

| We lost not only the economics of the business there, but we also lost things such as I just
| mentioned, school teachers, nurses, the kids in our honors programs. It just diluted the quality
| of our community, the quality of life in our community, considerably, and I would relate that if we
| didn't have a Turkey Point, for example, here and an employer of the magnitude of that, we
| would again experience that kind of negative impact to our community.

| So I did want to be very specific about that and speak about the impact on the surrounding
| community. We're talking about salaries with disposable income. If a community is going to
| grow and enrich itself, we don't just have to have jobs, we have to have jobs that bring in
| salaries that are above the norm, or else we'll just stay level. We have to have salaries that
| keep above the norm to bring in disposable income into our community if we expect to grow
| economically in our community. It's not always the quantity of jobs. Sometimes it's the quality.
| Here we have both, quantity and quality in our jobs.

| I also -- again, I read some of the data on this particular issue in terms of their average salaries.
| The \$62,000.00 a year is what was the average salary mentioned for Turkey Point employees.
| This is significant in our community. Our average salary in our community does not reach
| \$62,000.00, I assure you.

| We are again, as a community leader in the City of Homestead and someone who manages the
| day to day business, or tries to, and if you've been reading the paper lately you might say that
| there might be a new manager, but at any rate, we have our problems and we certainly do not
10-5 | want to take the chance on losing a partner that we have. And I didn't mention the community
| activities they get involved in, the volunteerism, the donations, the United Way, over
| \$150,000.00 going to the United Way, among a whole host of other types of activities that we
| can count on from the employees and the company of FP&L.

| So from the prospective as a community leader, this is an important issue for us, one of many
| we face. And I will reiterate we have lost economic engine. We do know what that means to a
| community. Until you lose it, sometimes you take it for granted. And we certainly don't want to

do that. One thing, we learn lessons from history. At least we try to remember those and learn lessons from history.

10-6 So for our prospective from the City of Homestead, we totally support FP&L and their relicensing. Thank you.

Mr. Cameron: Thank you, Mr. Ivy.

Next we're going to go to Chuck Lanza who is from the Miami-Dade County Emergency Planning. And Chuck, please tell us your title and everything else, okay.

TPD11 Mr. Lanza: Thank you very much. I'd like to welcome the NRC and thank you for being here today. My name is Chuck Lanza. I'm the director of the Miami-Dade County Office of Emergency Management. I was present and had the opportunity to speak at the last public hearing. I've also had the good fortune to be able to read into the record a letter from Mayor Alex Penelas, which I will do again tonight.

11-1 Both the Mayor and I have read the Draft Supplemental Environmental Impact Statement and we are very comfortable. He's comfortable with presenting this letter and I am comfortable with supporting him in that presentation.

11-2 The quotes in the letter, Turkey Point nuclear is one of the safest and best run nuclear plants. As the emergency manager for Dade County I can attest to that. We work very closely with the company and with all the employees of the company and I can reaffirm the fact that I do attest to their safety and their willingness to work very closely with the community to make their operation a safe operation.

TPD12 At this time I'd like to read into the record a letter from the Honorable Alex Penelas. The letter is from the Office of the Mayor, Miami-Dade County, Florida, Alex Penelas, Mayor.

12-1 "Good evening. I would like to welcome the members of the Nuclear Regulatory Commission to Miami-Dade County and thank them again for the professionalism and commitment on this very important endeavor. I received and reviewed a copy of the Draft Supplemental Environmental Impact Statement which was prepared after much careful analysis by the NRC. I am pleased with their assessment and agree that renewing the operating license of the Turkey Point Nuclear Plant is the most positive environmental option to help meet the growing energy needs of South Florida. I would like to explain why I support the license renewal of the Turkey Point Nuclear Plant."

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12-2 | "Miami-Dade County is a growing community with increasing demands for electricity. By
| approving the license Turkey Point Nuclear Plant will be able to provide South Florida with safe,
| clean, reliable and economical electricity well into the twenty-first century."

12-3 | "Turkey Point Nuclear Plant is one of the safest and best run nuclear plants in the country as
| judged by the regulators and its peers. It has consistently received top ratings from the Nuclear
| Regulatory Commission and by the Institute of Nuclear Power Operation."

12-4 | "Miami-Dade County has a very strong record of its commitment to protect its natural
| environment. The Turkey Point employees have developed a unique stewardship of the
| environment in the region surrounding the plant by preserving the natural habitat which provides
| homes to many endangered species including the American crocodile."

12-5 | "Miami-Dade County is a diverse community with many needs. The Turkey Point employees
| are caring neighbors to communities surrounding the plant. Its employees make significant
| contributions to the community and to civic organizations."

12-6 | "Turkey Point Nuclear Plant is the largest private employer in the region with over 800
| employees and its purchase of local services help sustain economy of South Miami-Dade
| County."

12-7 | "I appreciate being allowed to enter these comments into the record which enables me to
| demonstrate why I support Turkey Point Nuclear Plant license renewal application. I am always
| available for questions. Thank you."

"Sincerely, Alex Penelas, Mayor, Miami-Dade County."

Mr. Cameron: Thank you very much.

Another emergency management official, Irene Toner from Monroe County. Irene?

TPD13 | Ms. Toner: Good afternoon. My name is Irene Toner. I'm the Director of Emergency
| Management from Monroe County.

| The history of nuclear power plants in the United States has shown public support in a general
| decline and now a recent renewal of interest. The renewal of interest in nuclear power plants
| has been due in part to their improvement for producing electricity. It would be of no use
| without their ability to maintain and improve their safety records.
|

The safety of the citizens of Monroe County is my primary reason for renewing this support. The Draft Environmental Impact Statement for the Turkey Point Plant, the impact of renewing the operating license for Units 3 and 4 and the alternatives available if the license is not renewed.

13-1 The conclusion of the report is that there is no significant change to the present environmental impact and minimal change to the potential environmental risks from continuous operation of the plant.

13-2 The alternatives to continued operation of the plant and the reports do not appear to be economically or environmentally effective. The plant, although located in Miami-Dade County,
13-3 has the potential to have a large impact on Monroe County and its citizens. If the plants are maintained in accordance with the NRC issued license and problems associated with extended operational life and continue to support the emergency plan, it is reasonable to conclude that it will continue to be good neighbors to Monroe County.

Thank you.

Mr. Cameron: Thank you very much, Irene.

Next we're going to hear from the representatives of the licensed applicant, Mr. Robert Hovey from Florida Power and Light. He's the Vice President, Turkey Point Plant, and then we'll hear from Ms. Thompson and then we're going to go to Dr. Brown.

TPD14 Mr. Hovey: Good afternoon and thank you, Mr. Cameron. My name is Bob Hovey and I am the Vice President of Florida Power and Light's Turkey Point Nuclear Power Plant. I appreciate this opportunity to speak to you today about FPL's application for the renewal of the Turkey Point operating licenses. Assisting me is Liz Thompson, our license renewal project manager who will address more specifically the findings contained in the Draft Supplemental Environmental Impact Statement next.

I'd like to thank the Nuclear Regulatory Commission for arranging and holding the meeting today. FPL strongly supports the openness of this process. During the last two years we have been involved in dialogue with the communities surrounding Turkey Point. We've met with more than one thousand homeowner, community groups and Governmental officials. Our purpose was to share the information about license renewal and plant operations, and we believe that the community interests and priorities should be incorporated into not only our license renewal at Turkey Point but overall operations.

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| Community in-put is an integral part of the license renewal process. The application we
| prepared consisted of two parts, a safety analysis and an environmental report. Our application
| has been open to public review for some time and the NRC has requested comments from
| interested parties.

| Just as the process has been open in reviewing the environmental aspects of the license
| renewal, the safety analysis is following a parallel path. There are open public meetings and
| the NRC is currently going through an intensive review of plant systems to insure the safe
| operation for an additional twenty years. A public meeting on the scoping of NRC's
| environmental review of our license renewal application was held here at the Homestead YMCA
| in December of last year.

| Today's meeting continues the open process of seeking public in-put on license renewal. We
| welcome the opportunity to gain additional community in-put on the environmental aspects of
| our license renewal.

| I'd like to thank the members of the community represented here today for taking time out of
| your busy schedules to share your views and ideas on the Draft Report with the Nuclear
| Regulatory Commission. We appreciate the support provided to us by the South Dade
| community, but I'd also like to thank the NRC staff and members of the National Laboratories
| Review Team for their work in preparing the Supplemental Environmental Impact Statement for
| Turkey Point license renewal.

| I believe the report reflects a comprehensive assessment of the environmental impact of license
| renewal.

| With that said, let me provide a little bit about my background. I came to Florida Power and
| Light in 1995 as the site Vice President at Turkey Point with a Master's Degree in Business
| Administration, a Bachelor's Degree, a Bachelor's of Science Degree in Nuclear Engineering
| and a Bachelor of Arts Degree in Business Administration. I also have spent time at other
| utilities in the nuclear field and I did time in the United States Navy in the Submarine Service.

| On a personal level, my wife and I have six children and we live here in the South Dade area.
| As Vice President of Turkey Point my first job and my primary focus is the health and safety of
| my family, the Turkey Point employees, my friends and this community. Their well being comes
| before all else.

14-1 | When I look at the evidence presented in the Supplemental Environmental Impact Statement
| and other license renewal documents, I'm assured of the plant's safety and positive impact on
14-2 | our environment. I believe the case for continued operation for Turkey Point is strong.

Let me address four areas. First, our performance, the economics of Turkey Point's electricity, the environmental stewardship and the community presence.

14-3 First, the performance of our plant is top notch, thanks to our employees. Their time, effort and dedication have resulted in Turkey Point consistently being recognized as safe and one of the most reliable and efficient plants in the industry. Our employees have also worked diligently through effective maintenance programs to sustain the option for continued plant operations well beyond the initial forty year license.

14-4 Not only does the NRC monitor our performance, other independent agencies also agree that our operations are safe and have no adverse impact on the surrounding community. This includes the State of Florida Department of Health which conducts monitoring and sampling of the South Dade area around Turkey Point.

14-5 Today you may hear claims by an activist group opposed to nuclear power called the Tooth Fairy Project that Turkey Point is harming people in Miami-Dade County. Let me assure you that their claims are just not true. As a parent I understand that we all want to protect our children's health and we want answers when any child is suffering from cancer or any type of illness. The group organized against Turkey Point claims the answers for some types of cancer are found in the plant's operations. That is not the case.

14-6
14-7 I could not in good conscience work at a facility that could be harmful to any child. Having worked at Turkey Point for many years, I am convinced that the environment around our plant is safe for your children and mine. The group's claims have been repeatedly rejected by Federal and State Health Agencies as well as by leading scientists in the radiation protection field, some of which are in the audience here today.

For example, in 1990 the National Cancer Institute conducted an independent study of 62 communities around the United States nuclear facilities that were in operation for at least ten years. The agency confirmed that there was no increased health risk of living in proximity to nuclear power plants.

14-8 The NRC has also appropriately addressed these claims in the Draft Supplemental Environmental Impact Statement and concluded the Tooth Fairy study shows no link to adverse health affects.

So bottom line, forget the fairy tale; Turkey Point is safe.

14-9 Another factor to consider is our ability to help meet Florida's energy needs. Turkey Point power can help sustain our economic growth and maintain our quality of life. Our plant is strategically located in the FPL generating system and Turkey Point is among the lowest cost

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- | producers of electricity in the FPL system, so it will help us keep our electric bills low. And
| that's good news for our customers.
|
- 14-10 | From an environmental standpoint, Turkey Point remains a guardian of our natural resources.
| We use only about a tenth of the property for power production and most of our land providing
| a home to about seventeen threatened or endangered species. The endangered American
| crocodile has found a safe haven and a nesting ground in the plant cooling canals. This is one
| of the three areas in the country where the crocodile is living and indeed thriving.
|
- 14-11 | We also placed over 14,000 acres of sensitive wetlands with permanent conservation where the
14-12 | lands there were stored and preserved in its natural condition. In addition, we can continue to
| produce clean electricity without air pollution or greenhouse gases.
|
- 14-13 | Finally, what does Turkey Point mean to our community? We asked the neighbors and they
| told us that we're an important economic factor in this community, one that they want to see
| remain as a viable contributor. The payroll for around 800 employees tax dollars, purchases
| and contributions to local United Way agencies help in this area.
|
- 14-14 | But perhaps more importantly is the role our people play in the community. Our employees are
| active in their churches, in scout organizations, PTA, little leagues and even local Government.
| As a testimony to our community role, many members of the local community spoke in support
| of Turkey Point during the December, 2000 public meetings here in this room.
|
- 14-15 | In summary, I believe reviewing the licenses of Turkey Point Nuclear Power Plant is in the best
| interest of our community and in continuing to provide safe, clean, reliable and low cost
| electricity to our customers.
|
- | That's my professional opinion as Vice President of Turkey Point Nuclear Plant and my
| personal conviction as a parent and an active member of the community.
|
- | Now I'd like to turn it over to our license renewal project manager, Liz Thompson, to provide
| some additional details on FPL's license renewal efforts and the comments on the Draft
| Environmental Impact Statement.
|
- | Mr. Cameron: Okay. I think that the public are speaking and we're going to other people who
| signed up to speak and following on after Liz is done and after other people in the community.
| So everybody will get a chance to speak. I would just ask everybody to try to keep it to five
| minutes and we are going to hear from Dr. Brown and Dr. Sternglass, Mr. Oncavage, other
| members of the Sierra Club.
|

Liz, please.

TPD15 Ms. Thompson: Thank you. Good afternoon everyone. I would also like to thank the Nuclear Regulatory Commission and each of you here today for your time and involvement in the license renewal process. It's a pleasure to be here today to share some thoughts with you about the Supplemental Environmental Impact Statement for Turkey Point.

As Bob said, my name is Liz Thompson and I'm the project manager for the Turkey Point license renewal effort. I've worked at the site for about fourteen years and am personally involved in not only license renewal, but operations, maintenance, engineering. I have first-hand experience of the team work that has enabled the plant to become a top performer in its class and a viable candidate for license renewal.

License renewal was not a process that we entered into lightly. We realize we have a responsibility to the community in which we're located. In preparing our license renewal application we were extremely careful to insure that programs and procedures are in place to assure safe operations and that the plant is having a positive impact on the environment. That process is not something new. It's how we run our business every day.

The NRC has now evaluated the environmental aspects associated with our license renewal application. The Supplemental Environmental Impact Statement for the Turkey Point license renewal provides a thorough examination of the 92 environmental issues addressed in the regulations. This is a very broad approach and it has been thoughtfully designed and is intended to cover a wide spectrum of considerations that need to be evaluated in renewing our licenses.

15-1 The Supplemental Environmental Impact Statement concludes that the environmental impact from operating Turkey Point for an additional twenty years will be small and less than the impacts of other energy sources. This conclusion is based on the detailed analysis of the impact areas. The analysis in the Supplemental Environmental Impact Statement also looked at replacing the two reactors with equivalent electricity producers, new nuclear reactors, oil or gas burning generators, even solar panels, and concluded these options would produce greater pollution and ecological impacts.

15-2 We have been told by our neighbors that clean energy is important to them and we believe Turkey Point provides that benefit.

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15-4 | But another reason I believe that Turkey Point should operate for an additional twenty years is
| to be able to continue the award winning conservation work that was initiated almost thirty years
| ago. I'm proud of the work we do to preserve and protect the environment. We believe in our
| responsibility to operate in harmony with the environment.

15-5 | Turkey Point's unique location successfully combines modern technology with a strong
| environmental commitment. In recognition of our efforts in land preservation, FPL was
| presented the Edison Electric Institute Environmental Award for Turkey Point's land
| management work earlier this year, and the Greater Miami Chamber of Commerce
| Environmental Award in 2000, both recognizing FPL's efforts for preservation and education on
| the endangered American crocodile. These efforts have attracted world wide attention, being
| featured in National Geographic Magazine and on television CNN and the Discovery Channel.

15-6 | The preservation of the site and the species present there will continue during the renewed
| operating license period.

15-7 | Aside from the very important environmental benefits of continued Turkey Point operations,
| license renewal is also important to meeting the energy needs of South Florida. Florida is
| growing approximately two percent per year and the electricity consumed per customer is also
| increasing. FPL must provide power plants to keep up with this growing demand and insure an
| ample supply of electricity. This means keeping solid performers like Turkey Point as a viable
| part of FPL's generation network, one that uses a diverse energy mix to insure that our
| customers, when they flip that switch, the electricity is there.

15-8 | As Bob Hovey mentioned, there are many additional benefits Turkey Point provides to the
| community. Our neighbors have told us that taking away Turkey Point would have a big impact
| on the community, and we agree with that conclusion.

| The Turkey Point employees want to remain a part of this community and they want to remain
| your neighbors. I believe extending the operations is more than renewing the license, it's about
| renewing our future in South Florida. We are committed to safely and reliably operate in the
| Turkey Point Power Plant long into the future to meet the energy needs of this area while
| protecting the environment.

| Thank you.

| Mr. Cameron: Okay, thank you, Liz. We're next going to hear from Dr. Jerry Brown and Dr.
| Ernest Sternglass. Can we get the view graph machine set up for them?

After Dr. Brown and Dr. -- well, Dr. Brown first and then we're going to have Dr. Sternglass. We'll then want to hear from Mr. Keaton of the State and we're going to try to fit someone in quickly if we can but we'll -- okay, we don't have to worry about that.

All right. This is Dr. Jerry Brown and he'll provide further information on what he's doing.

TPD16 Dr. Brown: Good afternoon. We have an executive summary of our presentation here today and we'll pass it out to anyone who would like it.

My name is Dr. Jerry Brown. I'm a research associate with the Radiation and Public Health Project. I teach anthropology at the Florida International University. I've been there since it opened in 1972. I received my Ph.D. Degree from Cornell University.

In the mid '80's I served as an executive director for Business Executives for National Security, which was an organization formed by Fortune 1000 executives including Ted Turner, Peter Grace of the Grace Company, Tom Watson of IBM, President of IBM. The purpose of that organization was several fold; to put the Pentagon on a business like basis, to reduce the risk of nuclear war and to change the relationship with the Soviet Union.

So I've been involved around radiation issues for some time.

The report that we have here today, of which there is an executive summary being circulated, we also have the full report. For anyone that would like it, please see us at the end of the presentation.

This report will also be shared with Florida Power and Light, with the Florida Department of Health, with the EPA and with other members of Congress who have responsibility both in the environmental and in the health area.

The principal author as you see here is Joseph Mangano, a epidemiologist and public health researcher. Jay Gould is a director of the project. He's a former Ph.D. economist and statistician from Chicago, University of Chicago, a former science advisor to the EPA under the Carter Administration. Dr. Ernest Sternglass who will be speaking soon is Professor of Radiation Physics at the University of Pittsburgh School of Medicine. Janet Sherman, M.D., internist, toxicologist, former -- worked many years ago with the Atomic Energy Commission assessing health impacts of radiation.

The reason I take some time to point this out, and I've just met Mr. Hovey today in person and I've met him through the press, was just to maybe correct some mis-impressions that he may have had from our article.

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| Number one, we are not an activist group. We do not get involved in lobbying or policy. We
| are a research and public education group.

| Number two, we are not an anti-nuclear group. We are an anti-cancer group and we want to
| get to the root of the increased levels of cancer and why we have this cancer epidemic in the
| United States that will strike forty percent of all Americans in their lifetime and why we have
| elevated levels of cancer here in South Florida.

| Number three, he indicated that there were -- this was a non-medical group, and there are a
| variety of medical as well as scientific professionals involved with our research.

| I want to submit a report to the Nuclear Regulatory Commission as both a comment on the
| Turkey Point GEIS and also we believe that the data we're presenting is new and significant
| and has implications for all 43 of the utilities who have indicated specific reactors that they have
| an interest in re-licensing throughout the United States.

| We understand, and I will go rather quickly now through the bullet points of the executive
| summary given the time limitation.

16-1 | I'm on Page 3. The NRC requires that electric utilities measure emissions of radioactive
| chemical from nuclear reactors and levels of those chemicals in the air, water, soil and food. If
| these levels fall below Federal permissible levels, the NRC presumes there is no detectible
| health risk to residents living near reactors. That is what we see to be the serious flaw in the
| entire methodology of the Supplement Report. The NRC is not requiring nor has it successfully
| and thoroughly reviewed the -- not only our research, but the numerous references, the 60
| references that are in the report we're submitting. The issue here is that of looking at in-body
| levels of radiation as the true indicator of the state of health of the population.

16-2 | The NRC electric utilities, including the Florida Department of Health, have not measured levels
| of strontium 90 in the bodies -- or other radioactive chemicals -- in the bodies of persons living
| near nuclear reactors. This includes the Florida Department of Health, which is currently
| looking into the serious cancer levels that exist in St. Lucie area. In their research protocol
| which we've reviewed, they've reviewed over 300 chemicals, but they have not reviewed a
| known carcinogen, radioactive strontium 90.

| So this is the aspect of the research that we are trying to address here.

16-3 | The NRC electrical utilities and Public Health Department have made no independent study of
| cancer in persons living near nuclear reactors from 1957 to 1990. The study that was cited by
16-4 | the National Cancer Institute made a controversial conclusion that nuclear reactors did not
| affect local cancer rates, a result that would be expected based on the methodology used.

What was the methodology? In virtually all of the control counties, there were counties that were right next to counties that had nuclear power plants, as if radiation stopped at the county border. This is a flawed study and it must be re-looked at and re-evaluated.

16-5

The Radiation and Public Health Project, known as the Tooth Fairy Project in the community, measures strontium 90 levels in baby teeth and effects on their bones. It is the first study to do in-body radioactivity of levels of persons living near nuclear power reactors and in more remote locations. One of the comments that the NRC made is that we do not have controls in the study. That is not true. There are several controls that go into the study. Proximity and distance from nuclear reactors is one control. The teeth of people who were born before and after a nuclear reactor opened is another control. And the opening and closing of nuclear reactors and the teeth of children that was collected around that is another control.

16-6

During the 1950's and 1960's, concern about increased strontium 90 levels in St. Louis baby teeth which corresponded to increased childhood cancer and leukemia rates were factors in President John F. Kennedy's decision, and Congress' decision, to ratify the 1963 Partial Test Ban Treaty, which ended not some, not a permissible level, but all atmospheric and all under water nuclear testing. And what we have found in our baby teeth study, both nationally and here in South Florida, is that the levels of strontium 90 from the St. Louis study -- from practically non-detectable since strontium 90 is a man-made element only produced by nuclear weapons and nuclear reactors, to this level in 1963 when President Kennedy and Premier Khrushchev in the UK decided to stop bomb testing.

Various studies have indicated a projected decline of strontium 90 again to practically undetectable. This is the level of radioactive strontium 90 above the projected value that we have found in the teeth tested in Dade County to date. These are the average levels and these are the highest levels.

As a reference point, the baby teeth methodology is not a new one. It replicates a very significant earlier study that played an important role in American history and Dr. Sternglass was invited by the Kennedy White House to testify on the impact of those findings before the Joint Committee on Atomic Energy at that time.

What is the reference base when we say the levels are equal to the 1950's or 1956? This was a time and a period in which the United States and the former Soviet Union tested the equivalent of 40,000 Hiroshima bombs in the atmosphere according to data provided by the Natural Resources Defense Council.

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16-7 | The data on cancer rates in Southeast Florida. This is not our data. This is public health data
| from the data base of the SER Group, the Surveillance Epidemiological Report that was set into
| process by Richard Nixon when he launched the war on cancer. And so this data is not data
| that we have generated, but data that we have analyzed.

| We have found that the childhood cancer rate in the five Southeastern Florida counties have
| risen to become one of the highest in the United States and suggests a link with the areas high
| strontium 90 levels.

| We also found in this report that annual rises and decline in cancer incidents in Miami-Dade
| children under age five matched those in radiation detected in the local precipitation -- this is
| data emissions -- measured in rain by the EPA, and that chart is attached to our study.

16-8 | Cancer in children under ten in Miami-Dade and four other Southeastern Florida counties rose
| 35 percent from the early '80's to the late '90's, but it declined by eight percent in all of the rest
| of the State. This we think is significant. We argue and we assert and we respectfully submit
| to the Nuclear Regulatory Commission that the Generic Impact Statement is flawed. There are
| no -- it says that the baby teeth study does not present new information. This is new and
| significant information and the first study on the measure of in-body radioactivity, specifically
| near nuclear power plants.

16-9 | The main thing, and again I'm trying to be sensitive to the time here, is that the GEIS asserts
| that the doubling in cancer in the past half century is not due to any environmental cause other
| than cigarette smoking, failing to cite the consideration research which we've documented in
| this report that links cancer and environmental toxins like radiation.

16-10 | The NRC in this report ignores the rise in cancer rates among children, which also has doubled
| in the period. The children do not smoke. The children have not been exposed to long term
| medical X-rays, and that is simply not addressed here.

16-11 | The larger GEIS does not mention the increased sensitivity of the fetus and the infant to
| radiation exposure, which was pointed out in the Beer 5 Report through the National Academy
| of Sciences in 1990, and that report concluded there is no safe, non-linear exposure to
| radiation.

| How are we doing on time?

| Mr. Cameron: Actually, we're pretty far over and I was going to ask you if you could just
| conclude and we could get Dr. Sternglass up. I think we had you for about ten minutes.

Dr. Brown: I'm very sorry.

Mr. Cameron: That's fine.

Dr. Brown: There are many issues raised in this report. I want to focus in conclusion on what we believe is the key one, and that is, do the NRC and Florida Power and Light make adequate measures of radiation dose to the public from Turkey Point emissions? The NRC says that they do and that the public is not affected.

16-12 Our view is that the NRC cannot and should not presume that Turkey Point emissions are
harmless since it does not measure in-body levels of radioactive chemicals like strontium 90,
16-13 which is also a marker for other isotopes. In recent years strontium 90 measurements in milk
from dairy farms near the Millstone Plant in Connecticut had the same strontium 90
concentration as at the peak of atomic bomb testing.

16-14 We call for the postponement of a decision on this license application until the local health
effects and studies impacting strontium 90 on local health effects are thoroughly evaluated.

Thank you for your time.

Mr. Cameron: Okay. Thank you, Dr. Brown.

Dr. Sternglass? And then we're going to go to Harlan Keaton from the State of Florida and then
Dr. Dade Moeller. And we're going to continue on this issue and then we're going to go to Mark
Oncavage.

Dr. Ernest Sternglass, University of Pittsburgh Medical School.

TPD17 Dr. Sternglass: Thank you very much. I'll be using some slides to give you some detail that
you can see for yourself whether or not there has been any increase in strontium 90 in baby
teeth or in cancer rates among children in the county and in the entire southeast part of Florida.

The most important point that needs to be made is that the recognition that bomb fall-out
produced childhood cancer is very old. This shows the -- can we get this focused? This shows
a report by the Japanese Cancer Society from Dr. Sige (Phonetic), and you can see for yourself
that the cancer rates jumped enormously during the time of nuclear testing, beginning shortly
after 1945, typically a four to five year delay before these cancers showed, which is similar to

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| what Dr. Ellis Stewart found in Oxford University in 1956-58, that children exposed during
| pregnancy generally develop tumors at twice the rate that other children did and it took only
| very small doses of radiation to do that.

| I'm going to go through these slides very quickly in order just to have you see the nature of the
| data, and I have complete copies of these available for anyone who would like to see them in
| more detail.

| This is what happened in this country. In Connecticut cancer rates were measured since 1935
| incidents, new cases, and that is shown by the dark line. And you can see the strontium 90 that
| was measured by the St. Louis group showed the same peak, and therefore this is a very
| strong relationship that was long ago established with regard to small levels of strontium 90 in
| the diet.

| Now why did we go ahead and measure this in Long Island? That's because Long Island had a
| very large increase, 30 percent or so since 1950, in breast cancer. And so we got the teeth
| from 500 children by now, and this shows the relationship between the two; strontium 90 the
| dark line, cancer rates the other line. The cancer rates have been shifted three years because
| typically it takes three to five years for the childhood cancers to appear.

| So in that sense, we are simply repeating what the St. Louis study did and now we can show
| you how close the relationship is. When we divided the St. Louis 500 -- I mean the teeth into
| 500 -- from 500 children into components of four periods each, with close to 100 teeth in each
| one, we found a direct linear relationship for this range from only one pico-curies to one and a
| half picocuries strontium in the cancer increase rate of children under ten.

17-2 | Now with this kind of data based on 500 teeth, we repeated the story here in Dade County.
| And here we see the following interesting pattern. The last atmospheric test occurred in 1980
| and there was a big peak, going from as low as one and a half to four and a half picocuries.
| Then there were large releases, both monitored and unmonitored, from the problems of the
| heat steam generator at Turkey Point and there was another peak. Then the steam generator
| was repaired, and what we have in effect found is that there was another peak when Chernobyl
| arrived. And then when the Biscayne Aquifer was contaminated by all these build-up, we see a
| build-up in the base line. In other words, these peaks occurred on top of something else, and
17-4 | that's a very serious problem because when Hurricane Andrew came, even though the plant
| itself may have survived, what happened is apparently that much of the radioactivity in the
| canals and the stored area outside and the accumulated radioactive dust was blown up all over
| the county and in fact it reached other areas as well, because here we can take a look at --
| these are by the way data obtained from the Dade County Cancer Incident Registry that

17-5 registers cancer since 1982 -- and you see a striking similarity. Again, the cancers are not declining. They are growing among children and this is the zero to nine year group, and they come in spikes that are associated with known events that produce radioactivity into the environment.

What we have found therefore is that we greatly underestimated the effect of strontium 90, and the reason is that we didn't know until 1968, some 25 years after the beginning of the nuclear age, that a study done at the University of Oslo, a cancer hospital, that they took animals and gave them tiny amounts of strontium and they found a depression in the bone cellularity. That means the white cells, the policemen of the body were damaged. And that leads to increases in cancer of all types, infectious diseases and many other abnormalities related to the immune system.

But that was not known until many nuclear plants had already been designed, and believe me, I worked for fifteen years for the Westinghouse Electric Corporation as assistant, ended up as assistant to the vice president for research. We never would have imagined, could have imagined how serious the affect of tiny doses of strontium 90 could actually be.

17-6 But here we now see, here are two plants located in Florida, Palm Beach, Broward, Martin, St. Lucie, and they are all within 100 miles, so Palm Beach and Broward get it no matter which way the wind is blowing. And the tragedy is that when you let it go out towards the ocean, eventually it comes back with the ocean breeze.

17-1 And now let's take a look at a typical county, like for instance, Martin. And this by the way is five southeast Florida counties, Dade, Broward, Palm Beach, Martin, St. Lucie, and we see the same pattern that we see in Dade, with a big peak after the Hurricane Andrew which must have distributed radioactive debris all over the area. And we're talking about hundreds of children. 17-7 We're talking about a total of about 1800 children that developed cancer during that period in the five county area, and the increase is 35 percent above what it should have been.

Now here is the Center for Disease Control, the wonder website, showed what happened in the nearby county, Martin. Often counties like this were used by the NIA as control counties. And you can see as compared to San Francisco, which declined, when in 1989 its reactor was shut down and there was an enormous improvement in cancer rates. But your county, and you can look it up on your internet, Martin increased like that from way below San Francisco to way above.

If that is not a source for concern, then I wonder what the health department calls a reason for concern.

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| Now let's take a look at breast cancer. I think some of you in the audience may have relatives
| and friends who have developed it. This is again from the Center for Disease Control. You can
| download it on your computer, the wonder website. And you see that during the time of bomb
| testing in the 1980's, San Francisco exceeded the U.S. It was a hot bed for breast cancer that
| nobody understood. It went up to about 165 per hundred thousand in the age group over 65
| that developed most of the cancer. And you can see that an incredible decline took place by
| about half for which no other explanation has ever been advanced.

| I would like to know what other cancer therapy there exists that we in our medical schools have
| failed to find.

| Mr. Cameron: Dr. Sternglass, can you wrap for us, please?

| Dr. Sternglass: This is it. This is the last graph, and I'm just in time.

17-8 | This is again from the Center for Disease Control. Dade County white infant mortality --
| incidentally, black is almost twice as high. But you will see here that when the last of U.S. tests
| occurred there was a peak above the normal decline of 46 percent per year that has been
| taking place since 1935, except for the period of bomb testing.

| Then the Chinese bomb test. Then the French bomb test. Then the start of Turkey Point which
| increased here 50 percent. But when it was repaired infant mortality declined. Then came the
| steam generator repair here, and then came Chernobyl and it raised it again. And then
| Hurricane Andrew, still another small peak.

17-3 | But what this means is of great concern to all of us because for every child that develops
| cancer there are ten to a hundred that die of other causes in the first year of life and many are
| damaged who survive because of our ability to keep tiny babies alive. It means that we are
| endangering the welfare of the entire nation by ignoring this kind of data.

| Thank you.

| Mr. Cameron: Thank you very much, Dr. Sternglass. And Dr. Sternglass' graphs are available
| for people. Thank you. Thank you very much.

| Can we go to Harlan Keaton and then we'll go to Dr. Dade Moeller. Harlan, would you like to
| join us up here?

TPD18 | Mr. Keaton: I'm going to make this as short as I can because I know everybody's ready to go
| get something to eat, or get something anyway.

Basically, I am the representative for the State that goes out and takes the samples and the analysis -- does the analysis for what we've been talking about around the nuclear power plant. We do analysis around -- Florida has five nuclear power plants at three sites other than this one.

In our testing program, our program is audited by the EPA. We have the NRC inspectors that go out with us. We have a tremendous quality assurance program that we go through to make sure that our testing is correct. All of our standards are traceable. All I'm trying to do is let you know that what we do out there, we feel is accurate.

From that standpoint, we have a tremendous surveillance program around the nuclear power plant where we pick up things like gamma radiation, air, water, raw leaf vegetation, fish and crustacean, sediment and food crops. We take these back to our lab and analyze them on a quarterly basis and then we do send a report, after the four quarters is done, into an annual report, and that goes to the NRC for their review.

18-2 We have to date not found anything in the environment that would either increase or affect or
18-1 harm the citizens of the State of Florida, at any one of the plants. We found no environmental levels of build-up and concentration of materials. I know you've heard about testing for strontium 90. Well, yes, everybody used to test for strontium 90 and it wasn't found very much, but just because you don't test for strontium 90 doesn't mean you can't identify it. Strontium 90 is a beta emitter and we check everything for beta emissions. If you don't see elevated levels, there's not going to be any strontium there.

The next point we do is, we have an environment epidemiology group that goes and looks at cancer throughout the State. Now I'm not a part of that group, but they just finished a report today which was presented to the NRC and I'm sure that the group of scientists, the Fairy group, they have it now, and I would like to read the summary of that, and I don't mean to demean -- you know, I'm not trying to make light of that. I didn't remember the name.

This report is available. It's out in the room that we have out there. Other copies will also be available later. If I can turn to the summary page. All right.

In summary, and this is the epidemiological group in Tallahassee, they've gone over the same data that Dr. Sternglass and his group have. This is their conclusion.

"In summary, we reconstructed the calculations made by the RPHP, using the same data for which they base their claim. RPHP claims that there are striking increases in cancer rates in Southeastern Florida counties and attributes to these increases to radiation exposure from nuclear reactors. Using this data to reconstruct calculations and graphing our findings, we have not been able to identify unusually high rates of cancers in these counties. As we would

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18-3 | expect, just by chance some county rates appear higher than state and national trends and
| some appear lower. These rates fluctuate from year to year and in some situations large
| fluctuations occur with a small number of cases and small underlying county populations.
| One has to use careful scientific and objective evaluation of these fluctuations to avoid mis-
| interpretation. Careful analysis and observation of the data presented here does not support
| the alarming claims made by RPHP regarding cancer mortality rates and trends in
| Southeastern Florida counties when compared to the rest of the State of Florida and the
| nation."

| In conclusion, I'd like to read the cover letter of this that came from Dr. David Johnson.

| "Much concern has been related to us about statements made by Radiation and Public Health
| Project Incorporated on the March 28, 2001 announcement. RPHP has implied that there are
| large increases over time in cancer rates in Southeastern Florida counties and they attribute
| these increases to radiation exposure from the Turkey Point and St. Lucie power plants. The
| Florida Department and Health takes these assertions seriously and have reviewed the data
| used by RPHP regarding cancer rates of Southeast Florida. Using this data to reconstruct
| calculations and graphing the results, we have not been able to identify any unusually high rate
| of cancers in these counties. Attached is the Bureau of Environment Epidemiology report
| addressing the data and the RPHP findings. Should you need any further clarification, please
| feel free to contact me at 850-245-4299. David Johnson, M.D., Master of Science, Bureau of
| Environmental Epidemiology."

| That's all I have to say.

| Mr. Cameron: Thank you very much. Next is Dade Moeller.

TPD19 | Mr. Moeller: My name is Dade Moeller. You may have heard the name Dade before. I was
| born and reared in the State of Florida. I went here to public schools for twelve years.

| I'd like to begin though with an apology. Had I known or had any inkling of the fiasco of the
| counting of the ballots, you know, during the past Presidential Election, I never would have let
| them name this county after me.

| Now you could say why am I here? Well, I've spent my entire career in the field of radiation
| protection and I was so incensed to learn of the Tooth Fairy Project and to be able to read that
| project and the information that was put out that I -- I'm a senior citizen, so I went to the airport
| and I bought myself a ticket and I came down here because I wanted to share some truth with
| you. And as I go along I will cite back some references to my own career so you'll understand
| who I am.

My time is limited. Let me get right to the bottom line.

19-1 The Tooth Fairy Project is exactly what the name implies; it's a fairy tale. The report is unadulterated gobbely-goop and it is one of the worst examples of junk science that I have ever read in my life. There are newspapers reporters here; please don't mis-quote me, because I meant exactly what I said.

Now what is the basis for my statement? Well first of all you've seen these curves and all that was just put up and they quote a number of picocuries in the teeth. Did you see any uncertainty, markings on those numbers? No, they're given to you as precise numbers. Well in many cases the uncertainty is far larger than the number itself and they do not provide that to you. What they need to do is go take Statistics 101 and in that they tell you how to calculate the uncertainty.

The second thing that they do is they only give you picocuries. Where's the dose? Any toxicologist will tell you that the dose makes the poison and if they had calculated the doses, which I did, that would result in one or two picocuries of strontium 90 per gram in the teeth, they'd find that the dose each year is about comparable, in fact it's less, than the dose that you would receive in flying from Florida to California due to cosmic radiation on the airplane.

Now if they're really interested in reducing cancer and if they really believe these little small doses are causing it, go to Miami International Airport and every time a plane is listed as going to California, go up and warn the passengers, don't fly to California because it's going to cause cancer.

What's the third thing? He said we've analyzed 500 teeth. He said if we can get 1000 teeth in Dade County we'll have it made. That will provide clinical evidence that there's a relationship between the picocuries of strontium 90 and cancer.

Well, they need in this case to go take a course Epidemiology 101. Epidemiology does not tell you that this agent caused this affect. All that epidemiology can do is tell you a relationship, a possible correlation, between something in the environment and some ill affect. And furthermore, I went ahead and calculated it out and for the dose levels we're talking about you would have to follow more than a million people for more than a hundred years to determine if there was any correlation.

Now what are my credentials for having made these statements? Well, I worked for the U.S. Public Health Service for eighteen years. What did I do? I worked as a laboratory chemist at the Oak Ridge National Laboratory, the radio-chemistry lab, from 1956 to 1957.

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| What else did I do? I directed the Northeast Radiological Health Laboratory in Massachusetts for five years. And what did we do? We monitored strontium 90 in children. We got bones from accident victims at hospitals and we did monitoring for those fourteen states.

| In addition, I directed the Public Health Radiation Protection Training Program for five years, so I think perhaps I know just a little bit about the subject.

| Furthermore, I went from there to Harvard. For twelve years I was chairman of the Department of Environmental Sciences. For my last ten years there I was Associate Dean of the Harvard School of Public Health. I think that shows something about my credentials.

| Now let's just look at some of their claims. The compound all of this gobbely-goop with distortions. Let me give you a few.

| They said years ago, increase in breast cancer and it's due to nuclear plants. Well, in Minnesota -- well, we just heard what the Florida Department of Public Health just said. The Minnesota Department of Public Health checked their information. What did they do? It said they distort the data.

| If a county didn't have enough breast cancer, suddenly it was moved away from the nuclear power plant. If they found the county with a high breast cancer rate they moved it in closer to the nuclear power plant. I wondered which is easier, move the counties or move the plants? There must be some reason for doing it.

| The Millstone Plant. At the Millstone Plant they charge that the strontium 90 in the milk nearby was due to releases from the Millstone Plant. Who went in there and proved them wrong? The administrator of the U.S. Environmental Protection Agency. He had his crew go in and sample the strontium 90 and determine its source. There's nothing complicated by this. And they would never do it here around Turkey Point. If you went into the environment here and determined the source of that strontium 90, and you can do it just like you do with DNA today, you know, to capture a person who murdered someone years ago, the same processes are available for strontium 90. And in Connecticut -- they mentioned Connecticut earlier today -- they tested it and strontium 90 was totally from fall-out. It was not at all from those nuclear plants.

And then he mentioned the National Cancer Institute. And in that they challenge the Sternglass conclusion that breast cancer was caused by nuclear power plants, and in this book, if you read their material, they're always telling you, read the book *The Enemy Within*, you know, come buy my book *The Enemy Within*. Well, if you read that book it says in there, in a secret memo the National Cancer Institute said all of their calculations were correct. And then they have an appendix in the book. So I flipped to the appendix. I want to find that wonderful memo. Well, it wasn't in the appendix. So why if it endorsed their work, it's the first time it ever happened, if it did, for a long time, finally it's been endorsed, why don't they show it?

Well, I know the man who wrote the memo, Charles Land, Dr. Charles Land. He's an epidemiologist. And I called Charles and I said, "What's the scoop here? Did you really endorse it."

And he said, "In that memo they can add one and one and get two, and they can multiply two times two and get four, but their conclusions were totally wrong because in-put data was wrong and everything about the analysis was wrong."

Now am I the only person in the world that's read this? In 1971, one of the first times I met Dr. Sternglass, and it was at the annual meeting of the Health Physics Society in New York City. And it had never happened in the history of the Society, every ex-president, every living ex-president of that Society, signed a statement saying that Sternglass and his crew did not know what they were talking about. How do I know that? I was present in the Society and I appeared before the T.V. cameras and I presented the statement.

If you or I had said a statement, if you said to me, "Dade, you're wrong on your study," I would go correct it. Not them. They have no shame whatsoever. No shame whatsoever.

The National Academy of Sciences. I was on the committee that reviewed the relationship between the doses from radiation and health affects. Well, we thought out of courtesy, let's have Dr. Sternglass appear. He appeared and he made all the claims. He hadn't changed one iota. They're the same old claims he's always made. And he made those claims and we said, "Well, sir, where are the data?"

And he said, "Well, I'll give you the data."

Well, twenty years later we've never gotten the data. And in their report they stated that again, he did not know what he was talking about.

Let me wrap it up by saying he violates every principal of good science in his work. Don't be taken in by his comments. Check his credentials. If you have a leak in your kitchen faucet do you call an anthropologist or physicist to come repair it? No, you get a licensed plumber. If

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| your spouse is sick or you're sick or your children are sick, you go to a medical specialist, and
| what do you seek? If it's a real serious illness you seek a Board Certified medical doctor.

| Let's ask, are they certified? There are groups, there are boards that certify you for rad
| protection, there are boards that certify you in environmental health. I'm certified both in
| radiation protection and in environmental health. I can answer. I looked just before I came
| down at the American Board of Health and none of their names are in there.

| Thank you for your time. It's been a pleasure to return to my home state.

| Mr. Cameron: Thank you very much, Dr. Moeller, and --

| Dr. Sternglass: I might have one minute to answer these terrible charges?

| I would like to read --

| Mr. Cameron: Dr. Sternglass, I'm going to give you -- in light of the nature of what was said, I'm
| going to give you one minute to do that, and please, we have to move on.

| We're going to give him a chance to do it. Go ahead, Dr. Sternglass. Go ahead.

| Dr. Sternglass: I'm reading from an article from Health Physics. It's Developments, Successes,
| Failures and Eccentricities by Dr. Carl D. Morgan, Ph.D., who founded the Health Physics
| Society of which Professor Moeller was at one time a president.

| And this is what he says. I'll just read this paragraph.

| "It was a great disappointment to me to see the change in Health Physics, an organization of
| which I have been a principal organizer. I was the first president of the Health Physics Society
| and I believed then and until about 1975 it to be a professional and scientific organization to
| protect people from exposure to ionizing radiation. Now it became clear that this was no longer
| the case. Health physicists, at least in the U.S., refuse to bite the hand that feeds them, the
| Department of Energy. It saddens me to say that this Society for whose growth and
| development I once worked so hard, now is demonstrating that its primary purpose is not to
| protect the employer or employee or the members of the neighboring public, but to protect the
| company that signs the paychecks. A few years earlier Dr. Dade W. Moeller, the president of
| the Health Physics Society, in its presidential message, urged health physicists, speak out and
| make known our position on such issues as nuclear power safety and radiation protection
| guides and let's put our mouth where our money is."

| Thank you.

Mr. Cameron: All right. We took a little bit longer on this particular issue because of its importance. I think that the NRC has heard a lot of information on it, pro and con, and I apologize for our running late and thank you for your patience. We're going to put on a few people from the Sierra Club, beginning with Mark Oncavage, and we're going to go to some people from United Way and the Chamber of Commerce.

Let's go to Mark Oncavage and then we'll go to Barbara -- is it Barbara Lang? And Frank Pitz and also Diane Jacobs who we heard from today.

Go ahead, Mark.

TPD20 Mr. Oncavage: Thank you.

20-1 The Miami group of the Sierra Club is calling for safety hearings concerning the license renewal of Turkey Point nuclear reactors. The Miami group also calls for an Environmental Impact Statement that studies site specific health and safety issues.

20-2 This past October when Florida Power and Light applied for license renewal, I petitioned the United States, the Nuclear Regulatory Commission, for safety hearings. I quoted a study of spent fuel consequences by Brookhaven National Laboratories, this one right here, that was commissioned by the Nuclear Regulatory Commission. If there was an accident in the spent fuel pool and the cooling water was drained, the spent fuel would heat up and set itself on fire.

The study, I believe, only accounted for one decommissioned reactor with forty years of spent fuel on site. Turkey Point has a combined fifty-seven years of spent fuel with more on the way.

The consequences for this accident of a generic reactor range from 53,800 latent fatalities to 143,000 latent fatalities, and permanently contaminated land estimates range from 869 square miles to 2,790 square miles.

20-3 Eight months prior to Florida Power and Light's application for renewal, I asked the Nuclear Regulatory Commission for their safety studies relating to the development of the Homestead Air Base and the commercial airport five miles from Turkey Point. They sent me two studies written by Florida Power and Light. In June, 2000 the Nuclear Regulatory Commission issued a safety assessment saying commercial airport development was safe, but also said, quote, "it should be noted however that the margin between the estimated aircraft crash frequency and the acceptance guidelines of SRP 3.5.1.6 is relatively small."

I asked the NRC for a formula assumption data and line by line calculation so independent experts could verify the conclusions. The NRC denied my request.

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| Here's what I asked and here's what looked wrong. The NRC is responsible for public safety,
| but the NRC's formula wasn't used. It was done using Department of Energy calculations, but
| the Department of Energy has no responsibility for public safety as the NRC does.

| Bird air strike rates were under-valued. State averages and national averages hardly compared
| to the birds flying around Biscayne National Park and Everglades National Park.

| Caribbean, Central American and South American general aviation rates were totally ignored.

| When the formula asked for the height of the structures to calculate crash probabilities, the 400
| foot tall smoke stacks mysteriously disappeared from the calculations.

| All this air crash safety information should be in the Generic Environmental Impact Statement
| and the site specific Environmental Impact Statement, but it is not.

| In January of this year an Atomic Safety and Licensing Board met to hear my petition
| arguments. Administrative Judge Thomas Moore, asked FP&L lawyer and the NRC lawyers to
| show him in the Generic EIS where air crashes into spent fuel pools have been studied. They
| had no answer. He asked them, "Where in this GEIS is the safety study for spent fuel pool
| damage caused by hurricanes?" They still had no answer.

| These embarrassing moments did not help my cause because my safety -- my petition for
| safety hearings were still denied. My petition for these same hearings is on appeal to the NRC
| Commissioners.

| Meanwhile, my Freedom of Information Act request finally got answered. I received a letter
| from Katherine Barber, counsel for the NRC staff, and I quote, "Ms. Reed states in her
| response that the calculation you referred to was performed by Florida Power and Light and
| consequently that the NRC does not possess the information you requested," end of quote.

| This means that the NRC told the Air Force it was safe, having never seen the data,
| assumptions or line by line calculations. I assume they have seen the formula.

20-4 | This abandonment of responsibility by the NRC did not sit well with me. I wrote a letter to
| George Mulley, Jr. of the NRC's Inspector General Office. My complaints were: One, isn't there
| a legal requirement for the NRC, not the licensee, to provide a safety evaluation for a final EIS?

- 20-5 Two, how can the NRC ignore its own standard review plan?
- 20-6 Three, how can the NRC insure public health and safety and approve airport development when it doesn't possess all the data and assumptions that were used in the calculations and cannot verify the licensee's conclusions?
- 20-7 Four, how can a citizen concerned for its own safety get information that's exclusively held by the licensee?
- 20-8 Five, shouldn't the lead agency, the Air Force, be told that there are major safety discrepancies with the NRC methodology concerning the closeness of the proposed commercial airport to the nuclear plant?
- 20-9 Six, if the licensee, which is a large land holder in the area, is the only entity with all of the safety-related information, how can the NRC be sure there is no conflict of interest? Developing land near a new commercial airport could be an extremely lucrative enterprise.
- 20-10 Seven, another conflict of interest may arise if the licensee thinks that a negative safety assessment would damage its chances of obtaining a license renewal.

I have never received a response to this letter from the NRC's Inspector General. I do hope that the NRC officials and the Florida Power and Light officials will reconsider their opposition to holding safety hearings on the license renewal for Turkey Point.

Thank you.

Mr. Cameron: Thank you very much, Mark.

Let's go to Diane Jacobs and then to Frank Pitz and then we'll go to some other people and hopefully we'll get you all in.

TPD21 Ms. Jacobs: My name is Diane Jacobs. I am a member of the Sierra Club, but also I'm a resident of Miami-Dade County for over fifty years.

21-1 In the GEIS Supplement filed, specifically Section 4.7.1, the statement for Turkey Point criticizes the baby teeth study for not performing environmental testing for strontium 89. We must realize how inconclusive such testing would be. With a half life of 60.5 days, much of this radioactivity would decay while this chemical sits in the rad-waste hold-up tank.

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- | More of the activity would decay as it gets released, deposited and absorbed in the environment. More activity would be lost as it is collected and transported to an independent laboratory. And even more of the activity would be lost as it sits in the lab awaiting testing.
- 21-2 | Much more reasonable and accurate would be for the NRC to, number one, monitor all gasses and liquid effluent for strontium 90; two, put monitors in the places where the unplanned, unmeasured radioactivity gets released to the environment; three, have random samples of food sources measured for strontium 90, such as local vegetables, fish, blue claw crab, Florida lobster, local milk and local drinking water; four, publish the NRC's own measurements and strontium 90 levels in baby teeth; five, correlate all the listed monitoring procedures and cancer statistics to accurately find out if or if not there's a significant relation between nuclear plant operations enhancer.
- 21-3 | The methodology presently used by the NRC is to calculate cancers only by using what comes out of the stack, and this appears to be the weakest method you can possibly use. Whereas the correlation between strontium 90 levels actually found in human bodies and cancer rates seems to be the most reliable method.
- 21-4 | The Generic Environmental Impact Statement published in 1996 is obsolete in light of much more recent study. I believe the NRC should postpone its decision on extending the license of Turkey Point and all other reactors until it has thoroughly evaluated all available information, including recent reports and significant research in progress on nuclear reactor emissions and public health.
- 21-5 |
- | Thank you.
- | Mr. Cameron: Thank you very much, Diane.
- |
- | Next, let's go to Frank Pitz.
- TPD22 | Mr. Pitz: Frank Pitz with the Broward County Sierra Club. And I want to join Mark in that
- 22-1 | request to call for safety hearings.
- 22-2 | Upon the global environment in health we have a monster waiting to be unleashed and I'm talking about 400 million metric tons of spent nuclear fuel, which is festering like a boil on the face of humanity.
- |

This poses a danger for over a half a million years and no one knows what to do with it or how to contain it. It is certainly not out of sight out of mind, so we cannot ignore it and there's not something tucked away in the depths of the closet so that we forget it. It is here. It is real and it is extremely dangerous to humanity.

In addition to the day to day adverse health affects posed by nuclear power, we also have this gargoye hanging over our heads waiting to be unleashed.

22-3 We are here today to talk about relicensing a twenty-nine year old nuclear power plant, a renewal that isn't even up for another ten to twelve years. When the current renewal is up for review this plant will be forty years old. Longevity in humans is admirable, longevity in nuclear power plants is hazardous.

Add this increase in plant life span to the present day to day perils associated with radioactivity release from it and we have a ticking time bomb right here in South Florida.

Why the rush to relicense? Why not safety hearings?

The current operating permit does not expire for ten to twelve years. Why can't we wait until then? There certainly is not a pressing need to go through this process at this time unless of course it is political expediency.

These aging reactors pose more of a threat to civilization than all of the supposed missiles that President Bush envisions while he lies sleeping in his bed.

The change of billions of dollars to expend to build a missile defense system would best be spent on sustainable energy programs which would wean us from causal fuel, nuclear fuel and consumption as well as the radioactive nightmare of nuclear power.

22-4 Leave this license in place until its original expiration date and then come back to the people and talk about renewal. For the sake of political opportunism you would further endanger the health of residents of South Florida. I say no to relicensing at this time.

Thank you.

Mr. Cameron: Thank you, Frank.

Let's go next to Mary Finland and then Mary Donworth and then Dave Friedrichs. Mary Finland from the Homestead Chamber of Commerce, is she still with us in the room?

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| Okay, how about Mary Donworth?

TPD23 | Ms. Donworth: Good afternoon. My name is Mary Donworth. I am the vice president of
| Agency Relations and Fund Distributions at United Way of Miami-Dade and I have worked at
| United Way for eleven years.

| I'm here obviously not to talk about environmental issues or safety, but to talk about the
| partnership between United Way and FPL's Turkey Point in meeting community needs.

23-1 | In addition to meeting the energy needs in our community, Florida Power and Light, the IBEW
23-2 | and its employees raise over a million dollars for community needs in Miami-Dade County.
| Turkey Point itself employees contribute over \$150,000.00.

23-3 | What does that mean in terms of services? It means quality care and education programs,
| through programs like the YMCA right here, the Brethrens Christian Association. It means food
| for the hungry at the Homestead food kitchen. It means therapeutic programs for
| developmentally disabled children and at the Association for Retarded Citizens.

| In addition, United Way also encourages people in the community to step up to what we call the
| leadership circle. Those are people who give \$1,000.00 or more to United Way for health and
23-4 | human services. Turkey Point itself has 62 leadership givers which is a tremendous
| commitment.

23-5 | In addition to the very, very significant report, the financial contributions, FPL, the IBEW and its
| employees contribute thousands of hours of volunteer services in the community, which is
| tremendous.

23-6 | In conclusion, I just want to say that United Way is extremely proud of its partnership with FPL
| in providing services for those in need in our community.

| Thank you.

| Mr. Cameron: Thank you very much, Mary.

| Let's go to Dave Friedrichs from the Dade County Farm Bureau.

TPD24 | Mr. Friedrichs: Good evening. My name is David Friedrichs. I'm executive director of the Dade
| County Farm Bureau, representing a membership of 3,064 members in Dade County.

24-1 The Dade County Farm Bureau stands unanimously in support of Florida Power and Light's relicensing efforts for their Turkey Point Plant.

24-2 In addition to the many other organizations and individuals here this afternoon who have cited to you many different ways in which they actively support the community and are a part of the community, which they are, they also actively support and help and aid and assist in every way possible agriculture in Dade County.

24-3 Despite our loss of revenue sources from other areas and loss of the airport and the Air Force and all that sort of stuff, agriculture still is the main engine of Dade County, Florida, and we find no reason not to support, after due consideration of presentations both from FPL and from other people not in favor of FPL's relicensing, we find no reason not to support them.

On a personal note, I have listened to, this afternoon, a lot of various presentations from the scientific community, obviously pros and cons. These are naive, average American individuals. I have a barometer that I go by. I'm not attempting to be funny, but I'm very serious.

When I tell you that I don't wake up every morning to see the Miami Herald screaming in the biggest headlines it's possible that I'm going to die most any minute from Florida Power and Light's presence in Turkey Point, I have a little problem believing that if that were true they would be letting me know it on a daily basis.

Thank you.

Mr. Cameron: Okay, thank you, Mr. Friedrichs.

Let's go to Mr. Velazquez.

TPD25 Mr. Velazquez: Thank you for the opportunity. My name is Arnold Velazquez. I'm a resident of Miami-Dade County since 1960.

I'd like to start by thanking Mr. Brown because he woke me up yesterday morning when I read the article in the paper. That was the catalyst that made me come here today and spend five hours listening so I could speak my mind.

Just aside, I was looking at a presentation of Dr. Sternglass, and I just came to the realization that the Cuban immigration and the Haitian immigration have a strong relationship to the peak that he shows in there. So I have a hunch that we could infer that the Cubans and the Haitians are contributors to whatever things were happening. That's statistics for you.

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25-1 | I'm a graduate, electro-mechanical engineer from the University of Miami. I have a Master's in
| Industrial Engineering, and I'm a navy veteran, electrician, ship electrician. I worked twenty-one
| years for Florida Power and Light. In 1991 we decide to part company. Still, it's a good
| company. Still a good neighbor. I'm proud to my association with the company, and today I
| have no restraints to speak my mind.

25-2 | Before I was accused, well, you get your paycheck from Florida Power and Light. Today that's
| not the case. Today I can speak out my mind. And let me tell you, nuclear energy is one of the
| most reliable source of energy that we have today.

| If we're going to look at coal with the same scrutiny that we hold nuclear power plants, we
| would have a long time ago shut down the coal mines in Kentucky and West Virginia. Black
| lung is real. We see people today, after all the improvements made in coal plants, and I'm not
| indicting the coal industry, please. I'm making a point.

| Everything has a price. If we would look at the vaccine used for polio and we see that there is a
| small number of children that die from vaccinations every year. That mean are we going to
| stop vaccinating the rest of the population because unfortunately some children react adversely
| to the vaccination? No.

25-3 | You could find a reason to shut down Turkey Point tomorrow. Would that serve the purpose?
| Would that be in the best interest of the community? No.

| If we look at the airline industry, we would still be looking. In the 1980's if the trains were to
| come by towns were received the way that we receive some of the power plants today, there
| would be no railroads in this country. People will be against the railroad, because of the
| pollution, because of the noise.

25-4 | So you have to look and weigh what are the benefits and what are the cons against anything
| you do in life, and by far nuclear power is the most reliable source of energy that we have
25-5 | today. Doesn't contribute to the greenhouse effect. Doesn't pollute?

25-6 | If anyone wants to go and see a nice family of manatees, you can go to any of the discharge
| canals in power plants and you're going to see the family of manatees, especially in the winter
| months. They go there because it's warm. Manatees know better.

25-7 | So again, there are pros and cons, and I believe that nuclear power far out-weighs the benefits
| that we derive from it and the proffers of organizing a committee of private citizens, because I
25-8 | think there is a lot of mis-information being pumped into the public today. This article here is
| one example of that. This is a crying shame that people will lend themselves to these kind of

mis-information and scare tactics. This is not fair to the public. It's not fair to our community and I would like to see them pack and go somewhere else and go ahead and poison somebody else's mind.

25-9 This article here only talks about Turkey Point and St. Lucie. How many of you know another nuclear power plant employer? Crystal River, how come it's not in that study? If you're going to be objective about your analysis, your study, you include all the variables. So take it for what it's worth. All the gentlemen that spoke, spoke very eloquently about it. I don't think I can match his wit and his years of experience, but I tell you one thing, he hit it right on the nail.

25-10 I want to thank you for the opportunity. I think it's worth it and you have the strong advocate in nuclear power. Today we are seventy percent dependent on foreign oil, and if you thought that in the 70's we had it bad, wait if we lose the power, the fuel coming from the Middle East. We would have to come up with alternatives for sources of energy, and not next week, not ten years from now. We need today. And in my mind, my professional opinion, nuclear power is the answer.

25-11

Thank you.

Mr. Cameron: Thank you, Mr. Velazquez.

Let's hear from Mr. Munns and Mr. Rothschild and then Elvira Williams and Kristy Doyle Bailey. Do we still have Mr. Munns here from Redlands Company?

Unknown Speaker: (Inaudible.)

Mr. Cameron: Oh great. Thank you. Then give our apologies to him that we didn't get to him.

How about -- I know Mr. Rothschild is here and then we'll go to Elvira Williams and Kristy Doyle Bailey.

Mr. Rothschild.

TPD26 Mr. Rothschild: Good afternoon. My name is Rubert Rothschild. As you can see, I'm here in a dual purpose. I'm a scout leader and I'm an FPL employee.

In my employment with FPL I work in the materials manage department. I'm what they call a technical reviewer. I review purchase documents prior to them going to the agents to make sure that the -- all the requirements are correct, all the engineering is correct, that it meets the current designs and all the regulations, local and State and Federal regulations are met, even before it gets to the buyer.

Appendix A

| In my secondary capacity as a scout leader, or as a scouter, not a scout leader, I'm the training
| chairman for this District, from 152nd Street down to the Monroe County line. In that capacity I
| have the responsibility to train the leaders for approximately 75 units, Cub Scout, Boy Scout,
| Adventure Program leaders.

26-1 | Because of the facilities at FPL, the Scout Camp that FPL makes available to us, this is the
| perfect facility to train leaders. Mr. Hovey, who for the past few years has been the chairman of
| the Friends of Scouting Campaign so that we raise money for our Scout Council, he's been very
| instrumental in that. He's also been instrumental in allowing the use of facilities to train Boy
| Scouts in the Atomic Energy Merit Badge. Over the last six years we've trained approximately
| 36 boys each year. We get to use the facilities of the control room simulator, the dress-out
| facility and also the survey meters and the boys come away with a very good merit badge that's
| a pretty tough one to get in most areas, except in areas like this.

| Let me step aside a little bit. I just came back from vacation and part of the vacation that I took
| was out west. I got to drive a little bit on Route 66 in a couple of areas. This morning on the
| radio they were talking about a Route 66 Association. You heard the report. But part of the
| report was saying that they were meeting out in California and there was an association of
| people that cared for Route 66, and there was also an association, when they came out there,
| they brought their old cars. There was cars from the 40's and 50's that were still running and
| people were talking about even older cars that they were going to fix up and bring out there.

26-2 | Now it seemed to me there's a correlation between those old cars. If they're able to fix an old
| car and make it continue to work, we should be able to fix this nuclear plant and maintain it in a
| way that it can keep running safely and efficiently. And that's part of what I do. I make sure
| that the maintenance department and the haz-mat of spare parts and that the parts they need
| to maintain this place sufficiently and correctly.

| Thank you.

| Mr. Camerson: Thank you very much.

| Is Elvira Williams still here?
|

How about Kristy Doyle Bailey?

Okay, let's go to Mr. Luis Dilan.

TPD27 Mr. Dilan: Good afternoon. My name is Luis Dilan. I'm with the Vision Council and I'm also a Homestead resident here for twenty years.

This is a letter for record.

27-1 "On behalf of the Vision Council we wish to register our support for the relicensing of the Turkey Point Nuclear Power Plant. The Vision Council is an economic development agency here in Homestead, and the mission is to encourage the expansion of existing business and to recruit appropriate new businesses for the local area. We face a number of obstacles in our effort, including remoteness of major markets and a lack of a major technical base of raw materials."

27-2 "One of the things we do have is adequate power. We are fortunate not to be facing brown-outs and wondering each day whether we will have lights and cooling. Many of us remember the weeks after Andrew when the sound of generators was a consistent reminder of how much we have taken our normal power sources for granted."

27-3 "In addition to providing needed power to our locale, the Turkey Point facility is an important economic engine in itself. The number of people employed and their wage base is unparalleled in our area. Mr. William Fruth, a well known economic development planner, has stated that the best single industry a community can have is a nuclear power plant facility, because it generates capacity for business, it's non-polluting and a tremendous payroll capacity."

27-5 "Perhaps as in a community such as ours is the fact that the plants employees are our neighbors, our friends and important contributors to the life of our community. They are active in our little leagues, churches, civic and governmental organizations. FPL at Turkey Point is also a responsible citizen. Just one example is the remarkable job they have done in protecting and increasing the population of the endangered American crocodile."

27-7 "You're aware that much of Europe has directed its present and future power needs to nuclear energy to relieve dependency and import oil. We all should be aware of the proven security record of the nuclear power plant industry and the safeguards and security required at such installations."

27-8 "Thousands upon thousands of South Florida residents are confident of the plant's safety, its management and security they provide every day, because they like us, live in close vicinity to the plant."

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| Thank you for your attention, Robert Dennison, Chairman."

| Thank you.

| Mr. Cameron: Thank you, Mr. Dilan, and we'll attach this to the record. Thank you very much.

| Let's go to Brian Thompson and then to Steve Showen.

TPD28 | Mr. Thompson: Good evening. My name is Brian Thompson. I'm the business manager for
| System Council U-4 for the International Brotherhood of Electrical Workers, which represents
| over 3000 unit employees on Florida Power and Light property throughout the State of Florida.

| One of those local unions, Local 359, is located here in Dade County, which represents over
| 300 of the union employees employed at the Turkey Point nuclear facility. Those employees
| include very highly skilled and professional craft workers in the operations, maintenance,
| electrical and instrument and control fields.

28-1 | I'm here today to speak in favor of the twenty year license renewal and continued operation of
| the Turkey Point nuclear facility.

| As business manager for the union, three of my most important priorities are safety, the safety
| and well-being of employees, the safety and well-being of the public, training of our employees
| and the environment in which we all live.

28-2 | On Florida Power and Light property we have what is known as a Joint Safety Program, which
| program through committees insures both the company and union have an equal say to provide
| for the safety of the employees, safe plan operation, safety to the public and environmental
| protection.

| I am proud to say that as business manager I have actively participated on the Corporate
| Safety Committee for the past eight years in the Nuclear Joint Safety Program. This committee
| is responsible for studying and consistently reviewing the safety rules, policies and procedures
| for which the plant employees must adhere to and which the plant must operate under.

28-3 | As a result of our efforts and the true dedication of these rules, policies and procedures by the
| employees of Turkey Point, the facility has consistently been recognized as being one of the
| safest and most reliable nuclear power plants both in the United States and in the world. The

28-4 | only nuclear power plant in the United States to receive three consecutive superior ratings from
| its regulator, the Nuclear Regulatory Commission, spanning the years of 1994 through 1999.

Safety performance indicators, consistently in the top percentile of the nuclear plants throughout the United States. And a quest for excellence aware from an independent assessor in 1995, 1998 and the year 2000 for excellence in nuclear plant operation.

28-5 In the area of training, both the company and union have developed and consistently oversee some of the most vigorous training programs within the company for its employees. Operators that operate the plant must undergo fourteen months of intense initial training to even qualify for their jobs, and must re-qualify for their position every six weeks through their careers in a one week training course to insure proper and safe plant operation.

Most of the skilled craft workers were trained through a four year apprentice program in which they were taught their skills and technical abilities and must undergo routine annual training to insure outstanding performance skills are maintained to keep the plant reliable and well maintained.

All employees are also trained on a regular basis for even the unlikely event of an emergency. Quarterly the plant employees conduct drills and practice their skills in emergency response and readiness. They also conduct drills which include representatives from local, State and Federal agencies who coordinate activities for the public safety, as well as regular safety training each and every month.

28-6 Environmentally, the plant must meet very strict and stringent radiation safety standards designed to protect the employees and insure the community health and safety.

28-7 The company consistently monitors the air and water quality around the plants and surrounding communities to insure these standards are maintained.

28-8 Over the past 28 years since the plant has been operational, I believe the employees of the Turkey Point nuclear facility and the company have established themselves as good stewards of our environment. They have clearly demonstrated their commitment of managing and achieving a careful balance between the environment and producing a very cost effective, clean, safe and reliable source of electricity that is possible at all time.

28-9 For these reasons and in closing, I'm asking that the license renewal for the Turkey Point nuclear facility be approved so that we can keep this very valuable source of energy for the community well into the future.

Thank you.

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| Mr. Cameron: Thank you very much, Mr. Thompson. Do you want us to attach that to the
| record? All right, thank you very much.

| Mr. Showen, Mr. Rydholm and Mr. Cullen. Mr. Showen?

TPD29 | Mr. Showen: I am Steve Showen. I'm a concerned citizen having lived in Dade County for
| nineteen years.

29-1 | The ultimate consequences of environmental health is human health. Before renewing the
| license at any nuclear power facility the first consideration should be public health and safety.
| Research by the Radiation and Public Health Project indicate a correlation between operation of
| nuclear power plants and childhood and adult cancer.

29-2 | The Federal Government permits FP&L to release radioactive materials into the environment as
| a function of normal operations. The National Research Council Committee on the biological
| affects of ionizing radiation has found that there is no safe level of exposure to radiation.

29-3 | Strontium 90 is a major component of permitted radioactive emissions. Never having existed in
| nature, created only in atomic bomb blasts, in nuclear reactors, it is a known carcinogen. There
| has been no above ground testing for decades. Strontium 90 presence in the environment is
| increasing rather than declining, as one might expect.

| Consider a moment the effects of ingesting and retaining in the body radioactive SR 90 over
| one's lifetime. The Tooth Fairy Project is a national study conducted by the Radiation and
| Public Health Project which has begun to tackle that very question, by tracking the levels of
29-4 | strontium 90 in the body, in the baby teeth of question. South Florida is proving to have the
| highest levels of strontium 90 in teeth nationwide, and according to RPHP, curiously, among the
| highest childhood cancer rates as well.

29-5 | Extending the operation of the nuclear power plant for years beyond its design life raises a
| whole host of safety questions, not the least of which is the matter of accumulation of nuclear
29-6 | waste. But the question of the safety of normal operations emissions should have been
| answered a long time ago. We must determine the radiation cancer link before proceeding.
| Let's find the answer. Let's put public health first.

| Mr. Camerson: Thank you very much, Steve, for those comments.

| Mr. Rydholm?

TPD30 Mr. Rydholm: Good afternoon. My name is Derek Rydholm. I represent the Homestead Air Reserve Station.

We talked a little bit earlier about Hurricane Andrew and the loss of Homestead Air Force Base to the local community. What's left of that is an Air Reserve installation and I can echo the sentiments of the local community, being an active member of the Military First Committee, and the sentiments that we have shared throughout the base, that the impact of the employees and the partnership that we have with Turkey Point are both felt with us, and I can understand recognizing the City of Homestead and the problems they're having are the problems they've had as a result of the loss of the active duty population of Homestead have been very difficult.

30-1 We endorse Turkey Point. We have found nothing but strong support in what we've done with
30-2 them. Prior to Hurricane Andrew we had an Air Force water survival training center that was based right there at the mouth of the cooling canals and I have utilized that. We've utilized the pavilion for functions in our wing and at our base and have been very happy with that.

As a community member, and I've lived in the local community for twelve years, I live in Key Largo right now, I have a number of friends that work out at the plant and they have nothing but good things to say. They're very content and very happy with their jobs.

30-3 Once again, from our prospective as a community partner with Florida Power and Light and with Turkey Point, Homestead Air Reserve Station endorses the renewal of their license.

Thank you very much.

Mr. Camerson: Thank you. Is Mr. Cullen still here from Monroe County? Sorry we kept you waiting.

TPD31 Mr. Cullen: Good evening. I'm the radiological emergency planner for Monroe County Emergency Management. I'm also a former resident of New York City and I was curious to see why, with the slides that were up here, an analysis is being made between the radiation, particularly strontium 90, for Dade County in comparison to Suffolk County. As you all know, there was a nuclear power plant Shoreham up there and I would assume that was the reason for the analogy. I double checked my facts with my boss, Irene Toner, and Shoreham never went on line. So I would think that any of the results that we're showing for Suffolk County would be based on something other than a nuclear power plant.

Ms. Toner worked at that power plant in emergency planning up until the time it was deactivated or shortly before it was deactivated, and the plant never actually went on line. I don't even believe they loaded fuel up there.

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- 31-1 | It's strange though how the more things change, the more they stay the same. I've had an opportunity to read your Impact Statement, and I think you've hit the nail right on the head. I think you've done your homework. I read the report from the Florida Bureau of Health. I work with them on almost a daily basis in my job. I trust their methodology. I trust their analysis. I trust their findings.
- |
- | I have a problem with some of the other reports that I've read. I think we've had enough on that today.
- |
- | Just a couple of questions for the group. The half life of strontium 90 I believe is almost 29 years. By half life that means that half of what fell is still around and in another 29 years half of that will still be around. So if we're talking about atmospheric stopping in the 1980's, my calculation is that at least half of that is still around.
- |
- | I'm also curious with Hurricane Andrew, if we had winds of 150 miles an hour, why the dust would fall in Dade County and wouldn't be blown out to Naples or some other place.
- |
- 31-2 | The other dichotomy -- I don't know if there was any planning in this -- today is the day before the release of Jurassic Park III and while some people may bemoan the loss of the dinosaurs, if I'm correct we still have some descendants on earth. We have crocodiles. We have alligators. We have manatees. I think it's significant that in the area around the three nuclear power plant locations in Florida, obviously here at Turkey Point, major ground, major habitat for the American crocodile. We certainly have alligators. I believe the State of Florida has a million alligators. They are not dying off.
- |
- | Manatees are at the Turkey Point plant. Crystal River is a habitat of the manatees. A number of other endangered species are thriving at the nuclear power plant at Turkey Point. And just to show you how you can twist things around and why you have to really analyze it, I think that if you were to listen to what was being said today, an argument could be made that the Sierra Club supports the use of fossil fuels in environmentally sensitive areas, because that is the only viable alternative to nuclear power. I'm not saying that that is what they're doing. I'm just saying that you can twist things around to make it appear that way.
- |
- 31-3 | I hope that you will take your own reports, your own analysis and grant the license renewal here. I moved from the northeast because I'm sick and tired of the smog and pollution that's up there, and I know that that comes from fossil plants and I don't want to see any more fossil plants down here in South Florida.
- 31-4 |
- | Thank you.
- |

Mr. Cameron: Thank you, Mr. Cullen.

I'd like to thank everybody who is here, still on their feet so to speak, and thank you all for your comments today and your patience. I don't think that we missed anybody who signed up for the meeting.

We are going to be here again tonight. Thank you.

Appendix A

Transcript of the Evening Public Meeting on July 17, 2001, in Homestead, Florida

[Introduction, Mr. Cameron]

[Presentation by Mr. Grimes]

[Presentation by Mr. Wilson]

[Presentation by Mr. Brandt]

[Presentation by Mr. Snodderly]

Ms. Sprinkle: I'm Patricia Sprinkle and I'm a Miami-Dade resident. I just want to know why they're applying in 2001 for something that doesn't expire for ten years?

Mr. Cameron: Good question. Chris?

Mr. Grimes: The typical time that it takes to design and construct a power plant to replace a plant of this size is on the order of about ten years. And so the planning horizon for additional generating capacity needs to start now and we're seeing license renewal interest for those plants whose licenses expire in the 2010 to 2020 time frame. These applications expire in 2012 and 13 or 13 and 14.

Mr. Cameron: Okay, thank you.

Anybody else on the process? Yes, sir?

Mr. Hancock: I'm Ross Hancock from Homestead Sun Newspaper. I have a question for Mr. Wilson.

In the environmental analysis of renewal, would you say you use the latest technology available throughout the developing world, developed world, for this type of analysis?

Mr. Cameron: Jim, you may want to cover that after. Charlie has some information on that in his presentation. So let's -- I'll mark that on the board so we don't forget it. We'll come back and answer that for you, okay?

Mr. Wilson: I'd like to speak with you after the meeting if you have any questions about Charlie's presentation.

Mr. Wilson: Okay, to summarize, the impacts of license renewal are small in all impact areas. In comparison, the impacts of alternatives to license renewal range from small to large. Therefore, the staff's preliminary conclusion is the license renewal option is worth maintaining for consideration by energy making decision makers.

To recap the current status. We issued the Environmental Impact Statement for Turkey Point in June of this year. We're currently in the middle of a comment period that ends on September 6th, and we anticipate addressing the comments that we receive during the comment period, finalizing the document and issuing it before the end of January, 2002.

This slide gives you information on how to access the Environmental Impact Statement for Turkey Point. You can call me at the number there and I'll send you a copy. The document is at the Homestead Library across the street. It's available on the web and the address is here on the slide.

The final slide is the addresses for how to provide public comments on the Environmental Impact Statement for Turkey Point license renewal. You can send them in writing to the address given here. You can send them to the E-mail address. You can appear in Rockville and deliver your comments in person, or you can give them at tonight's public meeting.

Mr. Cameron: Okay, thanks, Jim.

Charlie, maybe you'd be a good person to initially address this gentleman's question on, are we using the latest technology to evaluate environmental impacts. I think there was some implications that some of the things that you said that tell how technology is used, but could you address that?

Mr. Brandt: Do you still have that question?

Mr. Cameron: If you have anything more to offer, then please do.

Mr. Brandt: What we used was all of the current information, as well as the information that was presented in the Generic Environmental Impact Statement. That's what I wanted to emphasize with the point about the evaluation of new and significant information.

We go through a process, the NRC goes through a process to stay up to date on all of the research with regard to environmental impacts, detection, capabilities, that sort of thing, that we pay attention to. The Florida Power and Light does the same sort of thing. So we're not relying on technology or analyses or data solely that was generated prior to 1996. The stuff we did for Turkey Point uses the best available current data.

Mr. Hancock: Do you use the technology that was not in general use, say ten years ago?

Mr. Brandt: Our analysis doesn't specifically use what you might call technology. We don't go out and collect environmental monitoring samples, for example. We don't collect tissue

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| samples or soil samples or air samples. That's what the Florida Department of Health does,
| and that's the kind of technology that's up to date and current. That's what they are using.

| Mr. Cameron: Okay, thank you.

| How about questions on some of the findings? Joette, and if you could just identify yourself for
| us.

| Ms. Lorion: Joette Lorion, and I had a question actually, I guess I had two questions. So Jim, I
| think could answer the first one. And when you said the impacts are small, like I read your
| report and I saw the impacts of building a solar plant, which isn't my idea of how to use solar,
| but were large, but the impacts of bringing this old nuclear plant are small. That sounds very
| strange.

| So then I found this quote in your -- and maybe you can explain this to me, because I don't
| understand it. In your summary and conclusion it says that "Table 9-1 says that the
| significance of the environmental affects of the proposed actions are small for the impact
| categories." And then in parenthesis it said, "except for collective off-site radiological impact
| from the fuel cycle and from high level waste and spent fuel disposal for which a single
| significance level was not assigned."

| Well, I don't understand what that means. Does that mean you're not looking at nuclear waste
| and radiation and things that are really environmental impacts? Could somebody just explain
| what that means?

| Mr. Cameron: Okay, Charlie, are you going to answer?

| Mr. Brandt: Well, I'll take a shot at it.

| In the Generic Environmental Impact Statement, both of those impact areas or issues are what
| they call again, Category I. In other words, they apply to all sites and the impact level is the
| same at all sites. However, they were not comfortable with assigning a small, moderate or
| large impact to those two areas. The reasons being there is not a scientific consensus on
| essentially how to do and the value of large population doses, small doses over a large
| population over a very long period of time. Both of those analyses deal with populations that
| are essentially without bounds. EPA has taken a shot at doing this for the repository and they
| have estimates of cancer risk over 1000 years that range over three orders of magnitude.

| So the ability to -- the meaning for that means that there is no single significance level that's
| been assigned to this. It's essentially uncharacterized.

Ms. Lorion: Well then if I understand you, some of the most significant environmental impacts, such as storing nuclear waste right now on site at Turkey Point and that you could have a breach of that -- I mean, are those not assessed?

Mr. Brandt: No, storage on site was assessed. It's the storage off site at, for example, the nuclear waste repository, that may go into Yucca Mountain eventually. That part is not characterized.

Ms. Lorion: So all of that is assessed, including radiation from nuclear accidents and it's considered small?

Mr. Brandt: Yes. The on site stuff is, yes.

Ms. Lorion: Okay, and solar is considered large. I just want to make sure I have you right.

Mr. Brandt: Again, not all aspects of solar or any of the other alternatives are large. Only a few of them are considered large. Solar was large because essentially it involved new construction.

Ms. Lorion: Right, but it doesn't involve nuclear waste and that's what I'm -- I just find it very bizarre. So okay, I think I understand it, but I don't.

The other question I have is on small -- wait a minute, I'm trying to remember what you called -- severe accident mitigation alternatives, which shows the young man doing all the design basis accident stuff. I notice in the environmental report that FPL did that they looked at -- or I believe they had in it as a SAMA, a -- of the reactor pressure vessel, but that was not in your environmental report. And Turkey Point has a history of issues with the reactor pressure vessels. Being that this is an old plant and that they may have to be in the old -- when we figure out how to do it and how much it will cost and everything -- why was that taken out of the Environmental Impact Statement?

Mr. Snodderly: I don't believe it was taken out.

Ms. Lorion: I couldn't find it. So if you could tell me where it is.

Mr. Snodderly: We evaluated all the -- you're talking about it was one of the 167 alternatives?

Ms. Lorion: It was in the environmental report that FPL did, but I could not find it in the Environmental Impact Statement.

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| Mr. Snodderly: Chip, perhaps it could be easier if I could -- if you could show me, you know,
| where in the environmental report, because everything that was -- all the alternatives that were
| described in the environmental report were addressed and are in the Environmental Impact
| Statement. I didn't want to go and reiterate every one of the alternatives, so I broke it down into
| categories, things that were similar.

| Ms. Lorion: But do you know what category it would be in so I could find it?

| Mr. Snodderly: Yeah.

TPD34 | Ms. Lorion: Okay, we'll talk about that later.

34-1 | Mr. Snodderly: To talk about I think your specific concern about vessel and annealing the
| vessel and annealing or the need for annealing will be addressed at a certain point based on
| the -- of the vessel, and that's going to be continued to be tracked as part of the current design
| basis of the plant. They have samples within the -- on the outside of the vessel that are being
| exposed to neutrons and are becoming embrittle. Those samples then come out and are
| tested to see how embrittled the vessel is becoming. Once it gets to a certain limit, whether
| that happens in the next five years, ten years, or in the period of extended operation, that's
| controlled by the current operating license. They're going to be watching that embrittlement
| and when they get to a certain point, they can't go any further and they'll have to anneal. Now if
| that's in the period of extended operation, they're still going to have to --

| Ms. Lorion: But that might make the alternative of license renewable economically unfeasible.
| Do you see what I'm getting at?

| Mr. Snodderly: Okay --

| Ms. Lorion: If you had to do that. Plus, they haven't tested. They were supposed to test many
| years ago and then test in the year 2000. They never answered my question as to when they
| plan to test the sample in the reactor vessel which would influence the decision.

| Mr. Snodderly: Chip, I think we can take it as -- it's on the docket as far as when they have to
| take those samples and test them, and I think that that's something that we could -- I don't
| know if we address it in the appendix or take it as a comment or what you --

| Mr. Cameron: Let's do two things at a minimum with Joette's questions. One, if you could have
| an opportunity to talk to Joette about how the annealing issue in the environmental --

| Mr. Snodderly: It's an operating -- I think --

Mr. Cameron: Secondly, I think that although Joette framed the last part in the form of a question, I think it comes through pretty clear as a comment that the NRC should evaluate -- you're shaking your head affirmatively.

Mr. Snodderly: I'm sorry. Joette, and perhaps it sounds like you have had some correspondence between yourself and FPL or the NRC and maybe we can look at that, but I think the question you're asking is, is something that has been considered as part of the operating design basis and we should be able to get that answer for you.

Mr. Cameron: Okay. We're going to mark that down to make sure that we provide an answer to Joette on that one.

Do we have other questions at this point? Yes, sir?

Mr. Macfarlane: My name is Andrew Macfarlane. I'm a professor at FIU. And I had a couple of different questions.

One question that I had I guess is related to this issue of strontium 90 which was discussed. And I know that from your effluents you have radiation levels that are specified that the effluents have to have below a certain level of radioactivity, but I was wondering if anybody could clarify if strontium 90 is actually released in the effluents. That's the first question I had.

And the second question is, the national high level waste repository is a bust and it's not clear to me how that is going to progress and I wondered if anybody had any comments on what the impact of that would be on the operations for Turkey Point, if in fact it didn't get licensed.

Mr. Cameron: Okay. Two questions. One is related to the strontium 90 issue which is specifically framed in a monitoring context. Trish, would you answer, can you answer that? And this is Patricia Milligan. She's NRC staff, certified health physicist.

Trish?

Ms. Milligan: Sure. Our licensee's file with us an annual effluent report every year and they characterize the quantity of the isotopes that are released in the waste stream and all the types of isotopes that are released in the waste stream. And when I went back and looked in preparation for this meeting at the effluent released from Turkey Point, some years there was some strontium found in the waste in very, very small quantities, some years the strontium 90 was undetectable, the quantities were so low.

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| So what's being released is well below regulatory limits and we're very comfortable with the
| licensee's reports. We have inspectors that inspect the effluent process. We have resident
| inspectors that live there and then part of the inspection process from the regions, the
| inspectors go out and examine those issues.

| Mr. Macfarlane: Is that -- (Inaudible.)

| Ms. Milligan: It's liquid, it's gas, it's solidified waste, that licensee's ship to burial sites. We
| know what leaves in terms of waste and effluents from our licensees, and that's required to be
| reported annually. And that information is available, I believe on our website, but I have to
| double check.

| Mr. Camerson: Thank you, Trish. And for your second question, Mr. Macfarlane, we're going
| to have Chris Grimes address that.

| Mr. Grimes: Yes. I'm going to answer the issue about the national repository in two parts.

| The first part is from a national legislative strategy. Congress has established that they want a
| national repository and a place to collect all the high level radioactive materials. And so from a
| national strategy prospective, a repository is desirable because there's more to nuclear waste
| than just fuel rods. There are other sources of nuclear waste that need to be consolidated and
| put into a safe place.

| From the standpoint of the practicality of if it doesn't get licensed but it just keeps going and
| going and going, what becomes the viability of an extended license? And the answer is that
| there are spent fuel storage designs that we license for on-site use, and even though it wouldn't
| be as convenient to continue to store them on the site, there is sufficient space in the design to
| store spent fuel for extended periods of time and then it becomes again, like the extended plant
| operation, a financial consideration in terms of the cost of maintaining a facility that is not only
| operating but serving as a spent fuel storage facility.

| Mr. Cameron: Okay, thank you very much. Any other questions before we go on for public
| comment.

| Yes, sir?

| Mr. Sanders: Charles Sanders. I'm a resident of South Miami.

| When you refer to the radiation regulatory limits, when were those standards established, and
| I'd also like to know how old is the data upon which those standards were based?

Mr. Cameron: We'll go to Trish Milligan again to answer.

Ms. Milligan: In I think it was the early '90's we revised Part 20 and we brought those standards in to line with International Committee. So those standards were revised approximately ten years ago. Is there another part of your question?

Mr. Sanders: Well, my concern is that any time we review acceptable standards of any kind of a lethal substance, whether it's nuclear or chemical, it seems to go down dramatically every time it's looked at and ten years seems like a long time to me. So I wonder how valid those standards are today.

Ms. Milligan: The International Committee on Radiation Protection issues reports, and they issued ICRP Report Number 60 a few years ago that looked at a lot of new information that's come out, information from Chernobyl, revised information based on the Hiroshima bomb during World War II, and the standards that were revised were smaller or lower but not significantly or an enormously different between the standards here looking at the body of information that's out there. And as we go on in society and as we gather more and more time from things like Chernobyl, we can actually get an opportunity to look at this in long term impact as opposed to short term, gather more information.

So we're very comfortable that the standards that we have in place well protect the safety and health, not only of the public but also our workers at our licensed facilities.

Mr. Cameron: You are quite comfortable because I think you said that we continue to evaluate the work of the ICRP and --

Ms. Milligan: And many members of the NRC staff participate in these International Committees as they're evaluating. So we are part of that process as well.

Mr. Cameron: Okay, let's go to Joette for one more question and then we'll

Ms. Lorion: Yes, now that you're on the radiation issue, I did have one more question.

When you did your evaluation and came up with the small category, did you look at biological magnification and bio-cumulation in the food chain and in the sediments in the cooling canals? And I know you say they're a closed system but they're really dug into porous limestone rock and there is a ground water connection. So I wondered if you checked that at all.

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| Mr. Brandt: Yes. As part of Florida Department of Health's monitoring program, they do
| monitor fish and shellfish in Biscayne Bay. So they do monitor that pathway, and that's part of
| what this conclusion is based on.

| Ms. Lorion: Okay, thank you.

| Mr. Cameron: Okay, thank all of you. We're going to move into our second segment, and we
| have some governmental officials with us and I'd like to ask Commissioner Dennis Moss of the
| County Commissioners for Miami-Dade to please address us.

TPD38 | Commissioner Moss: Good evening. First of all, welcome to the NRC. And you know you're
| important when you travel with your own logo.

| A gentleman stated earlier, he mentioned the word reaffirm, and I came by this evening to
35-1 | reaffirm, to reaffirm my support for Turkey Point, our good neighbors at Turkey Point. Having
| said that, we don't need any other nuclear neighbors in this area, but our good neighbors at
| Turkey Point, and they've been good for this community over the years.

35-2 | Now of course, issues dealing with the Tooth Fairy Project and other issues were brought to my
| attention and when that happened, you know, it caused some concern on my part. But I was
| able to get a hold of information that I feel comfortable with, if you will, that that's not an issue
| that needs to be concerned about right now.

| Having said that, I'm sure that the Commission, the esteemed body who has responsibility for
| oversight on these kinds of issues, will continue to monitor these kinds of things and in the
| future if there are any concerns in reference to the health and safety to the people of this
| community, I'm sure that that information will be brought to the fold.

35-3 | But having said that, once again I just want to reaffirm my support for Turkey Point. They've
35-4 | been good neighbors in this community for many, many years and I want to certainly ask that
| you renew, if you will, their license so they continue to provide power to this community.

| Thank you very much for this opportunity.

| Mr. Cameron: Thank you, Commissioner Moss.

| Next we're going to go to Councilman Sean Fletcher.

TPD38 | Councilman Fletcher: Good evening everyone. First of all, I'd like to thank the NRC for the
| opportunity to be here this evening.

36-1 As a Councilman for the City of Homestead and an employee of Florida Power and Light, I know firsthand how things happen and work out at the plant. The safe operations of the facility out there just continue to be in the foresight on a day in/day out basis. I've worked at the facility for several years now as the environmental compliance coordinator there at the site, so I know exactly, exactly how the safety issues are handled there at the site through Mr. Hovey's guidance. He's even insured, through further training and development classes throughout the facilities that you know, we continue to move forward on the safe operation of the plant.

36-2 I'm here tonight on behalf of the City of Homestead though, because the plant is a necessity to our local economy as well, and we have worked with the City on many different issues
36-3 throughout the years and the continued support of this facility of Turkey Point to the City is just great and needed very much.

Thank you very much.

Mr. Cameron: Thank you, Councilman Fletcher, for coming down to talk to us tonight.

We're going to go to Captain Kennedy, Captain Scott Kennedy at this point, and then we're going to go to Joette Lorion and Joe Wasilewski.

Captain Kennedy?

TPD37 Captain Kennedy: I appreciate the time. I'm Captain Scott Kennedy. Most of the people in
37-1 here know me. I've been with the City Police Department for twenty-two years. I'm here to show my support for the renewal of the license of the Turkey Point facility.

37-2 I would like to comment concerning the relationship as far as a good neighbor that the Turkey Point facility has had with our police department over the years. It's been very instrumental in some of the training. They've been very open. They've been very available as far as providing their facilities, their firearms range, some of their training houses and some cross training of their personnel with our personnel, some training as far as tactical -- I should mention that I'm the tactical commander for our local SWAT Team. We work closely with Miami-Dade SWAT Team in some training exercises at that facility. They're always very open, very supportive. They're a good neighbor. They've provided us with some facilities such as the firing range. Our's was destroyed shortly after Hurricane Andrew. They've been so gracious as to let us use their training facility on a regular basis for firearms requalification. We probably utilize the site once a month for tactical training. Their training house is there that they provide along with the range qualification courses that they provide us.

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| In addition, they're very good neighbors all year long. Through the hurricane season there's
| always open communication as far as coordinating evacuation routes, different things that we're
| concerned, obviously the City and that facility, we have a good communication there. And also
| when we have large race events down here with the Homestead motor sports, the traffic
| fluctuation and impact of their personnel at shift changes conflicting with the in-going or out-
| going traffic flows, it's good to have that open communication and a good working relationship
| with the facility.

| So on behalf of the police department, it's very good, even knowing that they aren't specifically
| within our jurisdiction, they're actually about two to three miles outside of our jurisdiction, in my
| twenty-two years of experience I've had a very good close working relationship with all the
| personnel out there. They've been very supportive in wanting to interact with local, State and
| Federal law enforcement. And I would like to affirm my support for renewal of the license.

| Mr. Cameron: Thank you very much, Captain Kennedy.

| Next we're going to go to Joette Lorion and then Joe Wasilewski of Natural Selections of South
| Florida.

| Joette?

TPD34 | Ms. Lorion: Good evening. My name is Joette Lorion. I've been living in South Florida for a
| little over twenty years now.

| I remember when the Chernobyl accident happened and I read an article. And I think it was the
| head of the Atomic Energy Commission in France, was asked about Chernobyl, and he said,
| and I never forgot this, he said, "They forgot it could be dangerous."

34-2 | And it has always stayed in my mind, because when I come in this room tonight and I see the
| cheerleader like atmosphere and the Boy Scout wings and everything, I just want to remind you
| that nuclear power plants can be dangerous, and that's why you have the Nuclear Regulatory
| Commission. How dangerous can they be?

34-3 | Well, government studies stay that a full scale accident at Turkey Point could cause 29,000
| immediate deaths, 4,000 delayed death, cause 43 billion dollars in property damage, and the
| melt down of the spent fuel pool, the worse case accident, Government documents in the spent
| fuel pool can contaminate 224 square miles radius of the area of land.

| So you have to remember that of course, we want people to operate these plants safely, but
| there is always the chance that you could have an accident. In my opinion, as somebody who's
| been involved in the nuclear watch dog process for probably, gosh, longer than I want to think

34-4 about, many lawsuits up to the Supreme Court and back, is that public involvement is the cornerstone to safer -- I won't admit nuclear power is safe because it creates nuclear waste which I can't say is safe because we leave it to future generations -- but public involvement is very important.

34-5 And I must sadly tell you that having been out of it for awhile and come back in to the NRC process, I've seen a big change in the Atomic and Safety Licensing Board process, this relicensing process, and the big change has been is that they're going to have meetings like that, meaningful public involvement where you can have hearings, you can question them, you can bring up significant issues about the integrity of the reactor pressure vessel and things like that, the aging of components, what if a hurricane hits the plant.

The Atomic Safety and Licensing Board doesn't want to look at those issues and they denied me a hearing. They even said in their order that issues like Everglades restoration, which are a huge environmental issue in South Florida, do not have to be looked at in the licensee's environmental report or in this Environmental Impact Statement.

34-6 Now, I'd like to get to some specific comments on the EIS because I think that's where the Nuclear Regulatory Commission is really going wrong. Because I think that their concept of the National Environmental Policy Act has not evolved at all. I don't know if they're keeping up with the case law. I'm not a lawyer but I'm involved in a number of NEPA cases with people that I work with and I know it quite well and I know the cases quite well. And I'm very concerned about this process.

First of all, it's a bifurcated process in which they are going ahead with the whole relicensing process at the same time they're evaluating the environmental impact. Well, under NEPA you're required to take a hard look at environmental impact, and it's not to be prejudiced, a prejudiced decision that rubber stamps something you've already decided. So by going ahead on this track with the relicensing without evaluating the environmental consequences first, I personally don't think that that complies with the National Environmental Policy Act.

34-7 Also, I don't know -- I asked the question about analyzing cumulative impacts in the environment and I understand you said that State of Florida tests some fish and different things like that. But I'm not sure that the kind of analysis you have in your report is extensive enough to meet the requirements of NEPA under the cumulative impact requirement.

34-8 Again, I could find nothing about the reactor vessel and the integrity and any mitigation actions or what it would cost to anneal that vessel or whether that would make it cost prohibitive to go ahead with this course of action.

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34-9 | The study of alternatives I think was very obscure. As I just said, in the report it says that solar
| has a larger environmental impact. And of course it looked at building a solar field instead of
| using solar power on your roof where it's supposed to be in a small scale application. But even
| then, solar power does not create all this nuclear waste that some of the -- I mean the standard
| for disposing of it is ten thousand years. That's the EPA standard to keep it out of the
34-10 | environment. Some of it's in the environment for hundreds of thousands of years. That is
| being stored right now on site at Turkey Point because they don't have any place right now to
| move it. And until they come up with a solution to that nuclear waste problem, this is my
34-11 | personal opinion here, I don't think they should be creating that nuclear waste. But I think in the
| Environmental Impact Statement you need to look, and I don't think it needs to be generic
| because I think Turkey Point is a special -- this whole South Florida region is a special place. I
| think there is significant new information that requires a site specific EIS, not this generic EIS.
| It's like taking generic medicine. I had a doctor that would never give me the generic because,
| "Here, you have to go get the expensive stuff."

34-12 | So I think that under NEPA a site specific EIS that looks at most importantly the Everglades
| restoration effort, which was not around when Turkey Point was built, and I know many of you
| don't like the Homestead Air Force Base decision and what's going on, but you do know that
| crime risk and the Water Resource Development Act of 2000 when they passed that Act which
| was committing to a 7.8 billion dollar restoration in South Florida region, they even said that the
| use of Homestead Air Base has to be consistent with Everglades restoration.

| So I would think that anything that's going on on future use of Turkey Point or whatever kind of
| plant would be an alternative to that, should also be looked at in the context of Everglades
| restoration, and I think that's a significant environmental issue that has a page and a half in that
| EIS.

| I reviewed just yesterday one component of one small restoration project, a Tamiami Trail little
| project. It was this big. The EIS on renewing the license of Turkey Point that has significant
| issues is this big.

| Now the Everglades restoration document is 4,000 pages. So I think that this EIS is woefully
| inadequate in looking at the Everglades restoration issue.

34-13 | I think I just have a few more things. One specific thing that I brought up in my hearing where I
| was denied a hearing, or my pre-hearing, is that neither in the Generic Environmental Impact
| Statement nor in the Turkey Point supplement do I find information on a hurricane hitting
| Turkey Point and the impact that would have on an aging plant, because you have to
| remember, this is not a new plant. We are part of an experiment here of running a nuclear
| plant longer than it has ever run in this country.

Now some of you may want to do that. Maybe I don't, but maybe some of you do. But we all want to know what the risks are environmentally and to our health and safety of operating that plant. I personally don't like to fly in old airplanes. Some of you may not care. Okay, but I think I have a right to know, you know, what the shape of that plant is that's in my back yard that can impact my environment, my home and my family.

34-14 The Endangered Species Act. I think your scope is again woefully inadequate because you only look at the plant site and transmission corridor. An accident at Turkey Point or a large radiation release could impact a much larger area. An accident could definitely impact almost all of the Everglades or a large part of the central Everglades which has about 64 threatened and endangered species. And I know that you haven't looked at that.

34-15 I will be making written comments on this that will mostly be tailored to I don't think you've complied with either the spirit or the intent of the National Environmental Policy Act. And as you know, a Federal Judge may not agree with that. But if a Federal Judge would agree with that, that would of course vacate any decision that was based on something that does not apply with the Act. And if you're lucky I'll be too busy to file a Federal lawsuit, but don't count on it.

Thank you.

Mr. Cameron: Thank you, Joette.

Could we have Joe Wasilewski from Natural Selections of South Florida?

TPD38 Mr. Wasolewski: Good evening, everybody.

I'm a wild life biologist in South Florida since 1973, and work for a contractor who contracts to Florida Power and Light for the last twelve years.

I'm extremely concerned about safety issues as we are all, not only my family, I even have a granddaughter down here now. So we're going to grow her up in hopefully a nice safe atmosphere. In fact, I think it was more dangerous driving to this meeting than what I'm hearing about today.

The cooling canal system which I've worked in the last twelve years, I'm sure wasn't designed for what's happening in there now. I'm sure a lot of you have heard about the crocodile comeback. Excuse me, I'm a little hoarse, three shows today at the Parrot Jungle.

Anyway, I'm sure the engineers didn't design the cooling canal for the crocodile, but the crocodiles have certainly come in. And as early as last night we got our tenth and eleventh nest for the year, caught 36 babies that I should be marking right now, which I will be, and releasing

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38-1 | probably in the morning. And every year we're producing, or the cooling canal system is
| producing over 300 crocodile babies. It's really a very good significant environmental story.

| Talking about environmental concerns, I see regularly in my twelve years, falcons, bald eagles
| daily. Standing you can see a manatee, a shark, a bald eagle and a crocodile, not moving. So
| it's really a special place down here.

38-2 | If we were going to talk about building a nuclear facility I would say no, because you can't
| replicate what's there now. But it's already there. It's working smoothly. With the experts they
| have that know their field, I say let it go, give them the license renewal and go on from there.

38-3 | In fact, talking about environmental concerns, I didn't really hear -- I don't know if you folks
| know the eighteen mile stretch to the Keys, Florida Power and Light owns a lot of that land and
| they're restoring 14,000 plus acres to its natural resilience. They're restoring the water flow,
| taking out exotic injurious plant life and it's coming back.

| So I just want to support the new license. Thank you.

| Mr. Cameron: Okay, thank you very much, Joe.

| I'd like to take some people that we didn't have a chance for this afternoon and then ask the
| representatives of Florida Power and Light to talk to us. I'd like to first go to Mary Finland who
| is executive director of the Homestead Chamber of Commerce. Then we're going to go to
| Elvira Williams, Kristy Doyle Bailey, Tim Williams and Kim Sovia.

| Mary?

TPD39
39-1 | Ms. Finlan: Thank you. First of all, I feel like we have done this already. I was here in
| December and I just wanted to reiterate the stand of the Board of Directors of the Greater
| Homestead Florida City Chamber of Commerce in support of the license renewal, and a
| resolution that I will submit. I won't read here and bore you further but I will submit it in writing
| to you here.

| And I just, you know, want to stand up here and say that I live in the community and I work in
| the community. We are not a large Chamber of Commerce, but with a membership of nearly
| 600 people we are the largest volunteer organization in the Homestead Florida City community.
| And as a business community it would just be unconscionable for the Chamber of Commerce to
| not support the renewal of the license for Turkey Point. I just want to reiterate that and lay this
| in your paper records and back it up with that.

Mr. Cameron: Okay, thank you very much, Mary. And we'll attach that to the transcript.

Is Elvira Williams here?

Okay, Kristy Doyle Bailey?

TPD40 Ms. Bailey: Recently many problems have come to light as a result of the relicensing activities for Turkey Point.

40-1 One, there are new and significant information about the baby teeth study.

40-2 Two, the commercial airport safety assessment.

40-3 Three, the storage of high level waste.

40-4 Four, the releases of radioactive waste into the environment.

40-5 And five, the deterioration of aging plant safety components.

Each of these questions is significant and deserves study and thoughtful consideration. Rushing to complete the process and prevent safety hearings is not in the public interest. Therefore, the Miami Group of Sierra Club calls for safety hearings and an Environmental Impact Statement that studies site specific health and safety issues.

40-6

Thank you.

Mr. Cameron: Thank you very much.

Tim Williams?

Okay, we'll catch him when he comes back. How about Kim Sovia?

TPD41 Ms. Sovia: I don't think I need the podium. I'll just stay back here so I can look at everybody.

For the record, my name is Kim Sovia. I have been a resident of this community, specifically Homestead, for the last twenty-five years. A little bit about my professional background.

I was with the Department of Defense for five years and also the present CEO of the Greater Homestead Florida City Chamber of Commerce. I also hold numerous board positions within Miami and Dade County. I've been heavily involved in a lot of the EIS studies that were done

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| concerning Homestead Air Force Base closure. I am currently employed by the world's largest
| communications company, with -- Broadcasting.

41-1 | But I'm here as a concerned citizen in support of FP&L and Turkey Point. So what I'd like to do
| is let you all know that I've had numerous occasions to work with them on key community
41-2 | environmental issues affecting South Florida. And having the cost effective convenience of
| Turkey Point has been a huge benefit to Miami and South Dade, and I'm specifically talking
| about the cost for electricity.

41-3 | More importantly, is their on-going strong commitment to sensitive environmental issues as
| proven in FP&L receiving Environmental Business Practices Award from the Greater Miami
| Chamber of Commerce. The Turkey Point property is also a testament to that commitment
| since most of the property remains in its natural habitat.

41-4 | What impresses me the most is their safety record. Having received numerous superior ratings
| through the years from the NRC, plus having been rated as one of the safest and most reliable
| nuclear power plant in the world gives me a very comfortable feeling having them as a much
| needed neighbor for the next twenty years; as they have been for the current twenty-five that
| we've been all living together.

| With their record I would like to go on stating that I am -- excuse me.

| With their record, I would like to go on record condoning the development of yet another power
| plant when we have one with such a superior record.

| And in closing, the tremendous economic impact that they've been to the community, which is
| well over 60 million. It's a necessity for the continued survival of an already endangered
| community, economically endangered community. So I implore you to take a strong look at the
| renewal license for FP&L and Turkey Point.

| Thank you.

| Mr. Cameron: Thank you for those comments.

| Tim Williams?

TPD42 | Mr. Williams: Hello. My name is Tim Williams and I'm speaking tonight as an individual, as a
| parent and as a resident of the local community all of my life. I'm actually a fourth generation
| resident of this community.

42-1 I think the Draft EIS so far is an excellent document that obviously has been well put together and covers the items required by law.

Two things, however, remain as my most important reason for supporting the renewal of license at Florida Power and Light nuclear facility. And those two things are:

42-2 Number one, the abundance of locally generated affordable power. If that wasn't obvious at the earlier meeting which some of you mentioned that was already conducted here, that should be painfully obvious as we see the situation in California. And also the nuclear power is produced here in an environmentally sound manner.

42-3 Number two, what would happen to the local environment should Florida Power and Light be denied relicensure? I know some of the folks spoke about that component of the GEIS.

On the first subject my comments are based on my involvement with Whiteheart and Community Centers, Inc. In that capacity I've been their past president, I've sat on their Board of Directors, and we administer Head Start and child development services to over 450 children in the local community at five different centers through the cities of Homestead and Florida City.

In that capacity I've been part of the United Way Success by Six Program, and the Success by Six Program took all the available data collected from many studies and reports and came up with a program to effect change in impoverished communities, targeted at the zero to six year old child. The Florida Department of Children and Family Services as well as the Miami-Dade County Department of Community Affairs has the information from those studies and reports. So if anyone is interested they can contact those agencies to receive that information.

Conclusively, the findings prove that a balanced diet and exposure to education and certain types of structure stimulation in the early years contribute dramatically to the child's ability to develop normally. We're talking about the size of the brain, and their ability to function in life. Clearly, affordable power is a key component to that. So when we talk about children, and I know there's been some discussion about some things that have been in the press, beyond a shadow of a doubt, available affordable power is very important to child development.

The second point comes from my personal experience with the Biscayne National Park Property Development and Review Committee, of which actually our chair of that committee is here tonight, and the Biscayne Land –

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| Now while I'm not speaking on behalf of those groups, let me tell you, because of my
| experience there I have a first-hand and working knowledge of the restored environment and
| the continued commitment of Florida Power and Light to maintaining the pristine environment
| out there surrounding Turkey Point nuclear power plant.

| The vast expanse of primitive wetlands, the natural areas that Florida Power and Light are
| responsible for, we must keep that in mind when it comes to license renewal. By renewing the
| license it is my opinion that they're going to be able to continue to maintain and improve what
| they've already started. And they are exemplary in the field. I don't think there's any other on-
| going active restoration -- there's some contemplated, the Everglades restoration -- that's being
| done at the level they're currently working at.

42-4 | So please continue and I hope the NRC finds favorably for license renewal.

42-5 | In conclusion, the Draft looks at the affects of relicensing in three categories, small, medium
| and large. It's my opinion that if you don't relicense this facility, obviously the impacts are going
| to be huge.

| So thank you very much.

| Mr. Cameron: Okay, thank you, Mr. Williams.

| Let's now hear from the representatives of Florida Power and Light at this point. First we're
| going to hear from Mr. Robert Hovey who's the vice president for the Turkey Point plant.

| Mr. Hovey?

TPD43 | Mr. Hovey: Good evening and thank you, Mr. Cameron.

| My name is Bob Hovey and I'm the vice president of Florida Power and Light Company's
| Turkey Point nuclear power plant. I appreciate this opportunity to speak to you today about
| FPL's application for renewal of the Turkey Point operating licenses.

| Assisting me is Liz Thompson. Liz is our license renewal project manager who will address
| more specifically the findings contained in the Draft Supplemental Environmental Impact
| Statement.

43-1 | I would like to thank the Nuclear Regulatory Commission for arranging and holding the meeting
| today. FPL strongly supports the openness of this process and during the last two years we
| have been involved in dialogue with the community surrounding Turkey Point. We've met with

more than a thousand homeowners, community groups and Government officials. Our purpose was to share the information about license renewal and plant operations.

We believe that the community interests and priorities should be incorporated into not only our license renewal of Turkey Point, but overall operations. Community input is an integral part of the license renewal process. The application we prepared consisted of two parts, a safety analysis and an environmental report. Our application has been open to public review for some time and the Nuclear Regulatory Commission has requested comments from interested parties.

Just as the process has been open for reviewing the environmental aspects of license renewal, the safety analysis is following a parallel path. The safety analysis is going to go through a series of open meetings and the NRC is currently conducting an intensive review of the plant systems to insure safe operation for an additional twenty years.

The public meeting and the scoping of NRC's environmental review of our license renewal application was held here in this room back in December of last year. Today's meeting continues the open process of seeking public input on license renewal. We welcome this opportunity to gain additional community input on the environmental aspects of license renewal.

I would like to thank the members of the community represented here today for taking time out of your busy schedules to share your views and ideas on this Draft Supplemental Report with the NRC. And we appreciate the support provided us by the South Dade community. And I'd also like to thank the NRC staff and the members of National Laboratories, the review teams, for the work in preparing the Supplemental Evaluation Impact Statement and Turkey Point license renewal.

43-2 I believe the report reflects a comprehensive assessment of the environmental impacts of license renewal. With that said, let me provide a little bit about my background.

I came to Florida Power and Light in 1995 as the site vice president for Turkey Point nuclear plant with a Master's Degree in Business Administration, a Bachelor of Science in Nuclear Engineering, and a Bachelor of Art's Degree in Business Administration. I also spent time at other nuclear facilities and utilities around the United States and with the U.S. Navy in the Submarine Service.

On a personal level, my wife and I have six children and we live here in the South Dade area. As vice president at Turkey Point my first job and my primary focus is the health and safety of my family, the Turkey Point employees, my friends and this community. Their well being comes

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43-3 | before all else. And when I look at the evidence presented in the Supplemental Environmental
| Impact Statement and other license renewal documents, I'm assured of the plant's safety and
| positive impact on our environment.

| I believe the case for continued operation of Turkey Point is strong. And let me now address
| four areas; our performance, the economics of Turkey Point electricity, environmental
| stewardship, and community presence.

43-4 | First, the performance of our plant is top notch, thanks to our employees. Their time and effort
| and dedication have resulted in Turkey Point consistently being recognized as safe and one of
| the most reliable and efficient plants in the industry. Our employees have also worked diligently
| through effective maintenance programs to sustain the option for continued plant operation well
| beyond the initial forty year license.

| Not only does the NRC monitor our performance, other independent agencies also agree that
| our operations are safe and have no adverse impacts on the surrounding community. This
| includes the State of Florida's Department of Health, which conducts monitoring and sampling
| of the South Dade area around Turkey Point.

| Today you may hear claims by an activist group opposed to nuclear power called the Tooth
| Fairy Project, and that Turkey Point is harming people in Miami-Dade County. Let me assure
| you that their claims are just not true. As a parent I understand that we all want to protect our
| children's health and we want answers when any child is suffering from cancer or any type of
| illness.

| The group organized against Turkey Point claims the answers for some types of cancer are
| found in the plant's operation. That is not the case. I could not in good conscience work at a
| facility that could be harmful to any child. Having worked at Turkey Point for many years I'm
| convinced that the environment around Turkey Point is safe for your children and mine.

| The group's claims have been repeatedly rejected by Federal and State health agencies as well
| as by leading scientists in the radiation protection field, some of which are in this room here
| tonight.

43-5 | For example, in 1990 the National Cancer Institute conducted an independent study of 62
| communities around the United States, U.S. nuclear facilities in operation for at least ten years.
| The agency confirmed that there was no increase in health risk of living in proximity to nuclear
43-10 | power plants. The NRC also appropriately addressed these claims in the Draft Supplement
| Environmental Impact Statement and concluded that the Tooth Fairy study shows no link to
| adverse health affects.

So the bottom line, forget the fairy tale; Turkey Point is safe.

43-6 Another factor to consider is our ability to help meet Florida's energy needs. Turkey Point power helps sustain our economic growth and maintain our quality of life. Our plant is strategically located in the FPL generating system to help maintain that system and Turkey Point is among the lowest cost producers of electricity in the FPL system, so we'll help keep the electric bills low for all of our customers. And that's good news for our customers.

43-7 From an environmental standpoint, Turkey Point remains a guardian of our natural resources. I was going to say some more but I think Bill Wasilewski said it better than I'm going to be able to say it, so I'll skip through that. But leave it at recognizing that we placed over 14,000 acres of sensitive wetlands and permanent conservation where the land is being restored and preserved to the natural condition.

43-8 Finally, what does Turkey Point mean to our community? We asked our neighbors and they told us that we're an important part of the economic factor in the community, one that they want to see remain as a viable contributor. The payroll for 800 some employees, tax dollars, purchases and contributions to local United Way agencies help in this area.

But perhaps more importantly is the role our people play in the community. Our employees are active in churches, scout organizations, PTA's, little leagues and even local Government. And you heard some of our local Government representatives here today.

I have heard testimony to our community role. Many members of the local community spoke in support of the Turkey Point license renewal in the December 2000 public scoping meeting.

43-9 In summary, I believe that renewing the licenses of FPL Turkey Point nuclear power plant is in the best interest of our community in continuing to provide safe, clean, reliable and low cost electricity to our customers. That's my professional opinion as the vice president of Turkey Point and my personal conviction as a parent and an active member of this community.

Now I'd like to turn it over to Liz Thompson, our license renewal project manager, to provide some additional details on FPL's license renewal efforts and comments on the Draft Environmental Impact Statement.

TPD44 Ms. Thompson: Thank you, Bob. Good evening, everyone. I would also like to thank the Nuclear Regulatory Commission and each of you here today for taking time and your involvement in the license renewal process.

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| It's a pleasure to be here today to share some thoughts about the Supplemental Environmental
| Impact Statement for Turkey Point license renewal.

| As Bob said, my name is Liz Thompson and I'm the project manager for the Turkey Point
| license renewal efforts. I've worked at the site for about fourteen years and been personally
| involved, not only in license renewal, but in operations, maintenance and engineering. I have
| first-hand experience of the team work that has enabled the plant to become a top performer in
| its class and a viable candidate for license renewal.

| License renewal was not a process that we entered into lightly. We realize we have a
| responsibility to the community in which we're located. In preparing our license renewal
| application we were extremely careful to insure that programs and procedures are in place to
| assure safe operations and that the plant is having a positive impact on the environment. That
| process is not something new. It's how we run our business every day.

| The NRC has now evaluated the environmental aspects associated with our license renewal
| application. The Supplemental Environmental Impact Statement for Turkey Point license
| renewal provides a thorough evaluation of the 92 environmental issues addressed in the
| regulations.

| This very broad approach has been thoughtfully designed and is intended to cover a wide
| spectrum of consideration that need to be evaluated in renewing our operating license.

| The Supplemental Environmental Impact Statement concludes that the environmental impacts
| from operating Turkey Point for an additional twenty years would be small and less than the
| impacts of other energy source options. This conclusion is based on the detailed analysis of
| the impact areas.

| The analysis in the Supplemental Environmental Impact Statement also looked at replacing the
| two reactors with equivalent electricity producers, new nuclear reactors, oil or gas burning
| generators and even solar panels, and concluded that those options would produce greater
| pollution and ecological impact.

44-1 | We have been told by our neighbors that clean energy is important to them and we believe
| Turkey Point provides that benefit.

44-2 | But another reason I believe that Turkey Point should operate for an additional twenty years is
| to be able to continue the award winning conservation work that was initiated almost thirty years

ago. I'm proud of the work we do to preserve and protect the environment. We believe in our responsibility to operate in harmony with the environment. Turkey Point's unique location successfully combines modern technology with a strong environmental commitment.

In recognition of our efforts in land preservation FPL was presented with the Edison Electric Institute Environmental Award for Turkey Point's land management work this year, and the Greater Miami Chamber of Commerce Environmental Award in 2000, recognizing FPL's efforts for preservation and education on the endangered American crocodile. These efforts have attracted world wide attention, being featured in National Geographic Magazine and on television, CNN and the Discovery Channel. This preservation of the site and the species present there will continue through the renewed operating license period.

44-3 Aside from the very important environmental benefits of continued Turkey Point operation, license renewal is also important for meeting the energy needs of South Florida. Florida is growing approximately two percent per year and the electricity consumed per customer is also increasing. FPL must provide power plants to keep up with this growing demand and insure an ample supply of electricity.

This means keeping solid performers like Turkey Point as a viable option as part of FPL's generation network, one that uses a diverse energy mix to insure that when our customers flip that light switch the electricity is there.

44-4 As Bob Hovey mentioned, there are many additional benefits that Turkey Point provides to the community. Our neighbors have told us that taking away Turkey Point would have a big impact on this community and we agree with that conclusion.

44-5 The Turkey Point employees want to remain a part of this community and as your neighbors. I believe extending our operations is more than renewing our license. It's about renewing the
44-6 future of South Florida. We're committed to safely and reliably operating the Turkey Point power plant long into the future to meet the area's energy needs while protecting the environment.

Thank you.

Mr. Cameron: Thank you, Liz. Thank you, Bob.

Let's go next to Noreen Surge, and I apologize if I pronounced that incorrectly, and Norma Martin. Okay, well maybe they'll return.

How about Stewart Maloney and Dan Cutler. Dan Cutler?

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| I know these two people are here. Harlan Keaton from the State of Florida and then we're
| going to go to Dr. Dade Moeller.

| Harlan?

TPD49 | Mr. Keaton: Thank you. I'll make this kind of brief.

| My name is Harlan Keaton. I'm with the Department of Health. And we are the people who do
| the sample collection and analysis around the nuclear power plants there at Turkey Point. We
| also do St. Lucie and we also do Crystal River.

| And basically what we want to do is to get across to you that the analysis that we do there at
| those facilities, through all of the years before the plant and since the plant's been in operation,
| we do things like test water, fish, crustacea, sediment, sand, various other environmental
| samples there, and basically what we look for is a base line of any increase in radioactive
45-1 | materials, any increase in environmental dose there that the public might pick up, and to date
| we have found a stable environment, no increases in radiation and no increases in
| radionuclides that can be found in the environment.

45-2 | Another thing, our Department of Epidemiology in Tallahassee has been reviewing a study that
| was done called the Tooth Fairy Study and to that they have done an analysis which I would like
| to read the summary of. It's several pages, about seventeen pages. I'm not going to read it all.
| It has been presented to the NRC. And the summary goes like this.

| "In summary, we reconstructed the calculations made by the RPHP" -- that's the Tooth Fairy
| people -- "using the same data from" -- I messed up earlier so I'm not going to repeat that
| mistake -- "using the same data from which they base their claims. RPHP claims that there are
| striking increases in cancer rates in Southeastern Florida counties and attributes these
| increases to radiation exposure from nuclear reactors.

| Given the data to reconstruction calculations and graphing out our findings, we have not been
| able to identify unusually high rates of cancers in these counties. As we would expect, just by
| chance, some county rates appear higher than State and national trends and some appear
| lower. These rates fluctuate from year to year and in some situations large fluctuations occur
| with a small number of cases in small underlying county populations.

| One has to use careful scientific and objective evaluation of these fluctuations to avoid
| misinterpretation. Careful analysis and observation of the data presented here does not

support the alarming claims made by the RPHP regarding cancer mortality rates and trends in Southeastern Florida counties when compared with the rest of the State of Florida and the nation."

That's the summary review, this report, it's available. And there are the graphs there for everybody to see.

I'd also like to quickly read the cover letter that goes out with this.

45-3 "Dear Interested Parties: Much concern has been relayed to us about statements made by the Radiation and Public Health Project Incorporated, and the March 28, 2001 announcement. RPHP has implied that there are large increases over time in cancer rates in Southeastern Florida counties and they attribute these increases to radiation exposure to the Turkey Point and St. Lucie power plants.

The Florida Department of Health takes these assertions seriously and has reviewed the data used by RPHP regarding cancer rates in Southeast Florida. Using this data to reconstruct calculations and graphing the results we have not been able to identify any unusually high rates of cancers in these counties. Attached is the Bureau of Environmental Epidemiology report addressing this data and the RPHP findings. Should you need any further clarification please feel free to contact me at 850-245-4299," and it's signed "Sincerely, David R. Johnson, Medical Doctor, Master of Science, Bureau Chief of Environment Epidemiology."

These reports are available if anybody would like to see them. With that I conclude this presentation.

Mr. Cameron: Okay, thank you, Harlan, and thanks for putting in the effort today to bring us news of that study.

Next we're going to go to Dr. Dade Moeller. Dade?

TPD46 Dr. Moeller: My name is Dade Moeller. I was born and reared in Florida. I went to twelve years of public school here. After I finished school I enlisted in the Navy. World War II was going on and I served in the Navy and then fortunately had the G.I. Bill and could go to college.

This afternoon we had a similar meeting and Dr. Ernest Sternglass and Dr. Jerry Brown were here and presented the results of the Tooth Fairy Project, and I know a number of you are very interested in that.

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| You'll notice though that they're not here tonight. Their primary objective is one of deception.
| Their primary objective is to breeze into town, appear before the T.V. cameras and then dash
| on their way, and hopefully they'll get out of town before anyone can catch up with this
| misleading information they have provided you.

| I came down here on my own. I don't live in Florida at the moment. I live in North Carolina.
| But I'm a senior citizen and so I can get, you know, frequent flyer tickets at a very reasonable
| price. I can fly round trip anywhere for \$300.00. So I flew down here on my own. And why did
| I come down here? Well, because I'm up to my eyeballs in the misleading and distorted
| information that these gentleman present. And my time is limited so let me get to the bottom
| line. I know it's late. I'm going to try to move along very rapidly.

46-1 | The Tooth Fairy Project is exactly as we've heard from several of the preceding speakers. It's a
| fairy tale. And what is my opinion of it? Well, it's unadulterated gobbely-goop. That report is
| one of the worse examples of junk science that I have ever seen in my career. Now I hope if
| there are any newspaper reporters here that you don't mis-quote me, because I said what I
| meant to say.

| Now why can I say that? Well, let's look at the Tooth Fairy Project in some of the technical
| detail, and as I move along I'll relate to you some of my technical qualifications.

| The data they present is in terms of picocuries per gram of calcium in the teeth. Why didn't
| they report it in terms of the dose? The dose is what's important. The reason they didn't report
| it in terms of the dose is because the dose is so low. I calculated the dose and it is in the range
| that is below the value of the annual dose rate that the National Council on Radiation Protection
| and Measurements deems as a negligible dose. They say such a dose is so low you should
| forget about it and get on with something important.

| Now who is the National Council on Radiation Protection and Measurements? They are a
| group chartered by the U.S. Congress with the express duty to analyze information on the
| health affects of radiation and to present in reports and to present to the public in reports that
| the public can understanding by reading and so forth, and Dr. Sternglass and Dr. Brown said,
| "Oh, we need the study about the teeth, because no one knows anything about the health
| affects of strontium 90."

| Well here's Report 110 of the National Council on Radiation Protection and Measurements.
| Why don't they read the report? It's some aspects of strontium radio-biology. It gives all of -- a
| summary of all of the information on the health affects of strontium 90.

Furthermore, they say send us \$50.00 -- you know, send us a tooth and \$50.00 and if we can get 1000 teeth from Dade County we can confirm the clinical relationship between strontium 90 and its health affects. That's hog wash. Why do I say that? I say that because if the doses that are involved, any good epidemiologist, and they're pseudo-epidemiologist, they're practicing in a field they don't understand, anyone who had bat brains about epidemiology would know that it takes over a million, you'd have to follow a million children for over a hundred years to demonstrate whether there was any relationship.

Now why can I stand up here and say this, say these harsh things about them? Well, I used to work for the Public Health Service, United States Public Health Service, and I could have never stood up and said anything like this. After finishing with the Public Health Service I was a Professor at a small college in Boston, Harvard, and I couldn't speak out then. But today I can.

As I say, I paid my own way down here. I'm beholden to no one. I'm not for Florida Power and Light. I'm not for the State of Florida. The main reason I came here is because I love the State of Florida and I was born and reared here and I want to come back and recompense them -- is that the word -- reimburse them for what they've given me.

Okay. I was in the Public Health Service for eighteen years. What did I do? I worked as a laboratory radio-chemist at the Oak Ridge Laboratory from 1956 to 1957. For five years I directed the Northeastern Radiological Health Laboratory, which monitored the strontium 90 in children in the fourteen Northeastern States of the United States. The Public Health Service divided the nation up into groups and I was responsible with roughly 100 strongly motivated supporting employees to monitor for strontium 90 in those states. And they're always saying, "Oh, no one's ever monitored for strontium 90." Hog wash. They do it all the time.

I was also for five years director for Radiation Protection Training for the U.S. Public Health Service. Then I went to Harvard. For twelve years I was chairman of the Department of Environmental Sciences. And for the last decade I was Associate Dean at a Harvard School of Public Health. I think that counts for something.

Okay, what have they done? They distort. I'm pressed for time. Let me give you a couple of examples.

Sternglass and his cohorts said the Prairie Island plant in Minnesota was responsible for increased breast cancer. Well, the Minnesota Department of Public Health, just as the Florida Department of Health, used their data. And what did they find out?

They found out that in analyzing whether the plant could possibly have had any impact on breast cancer, if they found one of the neighboring states had a low frequency of breast cancer,

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| they moved the county out. If they found the county a little farther away than their limit and it
| had a high breast cancer rate, they moved it in. Well, they are just a very deceptive group of
| people.

| At Millstone Plant, they said the Millstone Plant in Connecticut was responsible for the strontium
| in the milk, you know, in some dairy farms, 50, 100 miles away. Well, bless EPA. The U.S.
| Environmental Protection Agency went in and did what -- to explain it to you, it's like DNA test.
| You know, you can convict a person who murdered someone ten years ago because of DNA.
| They went in and analyzed the strontium and it showed it was not from any nuclear power plant
| anywhere. It was from fallout.

46-2 | Well, why doesn't the Tooth Fairy group just pay someone to analyze the strontium the cesium
| in the environment around here. You'd find it's not from Turkey Point.

| So, let me wrap it up. Don't be taken in by this group. They have absolutely no shame
| whatsoever. In 1971 I was president of the Health Physics Society and the past presidents
| were so disturbed by Sternglass and his group -- they've been in this business over thirty years
| -- so disturbed by them that they issued a press release which was signed by every living past
| president of the Health Physics Society, which is a premier radiation protection society in the
| United States, and they all said Dr. Sternglass is an embarrassment to the field of radiation
| protection and we wish he would just shut up.

| Then in 1980 -- but what did the National Academy of Sciences do? They -- EPA financed a
| committee to evaluate the doses from radiation and the health affects. We invited in
| Sternglass. I was on the committee. I'm not talking hearsay. I was there. I've been there. We
| invited in Dr. Sternglass and said tell us. He said, "I'm going to follow up with some data."
| Twenty years later no data.

| If you'll read that committee's report you'll find they said the gentleman did not know anything
| he was talking about.

| Okay. If you had your faucet in the kitchen is leaking, would you call in an anthropologist or a
| physicist to fix it? That's what Dr. Brown and Dr. Sternglass are. No, you'd call in a licensed
| plumber and get it fixed right. In a similar manner, if your spouse or your child or if you yourself
| were sick, you'd want a medical specialist, wouldn't you? And if it involves anything that was
| the least complicated, you'd want that person to be Board Certified, you know. And there are
| certification boards for people in the radiation protection field, it's the American Board of Health
| Physics. I took the exam. I'm Board Certified. There is board certification for environmental
| health people. I took the exam. I worked hard, I studied, I took the exams, I passed, and I'm
| Board Certified.

This morning, because I didn't think about it until then, I looked up Dr. Brown and Dr. Sternglass. They're not in the list, no where. So please, don't send them any money.

We're all interested -- as I close out -- we're all interested in anyone who can bring to our attention some unrecognized hazard from radiation. But we're not interested, I personally have no patience with the people who breeze in this town, pass out false information, then catch their plane home. Next month they'll be in another state. They've done this for over thirty years and we're not going to stop them today.

Thank you.

Mr. Cameron: Thank you very much, Dr. Moeller. And Dr. Moeller referred to this afternoon's session. If anybody is interested in seeing what was said at that session, the transcript will be placed on the web from that meeting.

What I'd like to do now is send -- we'll try to come back and answer some questions perhaps, if we have time, but I do -- yes?

Dr. Moeller: Could I mention that there is a hand-out of my technical comments in that next room. If you want them, please let us know.

Mr. Cameron: Okay. Thank you.

We're going to go to Mary Jonckheere, then Mary Donworth, Ralph Andersen and Mark Oncavage next.

Mary?

TPD47 Ms. Jonckheere: Hello. My name is Mary Palazuelos Jonckheere. I'm an ex-professor of mathematics at Miami-Dade Community College and a Green Party member and a Sierra Club member, and a home schooling mother.

And the things that I want to say about -- I wasn't here in the afternoon, but the things that I want to say about this issue is that I know the country of Germany has completely decided to phase out nuclear power. My husband is from Belgium and I often go to Europe with him and I have deep respect for the citizens of Europe. They're I think much more publicly aware of the dangers of the food supply and the dangers of nuclear energy than we are here in the United States.

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47-1 | I think the issue of nuclear energy has a kind of a clouded vision with people in the United
| States, especially the people that stand to make a lot of money from nuclear power, including
| the administration that's in Washington right now. And what I feel like is, I come from a kind of
| dysfunctional family where my father enjoyed watching my sister and I have fights, physical
| fights, and we had once a fight at our country club and my sister was like pushing me down
| under the water and I decided I would start screaming since my father wasn't stopping this, he
| was enjoying it. And I realized that there were strangers coming and helping me. And that was
| something that I suddenly found a survival skill, and that's something that I'd like to happen
| here. I think that there's something happening in the United States, there's some kind of
| conspiracy, and it seems like there's a pro-nuclear and then there's the Green people that are
| against, and I think that for the citizens to be truly sure that the facts we're getting are true,
47-2 | because I read this beautiful glossy thing put out by Florida Power and Light, and they say how
| it's very safe around the nuclear power plants, but they didn't mention how maybe fifty miles
| away in Miami Beach, that's where the highest level of strontium 90 are being found, which is
| from where the gasses are released by Turkey Point because the pressure builds up. Those
| gasses contain the nuclear isotopes and that's where the children of Miami Beach are finding
| that.

| So you know, yes, maybe the smoke stacks are safe. I'm happy I live in Homestead. I'm safer
| than the people in Miami Beach, but the clouds are bringing up those radioactive isotopes.

47-3 | But I really feel is that there needs to be a panel of scientists that are analyzing all the research
| done by the NRC, by the Tooth Fairy, and that panel of experts has to be kind of the way a jury
| is selected, that there's the environmentalists and there's the nuclear people and we're going to
| agree on the scientists, because I'm sure that the NRC, you guys can find scientists that are
| going to support you, and you're saying that we're finding scientists that support us. Well, there
| would have to be some kind of a jury selection and it has to be not only American scientists, but
| scientists from all over the world, where maybe some clouds with nuclear power is not affecting
| them as the country of Germany has completely decided to shut them down.

| I'd like the data of Germany to be looked at and included in the study for the relicensing of
| Turkey Point. Why did that country decide to phase those out? We know German people are
| very intelligent.

47-4 | The other thing I wanted to say as a mathematician, this generic study takes, from what I've
| been told, it takes about 102, the data from 102 power plants, and adds up the numbers and
| divides by 102. And that's not really very good mathematics when you're talking about different
| places in the country. You know, somebody said that the smoke stacks, the number of birds
| that fly into the smoke stacks is the same all over the country, so you can just kind of average
| that out. But Turkey Point is close to the Everglades so I'd think there would be more birds
| flying there than there would be in some other part of the United States where there are not that

many birds and maybe -- that's just an example. But us people here in Homestead and in South Florida would be very concerned about the number of birds that would be flying into our smoke stacks, just like we're concerned about the number of children that are dying of brain cancer here in South Florida and the number -- and the levels of strontium 90.

So I would like the data that is included in this study not to be generic but to be site specific to South Florida. And again, I would like it to be reviewed by an independent panel of scientific experts from all over the world, not just the United States. It's very sad that I have to say this, but this is the health of our children and our grandchildren and I'd like to pass on the earth in a better condition than we have it right now to my daughter and her children.

Thank you.

Mr. Cameron: Thank you, Mary.

Mary Donworth, and then we're going to go to Ralph Andersen and Mark Oncavage.

Mary?

TPD48 Ms. Donworth: Good evening. My name is Mary Donworth. I am the vice president of Agency
48-1 Relations and Fund Distributions at the United Way of Miami-Dade. I've worked at United Way for eleven years and I'm here to talk about FPL's commitment to the community.

Each year FPL, the IBEW and its employees raise over a million dollars for health and human services in our community. Of that amount, Turkey Point employees raise over \$150,000.00 for services here in the Homestead Florida City area and those services include scouting, mentoring, youth programs, early childhood development programs, therapeutic programs, et cetera.

Some of those agencies that receive funding are Central Capacino Farmworkers Center, Homestead Food Kitchen, the YMCA and the Redlands Christian Association.

In addition to the tremendous financial support that we get from FPL, we also receive thousands of hours of volunteer time from the employees, which is tremendous in our community.

In conclusion, because I want to be brief, it is late, I just want to say that United Way is tremendously proud of our partnership with FPL and its employees in our community.

Thank you.

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| Mr. Cameron: Okay, thank you, Mary.

| Ralph Andersen?

TPD49 | Mr. Andersen: My name is Ralph Andersen. I'm a Board Certified health physicist at the
| Nuclear Energy Institute.

| I am pleased to have the opportunity to join this discussion tonight.

| Nuclear energy provides electricity for one out of every five homes and businesses in America,
| and here in Florida electricity customers get about seventeen percent of their electric power
| from five nuclear reactors, including Turkey Point, at Florida Power and Light St. Lucie plant
| and Progress Energy Crystal River plant.

| I'm going to abbreviate my comments in the interest of time, but I would like to give you a copy
| of the full comments if you would assess those.

| With the extension of the license at Turkey Point there will be twenty more years of
| environmental and economic benefits and continued reliable electricity for consumers and
| businesses in South Florida. I think it's a necessary option and I'd like to suggest three reasons
| why.

49-1 | First, license renewal will maintain economic electric generation that does not produce
| greenhouses gasses or other air pollutants, such as sulphur dioxide, nitrogen oxide and
| particulates.

49-2 | Second, license renewal will preserve good jobs for this area and will continue to support the
| economy.

49-3 | Thirdly, renewal of Turkey Point's license is far more economical with less environmental impact
| than building a new power plant or in pursuing other energy alternatives.

| Nuclear energy is the largest source of emission free electricity generation in America. It
| represents nearly seventy percent of our nation's emission free generation. Hydro-electric
| power is second at twenty-nine percent, and the remaining one percent is divided essentially
| between -- PXL's, also known as solar energy, and wind power.

49-4 It's obvious from these figures that nuclear energy provide vital clean air benefits to Florida and to the United States, considering that each state must control emissions from electric generating sources through the Clean Air Act. In this community Turkey Point also provides stable jobs, a strong tax base, and safe, reliable and affordable energy.

I mentioned earlier that I am a health physicist, which means that my profession is in radiation safety. So I'd like to talk for a moment about radiation.

During the course of the day we've heard a lot of speculation about radiation from the Turkey Point plant. What I'd like to do is, using some of the facts that are presented in the Draft Generic Environmental Impact Statement, give you some prospective with a simple comparison.

The Draft GEIS for Turkey Point includes an assessment of environmental impacts associated with radiation from plant operations. The results of this assessment can be found on Page 2-34 in the GEIS. The NRC characterizes the impact as small. In drawing on that information I'd like to offer a simple comparison to illustrate what the NRC means by small.

The subject meeting tonight is scheduled to last about three hours. During the time of this meeting the amount of radiation that each of us will receive from natural sources of radiation will be more than anyone living near the Turkey Point power plant will receive in the entire twenty years of operation associated with license renewal. That's because during the time we are in this meeting each of us is receiving natural radiation from our own bodies, from the food we eat and the water we drink, from the air we breathe and the ground we're standing on and the materials used to construct this building and even cosmic radiation reaching us from the stars and distant galaxies.

49-5 I want to close by saying that the Draft GEIS is factual and complete and should contribute to a fair and objective review of the environmental impacts of license renewal at Turkey Point.

49-6 I'd also like to commend Florida Power and Light and the nuclear professionals at Turkey Point for the continued excellent record of safety performance and commitment to protecting the health and safety of their community and the surrounding environment. Together these are the key factors in the NRC's conclusion in the Draft GEIS that support the positive decision of renewing the license for an additional twenty years.

Thank you very much.

Mr. Cameron: Thank you, Ralph, and we'll enter that on the transcript.

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| Let's go to Mark Oncavage, and then we'll go to Dave Peyton and Darwin Brown.

| Mark?

TPDSD
50-1 | Mr. Oncavage: There are a number of deficiencies in the alternative section of the Draft SEIS. This interim report from the Governor's Energy Study Commission is completely missing from the Draft SEIS. It's available on the State of Florida website. I suggest you download it to take a look at it. It's going to play a large part in our lives.

| The final report is due in December, well in time for the 2002 Florida Legislative Session. This deregulation plan says, and I quote, "Investor owned serving utilities should no longer be in the business of owning and operating generation."

| In simple language that means that Florida Power and Light, Tampa Electric, Florida Power Corp. will sell their power plants to other companies.

| A Governor's committee is working on a plan where retail sales of electricity is done by a different company that operates the transmission grid, and that is separate from the other companies that generate electricity. Basically, they are breaking up the monopolies that utilities now have.

| This proposal changes the whole character of the Draft SEIS. No longer would FP&L be concerned with the alternatives to relicensing Turkey Point. FP&L would sell or trade all their plants, sell their transmission lines to grid Florida and concentrate on their new business model of buying electricity to sell to their customers.

| Alternatives become meaningless. There are now 56 new merchant power plants proposed to come on line in Florida, 56 plants. These plants are natural gas. Some are simple cycle, some combined cycle. The electricity will be more expensive, but there will be no shortages of generation in Florida with or without Turkey Point. There is no time table on this restructuring. The disaster in California has everyone moving very cautiously, if not backing up.

| In this new light, license renewal all changes its character. Why would FP&L spend so much money if they can't keep the plant? Well, the book value and the market value would go up when they sell Turkey Point. It becomes a money game.

50-2 | In the Draft SEIS, FPL concludes that Turkey Point would not be a reasonable site for a natural gas plant since it would necessitate laying 150 mile pipe line through Everglades habitat.

It seems that the NRC has missed work to build a new gas pipe line from Grand Bahama Island to Ft. Lauderdale, Project Calypso. To serve the west coast of Florida another pipe line is proposed from Mobile Bay to Tampa under the Gulf of Mexico. That's called Project Gulfstream.

I'm sure when this information is considered it will have a marked affect on the alternatives to relicensing.

50-3 The Draft SEIS also needs to look at the conversion of the Fort St. Vrain (sic) reactor to natural gas. All the expensive infrastructure was reviewed and plant now produces electricity. I've heard that the conversion of the Fort St. Vrain plant costs 250 million dollars.

Natural gas conversion along with Project Calypso should be the strongest alternative to the license renewal in the Final SEIS.

50-4 One of the most troubling aspects of deregulation is the disposition of the millions of dollars held for the decommissioning of Turkey Point. I urge the NRC to become significantly involved in this issue. If private companies are allowed to get control of this money and the usual activities of mergers and acquisitions and spin-offs and selling of assets and bankruptcies all occur, we may never see this money again. That would be a real environmental impact, new and significant.

Thank you for the opportunity to speak.

Mr. Cameron: Thank you, Mark.

Mr. Peyton:

TPD51 Mr. Peyton: My name is Dave Peyton and I've lived and worked in Homestead for about twenty-five years and I don't have any fancy qualifications for science or anything like that. I am not a part of any of those special clubs and groups and all that. I'm thinking now after having heard some of these called the Friends of Thomas Edison, but I don't know whether -- I have to work on my dues and stuff like that.

I have no financial interest in FP&L. I am not employed there. I don't -- I'm not related to anybody who works there. I casually know four or five people who work at Turkey Point but their hours are so long that I don't particularly hang out with them very much either.

I do though live in a house here in Homestead that has electric water heater and electric stove and a microwave oven and I'd much rather be home tonight consuming electricity, but I heard

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51-1 | about this sort of thing and I don't see anybody else that just likes to use electricity coming over
| here. I learned my distinct appreciation of it in the summer of 1992 when I went for three or
| four months without any electricity and took cold showers when I finally got water again. I like
| electricity. I like the people who make electricity. I think electricity is a good thing.

| I used to live up north and I have some experience with coal and oil and burning and all that. I
| lived in Cleveland when the Cayahoga River caught on fire and you wouldn't walk along the
| beach of the Lake Erie, let alone eat anything that came out of it, and I took prescription
| antihistamines to such an extent when I lived up there that I had an enlarged prostate at 25,
| but that's more information than you need to know, I suppose.

| But I like the fact that this nuclear stuff, I don't have to breathe all that junk. I don't have soot
| around. I learned that everybody has notes here, so I'm trying to look at mine that I formally
| prepared here. You don't have the abbreviated version of these to put in your record there.
| And I'm not trying to be flippant about this. I recognize that this is a serious issue with a lot of
| folks.

51-2 | I never even considered this thing about Biscayne Bay and the need to camouflage Turkey
| Point. I've lived down here a long time. I've been stuck out on the bay in a boat at night and in
| bad rain storms. It's my favorite landmark to stay out of the shallows, so don't camouflage it too
| much.

51-3 | And so I just want to say that I'm here in support of clean electricity and I hope that they renew
| the license, and now I'm going to go home and sit in my recliner chair and burn electricity.

| Mr. Cameron: Thank you, Mr. Peyton. And there he goes.

| Mr. Brown, Darwin Brown?

| How about Mr. Chris Doherty?

TPD52 | Mr. Doherty: How you guys doing? My name is Chris Doherty and I represent South Florida
| Motor Sports and we're comprised of 54 members in the South Dade area, including business
| and community leaders. Our non-profit organization supports racing events out at the race
| track throughout the year.

52-1 | We strongly support Turkey Point's application for license renewal. Besides being one of the
52-3 | largest employers in the immediate area, we have found Turkey Point to be a good neighbor,
| conscious of the environment and generous to our community.

52-2 For years Turkey Point and its employees have contributed to the United Way, Boys Scouts and Girl Scouts, little league, South Florida Blood Bank and many more. We applaud Turkey Point's endless efforts in contributing to our community and being environmentally conscious, providing safe and economical power to our community.

Therefore, on June 26th our board of directors passed a resolution supporting the license renewal for Turkey Point to continue producing electricity for another twenty years.

Mr. Cameron: Thank you.

Next we're going to go to Mike Richardson, First National Bank. And thank all of you for your patience.

TPD53 Mr. Richardson: I am Mike Richardson and I work for the First National Bank of South Florida, used to be Homestead, now it's South Florida.

I've learned one thing tonight, and that is it doesn't make any difference if you come an hour early and sign up to speak, you still end up being the last speaker on the agenda.

I am among a group of people that was here last December also and urged you all to extend the operating license for Turkey Point, and with some caveats, and certainly those caveats still exist, but I still have the good feeling that Turkey Point can operate into the future safely and efficiently.

There's a distinct different flavor in tonight's meeting as opposed to the meeting back in December. In December we heard from an overwhelming voice from the local community about the value of Florida Power and Light and Turkey Point in our local community, whether it was economics, whether it was the contribution that the Turkey Point staff makes to our community, whether it was the low cost power, minimal environmental impact that Dave Peyton's just gone home to take advantage of. You need to know that I work with Dave at the bank and he is never that funny when he's at the bank.

You also heard tonight and before too about the impact of Turkey Point on the local environment, the crocodile breeding grounds and the threatened and endangered species that live within the compounds out there.

So it was with particular gratitude, I guess is the right word, that I was able to look at the Draft Supplement Environmental Impact Statement and see virtually across the board the impact that relicensing Turkey Point is characterized as small, and in many cases as virtually negligent -- negligible. Sorry about that.

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53-1 | I do want to emphasize though, as I did last December, that you've mentioned the fact that you
| have a parallel course, one is looking at the environmental impact, the other is the safety
| impacts. And I mentioned then that we as a community are depending upon your technical
| expertise for that safety impact. And we can talk about how the company impacts us here, but
| most of us don't have the technical expertise to be able to talk to the safety aspects of the plant
| and its ability to operate safely for another twenty years.

53-2 | Joette Lorion brings up valid points that need to be addressed and either confirmed or denied,
| as the case may be. I don't think there's anybody in our community, I said this last December, I
| don't think there's anybody in our community that would object to the continued operation of the
| nuclear facility at Turkey Point for an additional twenty years as long as we all felt very
| comfortable that it can be done safely and it will continue to general low cost, environmentally
| low impact electrical power to support our community and provide us with the quality types of
| people and activities that FP&L contributes to Homestead, Florida City and the Greater South
| Dade area.

| Thank you very much.

| Mr. Cameron: Thank you.

| Let's go to Mr. Broom and Mr. Shomar.

TPD54 | Mr. Broom: I'd have somebody turn off the lights for five minutes just so we understand the
| importance of what we're talking about tonight. I'd also like to say good evening.

| My name is Chuck Broom. I am with Florida International University in the Center for
| Environmental Technology. I'm the associate director there.

| I've been in the nuclear and environmental field for over twenty-one years, with some emphasis
| in nuclear construction and engineering maintenance and actually reactor decommissioning
| and dismantlement.

| But tonight I want to speak as a private citizen and a resident of South Florida. I was here for
| the afternoon session also, so I got to see the view graphs up there that no matter whether I
| live in Broward or I work in Miami, I'm going to get hit by the air plume that's coming my way.

| First, I'd like to recognize the NRC and thank them for the job that they do. I've been involved
| with them on again and off again most of my career. I'd also like to recognize National
| Laboratories and my friends at PNNL, where I've had a twenty year association with, the
| professional colleagues at Florida Power and Light and many of you who are here that work
| there. I don't think anybody, if you haven't ever dressed up and walked down a reactor and

been in the middle of it, really understand what it takes, the commitment it takes to run that machine. And that's what a reactor is, it is a machine.

And then lastly but most importantly, I'd like to recognize all of the community members here that have an interest.

54-1 I wrote but my notes were unprepared, maybe they're even more extraneous than prepared, would be short. I endorse the license extension of the Turkey Point 3 and 4 and why, because in my view power plants are a national resource.

54-2 More importantly, power plants are a national -- are an issue of national security, for this country, for this state, for this community. In my opinion the stability of that resource is paramount to any national security element that is considered locally or in Washington, D.C. or any place in the world.

I've had the privilege of having a tour that has taken me across this great land. I've seen, like you, the ransoming of our national resources by foreign oil interest. I have seen our aged and underprivileged citizenry die when I was working in Chicago. I have seen and I have friends that are experiences the brown outs in California right now.

On an international assignment, I can tell you -- our good friend has already left -- I can tell you what it's like to get stuck in an elevator somewhere between the first and fourteenth floor, because about that time the Uranian Government pulled the plug on that quadrant and you're stuck in a four by four elevator for four hours because you couldn't get out, because they didn't have enough power.

Where are we going to get the power if we don't have our own sustainable resource? We're going to ransom this country and the resources we have if we don't have it.

54-3 Our standard of living, nationally and here in Florida, is dependent upon safe reliable power and our future as a nation depends upon it. But when looking at these issues you have to look at performance. Florida Power and Light has a history and a reputation for quality performance. Those of you that were with us earlier this afternoon got to hear the representative from the IBEW speak about the national recognition and the industrial recognition that FP&L has received and that Turkey Point has received.

I'm a businessman. That's my job. My job is to help that center grow. In business I like to look my potential partners in the eye and know that they are as dedicated to the challenge ahead as I am. And since 1997 I have had an indirect professional relationship with FP&L. They haven't given me any work, but I've had an opportunity to know them and to know their management team. And I have been to the plant.

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54-4 | When you walk to the Turkey Point plant, from the security guard that meets you, to the
| radiation control technicians who escort you around, to the project managers and to the facility
| managers, you find a commitment to excellence at that plant. It is an organizational culture at
| that plant. So I don't care if I'm talking to a craftsman or I'm talking to Bob Hovey, I'm going to
| get the same commitment and the same straightforward response and pride in their operation
| that I would want in my own business affairs.

| I know of no other finer team of professionals than what they have out at that plant, and I have
| been at all – I have been at nine of the Federal nuclear reservations and I have been at about
| four other plants besides Turkey Point.

| The thing that I would leave you with is that they are our neighbors and for some of us they are
| family. And I know that they can and will do the job safely and efficiently. And knowing them,
| they have my trust to do the right thing, whether it's an environmental issue, a safety issue or
| business issue. I expect on time, on demand power at the cheapest cost in a safe way, and I
| know that Bob Hovey and Florida Power and Light and his team will do that.

| Thank you.

| Mr. Cameron: Okay, thank you, Mr. Broom.

| We have a few speakers left. Mr. Shomar and Mr. Randles and Jennifer Balfe and Bob
| Vandorser.

TPD59 | Mr. Shomar: It's about an hour past my bedtime so this is a big sacrifice for me, but it's a
| pleasure for me to be here.

| Good evening. My name is Wasin Shomar and I have lived in this area since 1983. I speak
| before you today not only as a concerned citizen, but also as a person that holds a Ph.D. in
| Electrical Engineering, as a previous Dean of Engineering at Miami-Dade Community College,
| and also as the current present of Miami-Dade Community College, and I'm only two weeks in
| this job, so if you haven't heard the news, that's why.

| What brings me here today is my concern for safety and efficiency, my love for the environment
| and my concern for our local economy and the preservation of jobs for our local residents.

55-4 It has been proven and documented time and time again that nuclear energy is unquestionably
55-1 the safest and the most efficient effective and environmentally friendly means of producing
electricity. To guarantee the safety of the residents one must insure that all safety procedures
at Turkey Point are fully adhered to and that the employees at Turkey Point are well educated
and well trained.

The fact that Turkey Point is the only plant in the United States to receive three consecutive
superior ratings from the NRC in the recent years leaves me no doubt that Turkey Point is one
of the safest and most reliable nuclear power plants in the U.S. and even in the world.

In terms of the qualifications of the employees, almost half of Turkey Point's employees hold
advanced degrees. That education is further enhanced by the training they receive. There are
more than twelve training programs offered to employees. Some are so specialized that they
are certified by an independent training organization.

The Turkey Point management even went further in terms of training where they set up a
rigorous training program with Miami-Dade Community College and Bob Hovey and I and our
teams work very, very closely together on that. And the purpose of this was to further advance
the knowledge of the Turkey Point employees and to allow us to create a home grown pool of
talent for future job openings at the plant.

FPL confirmed their commitment to quality training by creating an endowment scholarship fund
that produces twenty full tuition scholarships every year to community residents to participate in
this specialized training program at the college.

55-2 I must point out that I do have a lovely wife and two lovely young boys that live within a few
miles away from Turkey Point and I would not be standing before you today if I was not 100
percent sure that Turkey Point is absolutely and definitely safe and vital to our community.

55-3 As a concerned neighbor and somewhat of a self proclaimed field expert, I'm here to tell you
that it would be a great disservice to our community and a grave mistake if the license is not
renewed. I urge you to renew Turkey Point's license for twenty more years, thus renewing our
hopes for a safe and strong future economy for our beloved community.

Thank you.

Mr. Cameron: Thank you, Mr. Shomar.

Mr. Randles?

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- TPD5d | Mr. Randles: Good evening. My name is Johnny Randles. I'm the business manager and
| president of Local Union 359, International Builders of Electrical Workers here in Dade County,
| and just about everything that's been said is on my notes.
|
| I come from a small town up in Southern Illinois and I graduated out of high school in 1962, all
| seventeen of us did. On Saturday night I used to take my date to Sears and watch them unload
| the Sears truck. That was the highlight of the week.
|
| So I went -- after I got out of the service I went to work for the railroad and I worked for them for
| fifteen years, went to an apprenticeship program with them, and it's a great apprenticeship
| program. It's probably one of the best ones that I recognize in the country.
|
- 56-1 | Through that whole thing, safety was not part of that apprenticeship program. Eighteen years
| ago I come to Florida and went to work for Florida Power and Light. I found out what safety is
| all about. They completely changed the way you think about safety by how they do things. Bob
| Hovey and myself here work very closely on safety. That's one of the things we agree upon
| wholeheartedly. We have no disagreements with that. We work well together. You heard the
| business manager here earlier today talk about the safety that we do throughout the state.
| We're setting records on safety out there. We have programs out there where we're looking at
| each other. We actually go and check each other, have a check sheet to go check off on
| things that we do. This is not part of my speech in here.
|
- 56-2 | And one of the things that we do produce is 693 million watts of electricity per each unit, and
| that approximately covers everything from Miami Airport south. So if we loose them units we'd
| be watching T.V. in the dark down here. That's one of the bad things that we'd be doing.
|
- 56-3 | Turkey Point's done a lot of things for us. We hear about the impact it has -- that we've had on
| our environment to crocs and everything else. I've been out there and looked at -- they don't
| allow us out there any more because they're afraid of some impact we may have going out
| there. You used to go out there and it used to be good fishing back in the back canals out
| there, but they don't allow us to do that any more. Which we understand why they do it,
| because they are protected out there. And I hear some of the stories about some of the
| National Geographic people that's come down and actually taken movie and stuff. There's one
| photographer there that talked about coming out and taking pictures and they take him out in
| the air boat and they got up real close on this bird and he was taking pictures out there. They
| said he was so excited when he come back he just couldn't hardly -- he couldn't even sleep that
| night because he had never seen that bird before, whatever that bird is out there. But I heard
| the story and I thought it was real swell.
|

56-4 And one of the things I've learned at Florida Power and Light is, is a lot of things they do for us. They do a lot for the community. As you heard, United Way, we work a lot with United Way. They support United Way quite a bit. When I first started this job here I went up and we had a United Way meeting and I was sitting up front and I didn't realize the significance of sitting up front. Up front was the million dollar contributors and I didn't realize it. I was sitting up where all the million dollar contributors are. I don't know how much a million dollars is. Except I did see in Washington, D.C., I went mint up there and seen a million dollars up personal. That's as close as I've ever come to a million. But I do bank at First National Bank.

-- is growing about two percent a year for electricity and if we don't continue growing and using our resources we have right now, we're going to wind up just like California is.

I go to a nuclear conference every year and all the utilities from IBEW that we have in nuclear send representatives to Las Vegas out there and we meet out there every year. And I had been to Yucca Mountain and that's quite a project out there. The study that they're doing out there, they took a twenty-five foot drill and drilled into the side of Yucca Mountain and there's a twenty-five foot hole they dug five miles back into that.

South Florida went out there. Thought it was going to be nice and warm out there. I found out it was cold. Of course every place north of the airport is cold to me.

56-5 There's some of the things that we gain by having this plant. You take all the businesses and all the people that support it. There are several thousand businesses, or several thousand people that support it in this business that we do, that support us, the support that we get. Homestead here would be really impacted. I know a lot of business we use in here, because at one time I purchased -- I worked on the fossil site also when it was all combined, it was all one thing. They separated the fossil and the nuclear right now. And I did some purchasing for a couple of years. And I was surprised at the amount of money and stuff that's spent just for the products and things that we buy and the number of people that come in here and support our business.

56-6 Florida Power and Light didn't tell me what to say or what to do up here. I volunteered to come up here because I think it's a safe plant to work at. I'm an electrician out there. I've been an electrician out there for eighteen years. I go to training every year. It's part of my job to go to training, to go to learn, to find out about the environmental impact, the studies that they have at the other plants that we go over. We have to sign and verify that this is what we've done. Everything -- these people from the NRC right here, they regulate us. They do an excellent job of it, and I never realized how well NRC does until I come down to Florida and started working

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| for FP&L. They're a good agency. They're a good agency, they help us a great deal. They
| help us run that plant out there and without them we'd be hurting. And I'm not saying that to
| make any points, because I don't make any points.

56-7 | The power that we produce out there, we strive to make cheaper power. The employees there
| -- I represent about 300 plus employees there at that plant. I have about 1200 all together and I
| represent Lake Worth, Homestead and Dade County. And the -- most of the people that know
56-8 | me, know about this plant that work for FP&L. They know it's a safe plant. They know it's a
| safe place to work.

| If there is anything that I ever thought was unsafe, we got several mechanisms we could go to
| to do that.

56-9 | And you talk about -- you was talking about the cancer rates in Dade County. I am a survivor.
| A year ago, almost a year ago today, I found out that I had a problem and I had cancer. Where
| did I get that cancer out? I got that in 1969 when I quit smoking and quit drinking. Every doctor
| that I've been to, including the ones in New York that found it, first question they asked me was,
| did you smoke. That's what we ought to be looking at, if you're looking for safety. That plant
| out there is safe. I'd be glad to work at that until 2010 when I retire.

| That's all I've got to say, and thank you all. Thank you, appreciate it.

| Mr. Cameron: Thank you, Mr. Randles.

| Jennifer? Is it B-A-L-F-E? F-E. Jennifer Balfe, B-A-L-F-E.

TPD57 | Ms. Balfe: Good evening. My name is Jennifer Balfe. I'm a concerned daughter and future
| mother in this community. I live in Miami.

57-1 | I'd like to just say a few simple quick points. Number one, it's an old facility. That concerns me.
57-2 | The EIS report is weak. I notice quite often it mentions small impacts, but what exactly is small
| when we're speaking of humanity, endangered animals? It's kind of important. I don't know
| exactly what small is.

57-3 | FP&L is sensitive to the environment. I understand you do a lot of work. You restore things,
| you're helping out crocodiles, but what if the nuclear power plant would just explode and all your
57-4 | work would just go to dust? Modern technology, there's plenty of modern technology that
57-5 | seems to be being ignored. One thing mentioned is fear of the economy dropping. But if we
| focus on new energy there will be a new economy that will come about.

57-6 The commendable safety record seems to be -- holding back a pack of hungry wolves from children with a shredded rope. This safety aspect that we're keeping up. How about out with the old and in with the new?

I'm a concerned citizen and I'm not for nuclear energy at all. Thank you.

Mr. Cameron: Thank you, Jennifer, for being with us tonight.

Could we have Bob, is it Bob Vandorsen?

Mr. Anderson: Bob Anderson.

M. Cameron: Bob Anderson. It could be my eyes. Welcome.

TPD58 Mr. Anderson: My name is Bob Anderson and earlier today Luis Delan of the Vision Council, and I'm the chairman of the Vision Council which is an economic development agency here in Homestead, Luis presented our support for the relicensing of the nuclear plant.

And I hadn't planned to speak tonight, but a couple of comments just came to mind that I thought might be shared. I've had the opportunity, whether it's fortunate or not, to spend as a business consultant some time, several months over the past couple of years, in Eastern Europe. And when you go to a country like Bulgaria, first of all the whole country seems to be lit by a 40 watt bulb. I mean it's dark.

But I was walking along the street with a business associate over there and stuff was falling on my head. And I thought perhaps it was snow, but it was ashes. We looked around and here's this plant spewing stuff and we're in downtown, main street. And I said, "What in the world were they thinking of when they built the plant there?"

The guy turns to me and says, "We didn't vote on it."

58-1 And I think that's an important distinction. Chernobyl was mentioned earlier. Chernobyl was built by a communist government, inspected by the same government, run by the same government. There was no union that could look at safety. There was no FP&L and NRC regulating it. There was no public as to whether it was good, safe, bad, anything else. To compare Chernobyl with any power plant in the United States with the oversight that we have, with the possibility of participation by citizens to put in their input, their concerns. You talk to somebody in Eastern Europe who's sitting there with some monster facility that was built under communism.

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| They never got a chance to say, "Hey, I don't want it here," whether it's safe or anything else.
| And the legacy that those people are living under will go on a long time, in the power plants, in
| the terrible architecture. The same people that built Chernobyl build a car called a Lada, and if
| you ever want to see a bum of an automobile, that is it.
|

58-2 | This is a wonderful system we have here. We're relying on the NRC to technically oversee it.
| We're relying on the good folks at FP&L who live here with us not to be sacrificing their families
| just as ours. And it's really a remarkable procedure that we go through here in this country and
| when you go spend some time in some of these dismal places in Eastern Europe, the
| gentleman talked about being stuck in an elevator, it happens. And you greatly appreciate the
| process that we have here and the regulation that we have here and the companies that we
| have here that provide this thing, because there's a lot of places in this world that never had a
| choice and got some pretty bad stuff from where they live, the buildings they live in, the cars
| they drove and what the power was and what got sprayed around their neighborhood.
|

| So I say right on, and thank you very much.
|

| Mr. Cameron: Thank you, Mr. Anderson. ...
|

| We have one final speaker. I don't think I missed anybody, but hopefully someone will remind
| me if I did, someone who signed up. But we'll close with Mr. Rothschild.
|

TPD59 | Mr. Rothschild: Thank you. My name is Rubin Rothschild. I'm an employee of FP&L and as
| you can see I'm also a Boy Scout.
|

| I was not asked by FPL to do this. I asked FPL if I could. I wanted to be part of this process. I
| wanted to see this process and I wanted to have a little say in this process as an adult, as a
| citizen of this country and an employee of FP&L.
|

59-1 | A little bit about myself. I graduated high school in 1957 and went to the Navy in 1958. In 1960
| I went to nuclear power school and since then I have spent twenty-eight of the last forty odd
| years in nuclear power in one form or another. I've also spent some time in some other
| industries and as has been said before, this plant has a culture, an atmosphere, an attitude of
| safety. Other plants that I've been in, they don't care about the employees, they kill to keep the
| product going. And I'm pleased to say that I'm part of that process and that I'm glad to be
| involved in that process.
|

I am a technical reviewer. I review purchase documents for technical adequacy, spelling adequacy, whether they meet the current design requirements, whether the evaluations are correct and current, and that they meet all the regulations for the State, the City and the Federal Government.

I also assist in reviewing changes to the material. If there's a change, because we're so old and a lot of the companies that we originally bought equipment from, they're out of business, they're obsolete, they don't make this equipment any more, and I'm part of the process that reviews and gathers the information and does the engineering to make sure that if widget A is no longer available, widget B will fit and meet those requirements and it will meet out design basis problem -- design basis and maintain the quality of the plant.

59-2 Also, I want to thank FPL for supporting me and the Boy Scouts with funds. Mr. Hovey is chairman of the Friends of Scouting Campaign for the District, the Thunderbird District. FPL supports the Boy Scouts, the facility. There's a marvelous scout camp out at the plant that we use for training and it's a scouts camp and it's right on the bay and the boys have a good time and it's also a Girl Scout camp too.

59-3 FP&L provides facilities for the Atomic Energy Merit Badge. We have the poster out there. For the last six years we've been able to get approximately thirty-six boys a year for the Atomic Energy Merit Badge and those boys appreciate that Merit Badge.

Also, I get personal encouragement from management for what I do for the scouts, and that's very gratifying.

Earlier I said that I was on vacation the last couple of weeks and on that vacation I took some trips on old Route 66 and it was quite an experience going through some of those old roads. And yesterday, I think or this morning on NPR, they talked about the Route 66 Association and their meetings in California. And one of the things they talked about was the old cars that have been restored that are still driving nowadays that the people are bringing out to California and they maintained these cars.

So I think there's a relationship between maintaining the car that's over fifty or sixty years old and maintaining a plant that's only thirty some years old for another twenty years or thirty years. So I think there's a causal relationship there that we can maintain this plant and I'm pleased and proud to be part of that process, to say that we can get the parts that the plant needs on time and when they need them.

Appendix A

59-4 | I was looking at the report, part of the report that says okay, if we do fossil we can do this, if we
| go solar we can do that. But all of those processes say that we have to close this plant. So
| that means we have to become a disposable society. We have to throw away this plant and
| build a new one, and I don't think that's the way to go.

| So I want to thank FPL and I want to thank the NRC and thank you all.

| Mr. Cameron: Thank you, Mr. Rothschild.

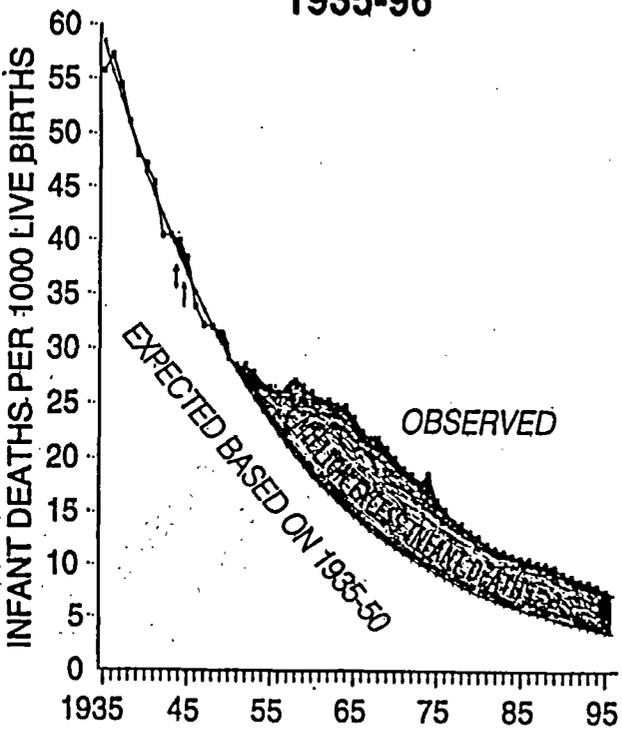
| Did I miss anybody who signed up?

| Okay. We do have an evaluation form on the meeting. If you could fill it out we'd appreciate
| that.

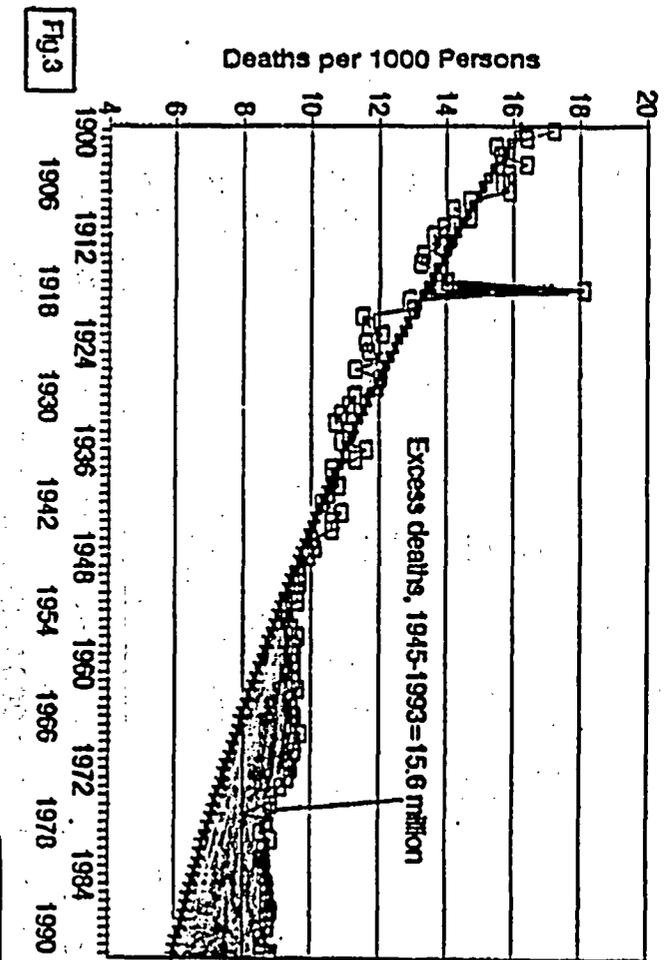
| I want to thank you from all of the NRC staff for all the good information tonight and all the
| heartfelt comments that we heard. And you have a contact information, Jim Wilson. Feel free
| to contact any of us any time and we'll try to provide information or whatever.

| Thank you very much. We're adjourned.

United States of America INFANT MORTALITY RATES 1935-96



US Crude Mortality Rates, 1900-93
Observed and Expected Rates per 1000



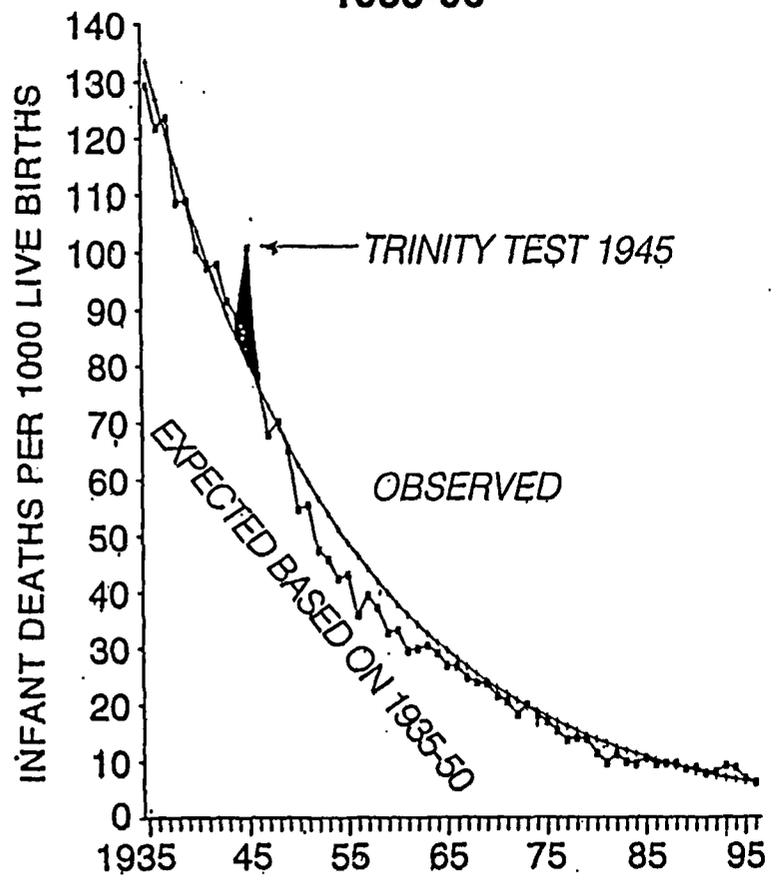
TPD 17

January 2002

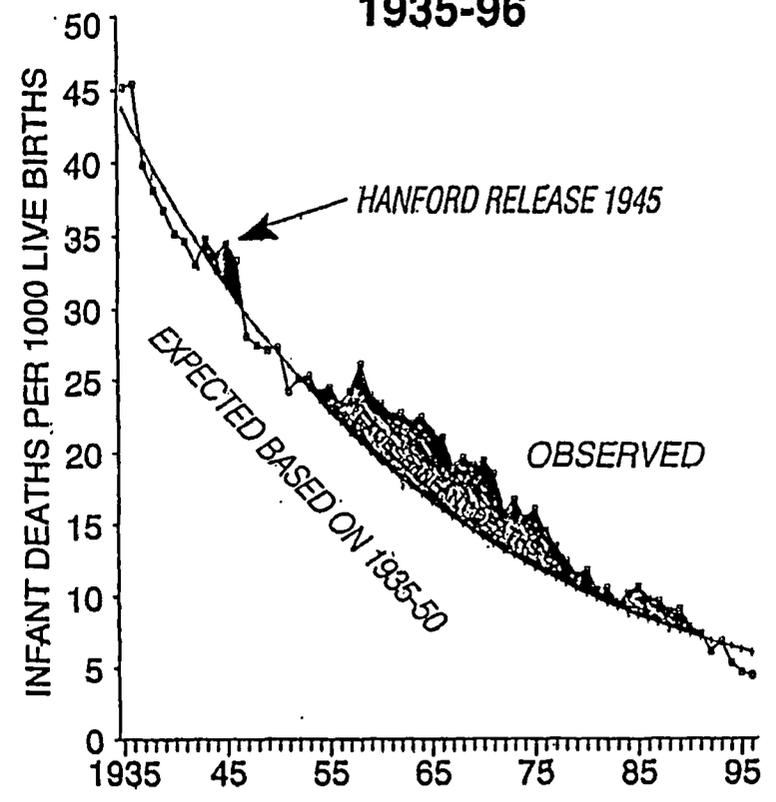
A-255

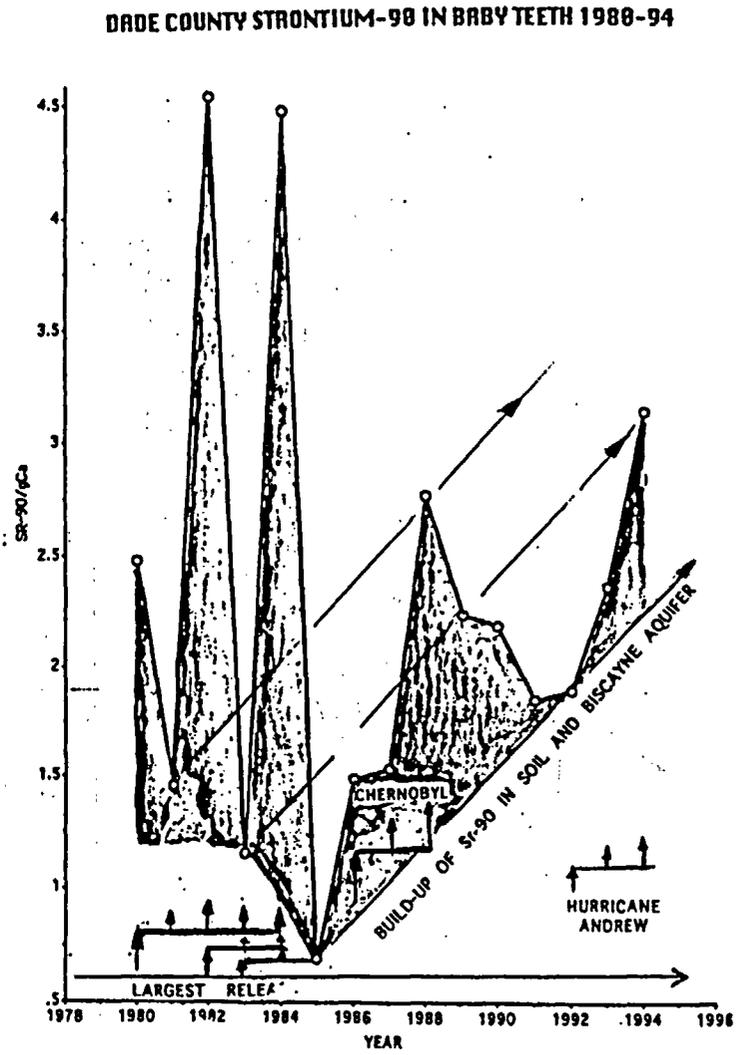
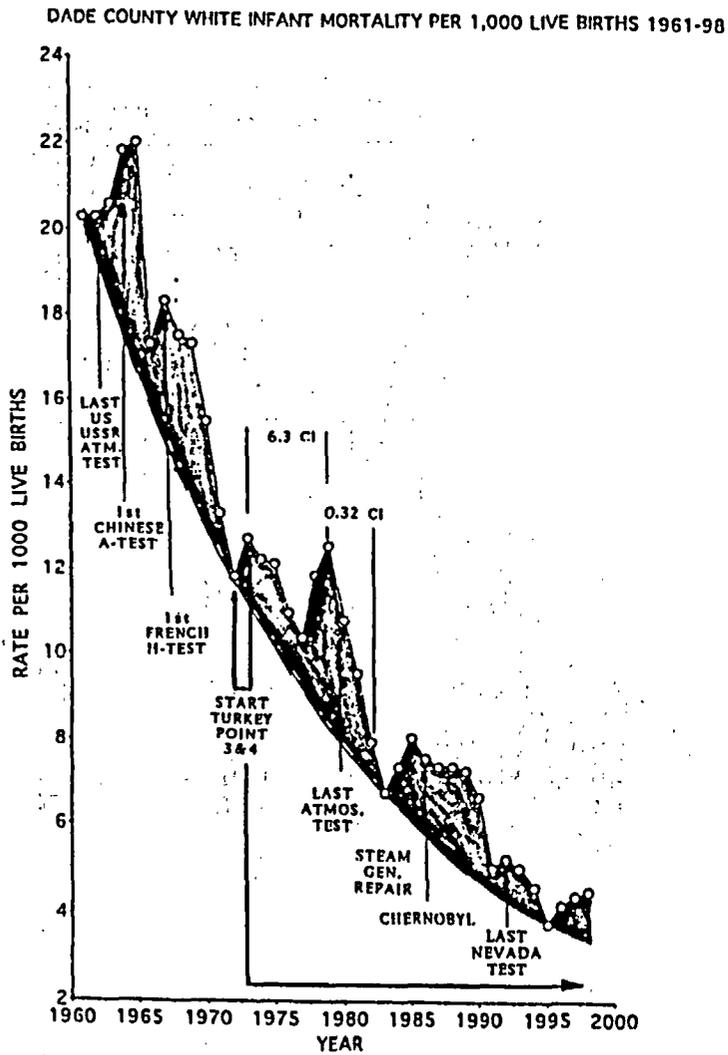
NUREG-1437, Supplement 5

NEW MEXICO INFANT MORTALITY RATES 1935-96

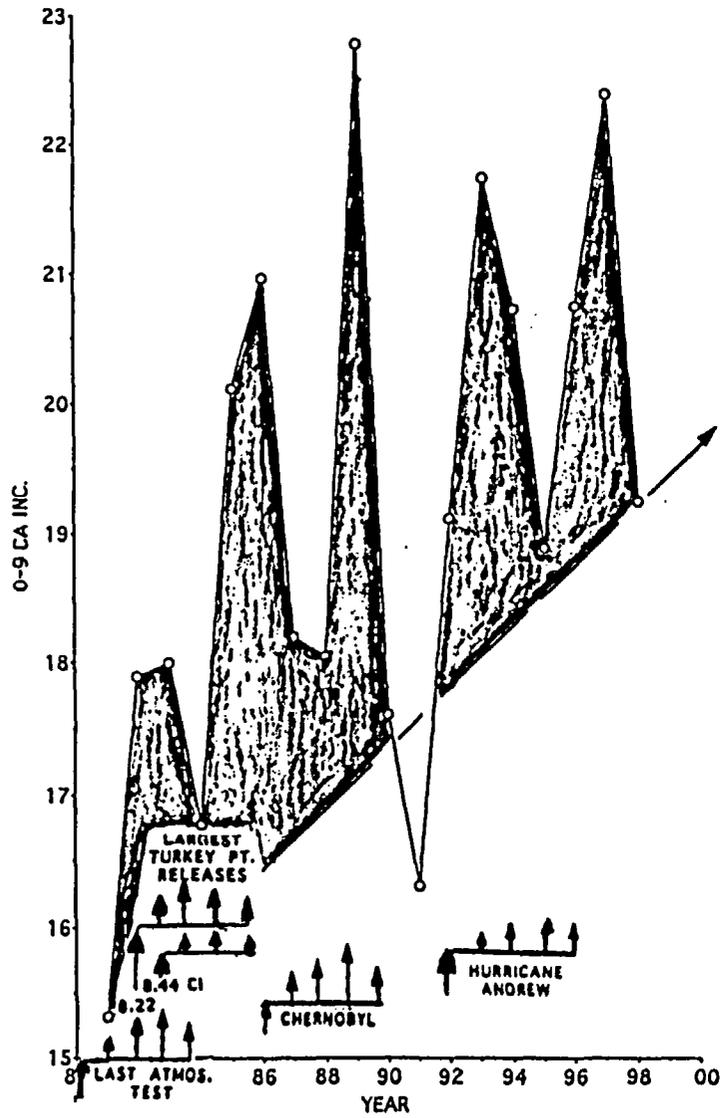


Washington State INFANT MORTALITY RATES 1935-96

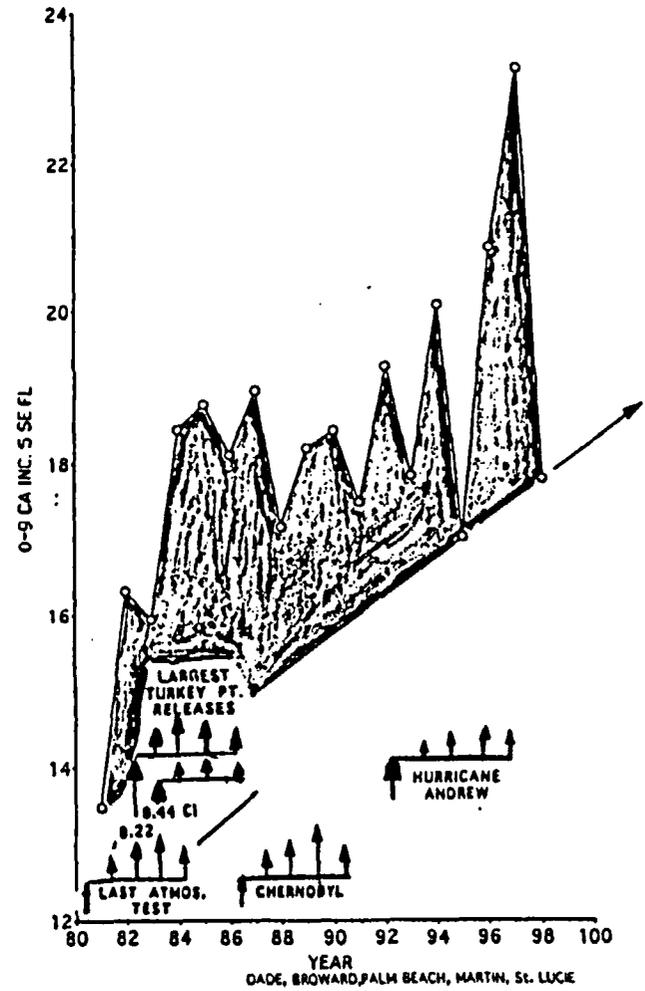




DADE 0-9 CANCER INCIDENCE PER 100,000 '81-'98



FIVE SOUTH-EAST FLORIDA 0-9 CANCER INCIDENCE PER 100,000 '81-'98



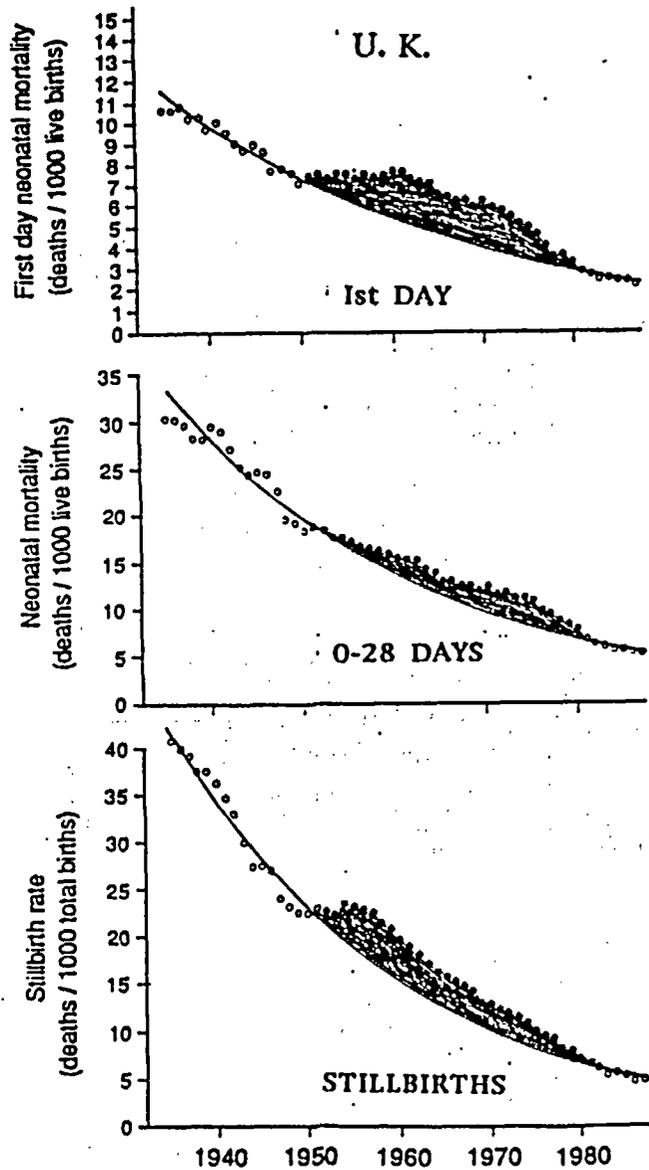
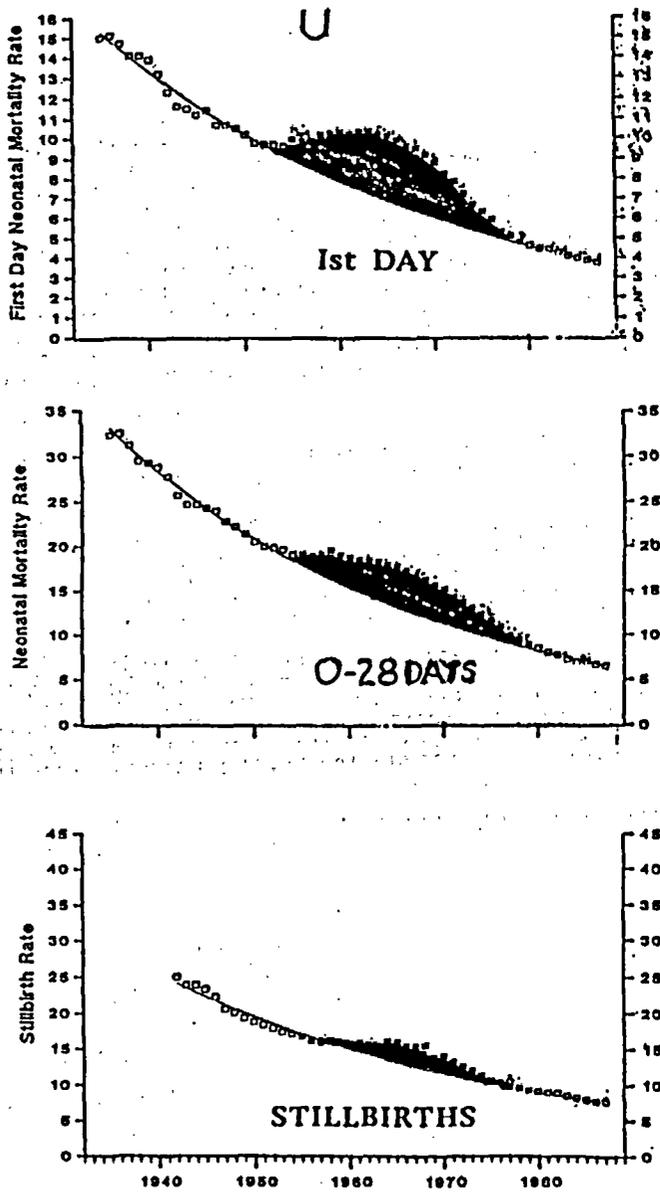


FIG 2—First day mortality, neonatal (0-28 days) mortality, and stillbirth rates for England and Wales.

TPD 32

Thomas A. Breslin
10440 S.W. 60 St.
Miami FL 33173-2826

August 5, 2001

Mr. James H. Wilson
Mail Stop O 11 F 1
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20277-2904

Dear Mr. Wilson,

I would like to comment on the subject of the July 17, 2001, Public Meeting to Discuss the Draft Supplemental Environmental Impact Statement for Turkey Point Units 3 and 4.

I have been a resident of Miami-Dade County for more than 25 years; I hold a Ph.D. in history and have been director of sponsored research and then Vice President for Research at Florida International University, the state university in Miami-Dade County, for nineteen and a half years. In addition, since 1994 I have been a member of the Council of Sponsoring Institutions of the Oak Ridge Associated Universities (ORAU), manager of the Oak Ridge Institute for Science and Engineering (ORISE).

I was impressed by the professional behavior of the Commission staff who conducted the meeting and made technical presentations and also by the friendliness of the staff members who greeted the public at the door of the meeting room. All who wished to speak publicly were treated with consideration. All were invited to speak privately with Commission representatives if they so chose. I did so and found Commission representatives willing to discuss matters in some detail.

The renewal process was very clearly outlined for the audience. I was concerned to learn from the discussion of the license renewal process that the focus of this particular meeting would be narrowly focused on matters that pertained only to the Turkey Point plants 3 and 4 and would not address general environmental issues that involved them.

Nothing in the handout, "Preliminary Results of Environmental Review of Turkey Point Units 3 and 4," or the discussion indicated that the looming shortage of technical and scientific personnel in the nuclear industry had been addressed in the general environmental impact statement. At this meeting, numerous FP&L employees, most over 45 or 50 years of age, spoke about the enthusiasm of the workers at the plants and their determination to work with management to operate the plants safely. Having seen at first hand the operation of FP&L's St. Lucie plants and the intense dedication of company management and employees to safety and ongoing training, I was not surprised by the statements to that effect made by company officials and workers. I do believe, however, that the looming shortage of technical and scientific personnel in the nuclear industry will affect FP&L and must be addressed as part of its relicensing review. Adequate numbers of properly trained workers are essential to the operation

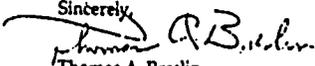
of the industry as a whole and individual plants as well, including Turkey Point 3 and 4. Across the country, the number of students studying for work in the nuclear industry has been dropping and university reactors have been fewer and fewer. What steps has FP&L taken and what steps will it take to ensure adequate numbers of workers under such industry-wide conditions?

I might add here that the very last speaker from the public attending the meeting, a Mr. Ruben Rothschild (sp?), an FP&L employee, 28 year veteran of the US Navy and nuclear power industry, and Scoutmaster, raised a warning flag that might give the Commission grounds for concern. The speaker said that he had worked at more than one nuclear facility and contrasted the fine management of the Turkey Point reactors by FP&L with poor management at one or more other sites. I believe that the Commission should, for the public good, follow up on that public testimony, informal though it may have been, about the alleged poor management at those other plants.

I hope that the Commission will carefully consider the statement made by one of the speakers, a mathematician employed by Miami-Dade Community College, who questioned the validity of the statistical methodology used in the General Environmental Impact Statement.

Over and over, speakers made the point that nuclear power plants made for cheaper energy and freedom from dependence on foreign oil. I am not sure that such arguments are germane to the general or specific environmental impact issues but, if they are, then I have to enquire whether the nuclear industry is subject to a monopolistic source of fuel at home. I understand that the American nuclear industry could turn to European countries including Russia for fuel. World markets for petroleum, however, are more broadly based and thus presumably less risky for energy consumers.

I left the meeting with a strong concern that the division of the review process into General and Specific Environmental reviews was efficient but left something to be desired from a systems perspective, as I mentioned afterwards to Mr. Brant of the Commission. The lack of political will to solve the problem of long-term storage of spent fuel, for example, makes the assumption that on-site storage of spent fuel at Turkey Point will be temporary seem increasingly weak. And, as I mentioned above, the work force issue is another general issue with inescapable implications for Turkey Point 3 and 4. I also came away puzzling over the following statement in the handout in the section, "Radiological Impacts on Human Health," "National Cancer Institute examined cancer mortality rates around 52 nuclear plants, including Turkey Point, and found not causally linked to deaths from leukemia or other cancers in nearby populations." I was under the impression that, in the absence of a specific catastrophic instance, causal determinations were exceptionally hard if not impossible to make using public health data. Thus the inability to demonstrate causality should not necessarily be grounds for complacency.

Sincerely,

Thomas A. Breslin

32-3

32-4

32-5

32-6

32-1

32-2

January 2002

TPD 33



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

July 31, 2001

ER-01/594

James H. Wilson
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 5 Regarding Turkey Point Units 3 and 4

Dear Mr. Wilson:

The Department of the Interior has reviewed the referenced document and has no comments at this time. If you have any questions I can be reached at 404.331-4524.

Sincerely,

[Handwritten signature]

Gregory Hogue
Acting Regional Environmental Officer

A-261

NUREG-1437, Supplement 5

TPD 60



STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS

'Dedicated to making Florida a better place to call home'

JES BUSH
Governor

STEPHEN BERRY
Secretary

August 23, 2001

Mr. David B. Mathews
Division of Regulatory Programs
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Nuclear Regulatory Commission - Florida Power and Light Company - Turkey Point Units 3 and 4 - Notice of Availability of Draft Supplement 5 to the Generic Environmental Impact Statement and Public Meeting for the License Renewal of Turkey Point Units 3 and 4 - Miami-Dade County, Florida
SAI: FL200106200431C

Dear Mr. Mathews:

The Florida State Clearinghouse, pursuant to Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced project.

Based on the information contained in the Draft Supplement 5 to the Generic Environmental Impact Statement and the enclosed comments provided by our reviewing agencies, the state has determined that, at this stage, the license renewal for the Turkey Point Power Plant units 3 and 4 is consistent with the Florida Coastal Management Program. However, all future environmental documents prepared for this project must be forwarded to the State Clearinghouse for inter-agency review.

The South Florida Regional Planning Council (SFRPC) notes that the project should be consistent with the goals and policies of the Miami-Dade County comprehensive plan and corresponding land development regulations. SFRPC recommends that impacts to the natural systems be minimized to the greatest extent feasible. SFRPC also requests that the goals and policies of the Strategic Regional Policy Plan for South Florida be observed when making decisions regarding this project. Please refer to the enclosed SFRPC comments for further details.

2828 SHUMARD OAK BOULEVARD • TALLAHASSEE, FLORIDA 32399-2100
Phone: 850.488.0466/Suncom 278.8466 FAX: 850.921.0781/Suncom 281.0781
Internet address: http://www.dca.state.fl.us

CRITICAL STATE CONCERN FIELD OFFICE
3706 Orange Highway, Suite 112
Tallahassee, FL 32309-2127
DAB: JRP:JMS

COMPLAINT PLANNING
2817 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
DAB: JRP:JMS

EMERGENCY MANAGEMENT
2122 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
DAB: JRP:JMS

HOUSING & COMMUNITY DEVELOPMENT
2122 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
DAB: JRP:JMS

33-1

60-1

60-2

60-3

60-4

Appendix A

Mr. David B. Matthews
August 23, 2001
Page Two

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Ms. Jasmin Raffington at (850) 922-5438.

Sincerely,

Shirley W. Collins
Shirley W. Collins, Acting Administrator
Florida Coastal Management Program

SWC/dc

Enclosures

cc: Carlos Andres Gonzalez, South Florida Regional Planning Council

TPD 61

South
Florida
Regional
Planning
Council



July 30, 2001

Mr. Jack Gaskins
Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100

RE: SFRPC #01-0654, SAJ#FL200106200431C, Request for comments on the notice of availability of Draft Supplement 5 to the Generic Environmental Impact Statement and Public Meeting for the License Renewal of Turkey Point Units 3 and 4, Nuclear Regulatory Commission, Florida Power and Light Company, Miami-Dade County.

Dear Mr. Robbins:

We have reviewed the above-referenced application and have the following comments:

- The project should be consistent with the goals and policies of the Miami-Dade County comprehensive plan and its corresponding land development regulations. It is important for the applicant to coordinate permits with all governments of jurisdiction. 61-1
- Staff recommends that, if this permit is granted, 1) impacts to the natural systems be minimized to the greatest extent feasible and 2) the permit grantor determine the extent of sensitive wildlife, marine life, and vegetative communities in the vicinity of the project and require protection and or mitigation of disturbed habitat. This will assist in reducing the cumulative impacts to native plants and animals, wetlands, and deep-water habitat and fisheries that the goals and policies of the Strategic Regional Policy Plan for South Florida (SRPP) seek to protect. 61-2
- The project is located immediately adjacent to the Biscayne National Park and Biscayne Bay Surface Water Improvement and Management Area (SWIM), natural resources of regional significance designated in the SRPP. The goals and policies of the SRPP, in particular those indicated below, should be observed when making decisions regarding this project. 61-3

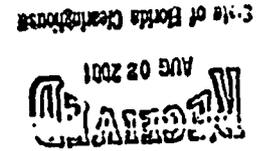
Strategic Regional Goal

- 3.1 Eliminate the inappropriate uses of land by improving the land use designations and utilize land acquisition where necessary so that the quality and connectedness of Natural Resources of Regional Significance and suitable high quality natural areas is improved.

Regional Policies

- 3.1.1 Natural Resources of Regional Significance and other suitable natural resources shall be preserved and protected. Mitigation for unavoidable impacts will be provided either on-site or in identified regional habitat mitigation areas with the goal of providing the highest level of

3440 Hollywood Boulevard, Suite 140, Hollywood, Florida 33021
Phone: (850) 945-4416, Fax: (850) 945-4418



July 30, 2001
Page 2

resource value and function for the regional system. Endangered faunal species habitat and populations documented on-site shall be preserved on-site. Threatened faunal species and populations and species of special concern documented on-site, as well as critically imperiled, imperiled and rare plants shall be preserved on-site unless it is demonstrated that off-site mitigation will not adversely impact the viability or number of individuals of the species.

3.1.9 Degradation or destruction of Natural Resources of Regional Significance, including listed species and their habitats will occur as a result of a proposed project only if:

- a) the activity is necessary to prevent or eliminate a public hazard, and
- b) the activity is in the public interest and no other alternative exists, and
- c) the activity does not destroy significant natural habitat, or identified natural resource values, and
- d) the activity does not destroy habitat for threatened or endangered species, and
- e) the activity does not negatively impact listed species that have been documented to use or rely upon the site.

3.1.10 Proposed projects shall include buffer zones between development and existing Natural Resources of Regional Significance and other suitable natural resources. The buffer zones shall provide natural habitat values and functions that compliment Natural Resources of Regional Significance values so that the natural system values of the site are not negatively impacted by adjacent uses. The buffer zones shall be a minimum of 25 feet in width. Alternative widths may be proposed if it is demonstrated that the alternative furthers the viability of the Natural Resources of Regional Significance, effectively separating the development impacts from the natural resource or contributing to reduced fragmentation of identified Natural Resources of Regional Significance.

Strategic Regional Goal

- 3.1** Develop a more efficient and sustainable allocation of the water resources of the region.

Regional Policies

- 3.2.5** Ensure that the recharge potential of the property is not reduced as a result of a proposed modification in the existing uses by incorporation of open space, pervious areas, and impervious areas in ratios which are based upon analysis of on-site recharge needs.
- 3.2.6** When reviewing proposed projects and through the implementation of the SRPP, discourage water management and proposed development projects that alter the natural wet and dry cycles of Natural Resources of Regional Significance or suitable adjacent buffer areas or cause functional disruption of wetlands or aquifer recharge areas.
- 3.2.9** Require all inappropriate inputs into Natural Resources of Regional Significance to be eliminated through such means as: redirection of offending outfalls, suitable treatment improvements or retrofitting options.
- 3.2.10** The discharge of freshwater to Natural Resources of Regional Significance and suitable adjacent natural buffer areas shall be designed to imitate the natural discharges in quality and quantity as well as in spatial and temporal distribution.

Mr. JACK CASARUS
July 30, 2001
Page 3

- 3.2.11** Existing stormwater outfalls that do not meet or improve upon existing water quality or quantity criteria or standard, or cause negative impacts to Natural Resources of Regional Significance or suitable adjacent natural buffer areas shall be modified to meet or exceed the existing water quality or quantity criteria or standard. The modification shall be the responsibility of the outfall operator, permittee or applicant.

Strategic Regional Goal

- 3.4** Improve the protection of upland habitat areas and maximize the interrelationships between the wetland and upland components of the natural system.

Regional Policies

- 3.4.1** Require the utilization of vegetation and wildlife surveys in project review which include the identification of listed species habitat quantity and quality.
- 3.4.2** Utilize the results of the vegetation, wildlife and listed species habitat surveys in the reduction of project related impacts to identified wildlife populations or communities. The results of the surveys will be utilized to ensure that the proposed project is compatible with identified or otherwise documented on-site viable populations or communities by retaining those populations or communities on-site.
- 3.4.4** Require the use of ecological studies and site and species specific surveys in projects that may impact natural habitat areas to ensure that rare and state and federally listed plants and wildlife are identified with respect to temporal and spatial distribution.
- 3.4.5** Identify and protect the habitats of rare and state and federally listed species. For those rare and threatened species that have been scientifically demonstrated by past or site specific studies to be relocated successfully, without resulting in harm to the relocated or receiving populations, and where *in-situ* preservation is neither possible nor desirable from an ecological perspective, identify suitable receptor sites, guaranteed to be preserved and managed in perpetuity for the protection of the relocated species that will be utilized for the relocation of such rare or listed plants and animals made necessary by unavoidable project impacts. Consistent use of the site by endangered species, or documented endangered species habitat on-site shall be preserved on-site.
- 3.4.8** Remove invasive exotics from all Natural Resources of Regional Significance and associated buffer areas. Require the continued regular and periodic maintenance of areas that have had invasive exotics removed.
- 3.4.9** Required maintenance shall insure that re-establishment of the invasive exotic does not occur.
- 3.4.10** Local governments shall be encouraged to require invasive exotic removal as a condition of development approvals.
- Strategic Regional Goal**
- 7.6** Achieve flexible and comprehensive emergency planning for a variety of emergencies

Mr. Jack Gaskins
July 30, 2001
Page 6

Regional Policies

- 7.6.1 Emergency plans should coordinate responses to interruptions to the general supply of each basic necessity for the equivalent of 25% of the region's population within 72 hours.
- 7.6.2 Local governments should devote increased attention to regulation and enforcement of operations and maintenance of man-made systems such as pumps and pipelines for extremely high hazardous materials to mitigate emergencies.
- 7.6.3 Promote the federal, state and regional coordination of a public information and awareness program concerning various types of hazards and appropriate response.

Thank you for the opportunity to comment. We would appreciate being kept informed on the progress of this project. Please do not hesitate to call if you have any questions or comments.

Sincerely,

Carlos Andres Gonzalez
Carlos Andres Gonzalez
Senior Planner

CAG/cp

cc: Ralph Central, FCMP
Dianne O'Quinn Williams, Miami-Dade County Planning and Zoning
Jean Evoy, Miami-Dade Environmental Resources Management

TPD 62



RECEIVED

26 AUG 30 PM 07

Rules and Directives
Branch
L-2001

Chief, Rules and Directives Branch
Division of Administrative Services
Office of Administration
Mailstop T-6D 59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20585-0001

Re: Florida Power & Light Company Comments
Draft Supplemental Environmental Impact Statement for
License Renewal of Nuclear Plants
Supplement 5 Regarding Turkey Point Units 3 and 4
66 Fed. Reg. 32851 (June 18, 2001); 66 Fed. Reg. 35283
(July 3, 2001)

Florida Power & Light Company (FPL), the applicant for the renewal of operating licenses for Turkey Point Nuclear Plant, Units 3 and 4, provides the following comments on the referenced draft supplemental environmental impact statement (DSEIS).

FPL agrees with all of the conclusions and proposed findings in the DSEIS. FPL offers the following comments largely as clarifications. FPL urges the Commission to issue a final EIS addressing the environmental impacts of the proposed renewal of the Turkey Point operating licenses as soon as possible.

Should you have any questions concerning FPL's comments, please contact E. A. Thompson at (305) 246-6921.

We appreciate the opportunity to comment on the DSEIS.

Sincerely yours,

Tony Jones

T. O. Jones
Acting Vice President - Turkey Point

TOJ/EAT/hlo
Attachment

Template = ADM-013

*E-REDS = ADM-03
Call = J.H. Wilson (6 MW)*

L-2001-184
10 CFR 51
10 CFR 54
AUG 29 2001

*66 PL 30857
4/18/01
①*

cc: U.S. Nuclear Regulatory Commission, Washington, D.C.

Chief, License Renewal and Standardization Branch
Project Manager - Turkey Point License Renewal
Project Manager - Turkey Point

U.S. Nuclear Regulatory Commission, Region II

Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

Other

Mr. Robert Butterworth
Attorney General
Department of Legal Affairs
The Capitol
Tallahassee, FL 32399-1050

Mr. William A. Passetti, Chief
Department of Health
Bureau of Radiation Control
2020 Capital Circle, SE, Bin #C21
Tallahassee, FL 32399-1741

Mr. Joe Meyers, Director
Division of Emergency Management
2555 Shumard Oak Drive
Tallahassee, FL 32399-2100

County Manager
Miami-Dade County
111 NW 1 Street 29th Floor
Miami, FL 33120

Mr. Douglas J. Walters
Nuclear Energy Institute
1775 I Street NW
Suite 400
Washington, D.C. 20006

ATTACHMENT 1
COMMENTS ON DRAFT GENERIC ENVIRONMENTAL IMPACT
STATEMENT (NUREG 1437 SUPPLEMENT 5)
TURKEY POINT UNITS 3 AND 4
LICENSE RENEWAL APPLICATION

PAGE	LINE NUMBER	COMMENT
1-5	26-27	Should read "contain an analysis of any Category 1 issues unless there is new and significant information on a specific issue - this is pursuant to 10 CFR 51.53 (e) (3) (iii) and (iv)."
1-8	4	The number 13,000 homes is incorrect. The correct number is "over 250,000 homes."
2-4	17-18	The stacks related to Turkey Point Units 1 and 2 and their environmental impacts are not within the scope of this major federal action and this discussion should be omitted from the DSEIS.
2-5	17	Delete the words "equilibrium core" and "rate". This clarifies the sentence.
2-7	15	Revise sentence to read, "FPL does not use biocontrol chemicals in the circulating water system."
2-7	23	The canal system is bordered by the Everglades Mitigation Bank not the Everglades. Directional descriptions toward or away from the Everglades are accurate. Revise the wording accordingly.
2-13, 4-24	15, 38	Change "an additional" to "Up to an additional ...".
2-20	1	It is unclear what boilers are being referred to. The nuclear plant does not have boilers.
2-21	8	Replace "Within southern Biscayne Bay, Card Sound, and the Turkey Point cooling canal system are..." with "Within the vicinity of Turkey Point are..." As written, the sentence implies that there are 11 protected species within the cooling canal system, an implication that is incorrect and inconsistent with the rest of the paragraph.
2-37	Table 2-8	Because Turkey Point is located in a high population area that has no growth control measures (Page 4-21, beginning on line 14), the Table 2.8 housing information is immaterial and should be deleted.
2-39	1	Education information is pertinent only if an applicant plans refurbishment. Because FPL plans no refurbishment (Chapter 3), the education information should be deleted.

62-2
62-3
62-4
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62-7
62-8
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62-10
62-11
62-12

PAGE	LINE NUMBER	COMMENT
2-41	Table 2-11	Because FPL plans no refurbishment (Chapter 3) and Turkey Point tax payments are small relative to the taxing jurisdiction's tax base (Section 4.4.3, beginning at line 30), the Table 2-11 had one information is immaterial and should be deleted.
2-43	2-3	It should be noted that the stacks related to Turkey Point Units 1 and 2 and their environmental impacts are not within the scope of this major federal action.
2-45	Table 2-13	The age distribution information is immaterial and should be deleted.
2-45	13	The transient population information is immaterial and should be deleted.
2-47	Section 2.2.8.6	The low-income information (page 2-48, lines 18 - 26) is demographic information that is pertinent only to the Section 4.4.6 environmental justice analysis and could be moved to that section. With the exception of the tax information (on page 2-50), the economic information is not relevant and should be deleted.
2-50	1-7	FPL is described here as a "major" property taxpayer, while Section 4.4.3 states that FPL pays two percent of the Miami-Dade property taxes. This discussion should be revised to factually state that FPL pays two percent of Miami-Dade property taxes without characterizing the nature of the tax payments.
4-7	36	For the reasons stated in FPL's Environmental Report submitted with its application for renewed licenses, FPL disagrees with NRC's conclusion that all Category 2 issues pertaining to plants with cooling ponds are applicable to Turkey Point Units 3 and 4.
4-22	24	Change the wording to read, "FPL assumed an increase of 60 employees during the license renewal period."
4-22	25	Change 185 to 184. The environmental report states that there will be 184 new jobs.

PAGE	LINE NUMBER	COMMENT	
62-13	4-35	35	As the environmental report indicates, the Turkey Point site was subject to daily tidal incursions before plant construction. DSEIS Section 2.2.9.1 indicates that the area has been subjected to a rising water table and had at one point been characterized as being too swampy to survey. Section 2.2.9.2 indicates that a cultural resources survey was conducted on land adjacent to the Turkey Point site, with no cultural resources identified. All these observations make it reasonable to conclude that cultural resources are unlikely to be found at the Turkey Point site. Therefore, it is unclear why the Turkey Point DSEIS contains the wording, "However, additional care should be taken ... to ensure that historic properties are not inadvertently impacted." There does not appear to be a reasonable basis for including the cautionary wording in the Turkey Point DSEIS and it should be deleted.
62-14	4-33	29	Revise the bullet to read, "Continue to deny public access to the canal." Other bullets should also be stated in terms of continuing action.
62-15	4-36	3	The word "states" should be "asserts."
62-16	4-36	6	The words "referred to" should be "alleges."
62-17	4-36	8	The word "stated" should be "asserts."
62-18	4-37	31, 32	"FPL 2000c" is an incorrect reference for the REMF Report.
62-19	4-40	6	Insert the following: "The Florida Department of Health's Bureau of Environmental Epidemiology has also reviewed the allegations of Gould, et al. (DOH 2001). The Department used the data cited by Gould, et al. to reconstruct calculations and was not able to identify unusually high rates of cancer in counties nearby nuclear power facilities. The Department concluded that, "Careful analysis and observation of the data presented here does not support the alarming claims made by the RPHP [Radiation and Public Health Project] regarding cancer mortality rates and trends in southeastern Florida counties when compared with the rest of the state of Florida and the nation."
62-20	4-42	32-41	The GOC are not applicable to Turkey Point as stated. The Criterion 2 reference is correct as it is referenced in the SAR. The ERP is not applicable to Turkey Point which was licensed before issuance of the ERP in 1987.
62-21			

PAGE	LINE NUMBER	COMMENT
5-2	21	Delete "and Section 5.1 of this SKIS" and add at the end of the sentence "and briefly discussed in Section 5.1 of this SKIS."
5-3	29	Insert after the word "events", "including for example hurricanes and flooding".
5-6	28	Change "core melt accidents" to "postulated core melt scenarios".
5-10	8-15	Modify the wording to read as follows: "The FPL approach in doubling of core damage frequency to account for the calculated benefits for external events provides a numerically reasonable estimate of the potential impact of external events. The staff believes the search for external event vulnerabilities as a part of the Turkey Point IPEEH, did not identify any risk contributors that would benefit from potential SAMAs and considers the FPL approach to be adequate."
5-14	12-18	Strike the sentences beginning with "The preliminary review" on line 12 and ending with "modeled in the current PBA" on line 18.
5-16	Table 5.3	Three SAMAs (50, 54, 116) listed in the ER are not listed in Table 5.3.
5-19	See 5.2.3 second line	Change sentence to read, "The cost estimates conservatively excluded the cost...".
5-19	2 nd paragraph 5 th line	Delete "FPL responded... attributes" and insert the following at the beginning of the sentence: "In its original submittal, supplemented with responses to NRC Staff's requests for additional information, FPL provided a summary of the key risk-reduction attributes...".
5-23	1 st paragraph under Sec 5.2.6.2 2 nd line	Strike the words "Although there could have been more attention given to evaluating normal costs,".
8-24	6	Insert the word "partially" between the words "pipelines through".
8-24	29	Replace the word "approximately" with "more than...". North of Lake Okechobee to Turkey Point would be between 100 and 200 miles.
8-60, 8-61 See also Table 8-9	29, 3 respectively	The 186 MW(c) shortfall (1386-1200) would have to be made up by MW and not MW-hrs. Running Turkey Point 1 & 2 at a higher capacity factor will not affect peak megawatt output.
8-61	7	Insert the word "direct" between "fire" and "environmental."



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July 17, 2001

Mr. Jim Wilson, Nuclear Regulatory Committee
OWFN
11555 Rockville Pike
Rockville, MD 20852

RE: Turkey Point Plant License Renewal

62-34

Dear Mr. Wilson:

62-35

I strongly support the Turkey Point Re-licensing effort. Turkey Point has been an excellent neighbor, as witnessed by myself, my company and community.

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They are the single largest private employer of the South Dade Community with over 800 full time employees with annual base salaries over \$62,000. I know, and have known, several employees who work at the Plant and live in the surrounding area who participate in numerous civic organizations and support our local community events.

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The economic impact of Turkey Point on the local area community is felt in payroll, property taxes and support of area local services and their product purchases.

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Turkey Point has an excellent environmental record. It has been demonstrated over the years with their strong commitment to the environment, which is represented by their support of the South Florida Eco system, and demonstrated most assuredly by their safety record.

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They are rated as one of the most reliable nuclear power plants in the United States and have consistently had "superior" ratings from the regulators, you - the NRC.

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The Plant is located approximately 8-9 miles east of my home. I have worked and resided in the general vicinity during this entire period. Never have I had any alarm or concern as a result of the Power Plant's location, but only found them to be quiet, outstanding neighbor that serves the local community, and beyond. I believe strongly that the re-licensing should be granted.

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Sincerely,

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Eric S. Johnson, President,
Community Bank of Florida
Homestead, FL 33030

Post Office Box 900400, Homestead, Florida 33090-0400
28801 S.W. 157th Avenue, Homestead, FL 33033 • 305-245-2211 • <http://www.communitybankfl.com>
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Given to docketing on 3 Aug 01

TPD 64

September 6, 2001

U.S. Nuclear Regulatory Commission
Division of Administrative Services
Office of Administration
Mailstop T-6D 59
Washington, DC 20555-0001

Via e-mail and regular mail

Re: **Objections and Comments on the Draft Generic Environmental Impact Statement (GEIS) for the License Renewal of the Turkey Point Nuclear Power Plant Units 3 and 4.**

INTRODUCTION

I am resident of South Florida and an environmentalist who has dedicated many years of my life working to protect and preserve the Florida Everglades and the South Florida ecosystem. The effect that the failure to adequately assess the environmental impacts that the relicensing of Turkey Point will have on the South Florida ecosystem in the Turkey Point Draft Generic Environmental Impact Statement (GEIS) will directly impact me and my family and friends who use the South Florida ecosystem for hiking, boating, bird watching, fishing, contemplation and observation of the diverse plant and animal species that frequent this fragile ecosystem. The human environment could also be adversely impacted by the offsite consequences of the NRC's proposed action to operate these old nuclear power reactors for twenty years beyond the original license.

A 1982 study (CRAC2) provided by the Congressional Subcommittee on Oversight and Investigations showed that in certain weather conditions, a meltdown at Turkey Point could cause 29,000 early deaths within a twenty mile radius of the plant, 4,000 delayed cancer deaths and 45,000 injuries within a seventy mile radius of the plant, and 43 billion dollars in property damage. Additionally, according to NUREG CR 4982, *Severe Accidents in Spent Fuel Pools in Support of Generic Issue #2*, a worst case accident in a spent fuel pool could result in an interdiction area (an area with such a high level of radiation that it is assumed that it can never be decontaminated) of 224 square miles. The adverse impacts to my property in particular, and the ecosystem as a whole, that may be caused by the NRC's proposed action demonstrate that I have a particularized legally protected interest in the outcome of this proceeding that falls within the zone of interests protected by the National Environmental Policy Act (NEPA).

The operation of these aged and embrittled nuclear power reactors for twenty beyond the

original license will cause more radioactive fission products to accumulate and could increase the probability and consequences of a nuclear accident; thereby increasing the threat of harm to me, my family, our property and the South Florida ecosystem, which includes priceless Everglades and Biscayne National Parks. These cumulative impacts, which should have been analyzed in a site-specific SEIS, have not been adequately addressed in the Draft GEIS, as required by NEPA. Nor did the Draft GEIS undertake a fair and objective NEPA analysis of alternatives to the relicensing proposal, as evidenced by page 8-55 of the Draft GEIS which amazingly concludes that the environmental impacts of solar power are LARGE, while those of continued operation of the Turkey Point nuclear power reactors, which create large amounts of nuclear waste and radioactive fission products, are SMALL.

The Draft GEIS for the License Renewal of the Turkey Point Nuclear Power Plants appears to "rubber stamp" Florida Power & Light's (FPL or Licensee) license renewal request, rather than permit the full and objective evaluation required under the National Environmental Policy Act (NEPA). The NRC's failure to prepare a full and objective site-specific Environmental Impact Statement (EIS), or Supplemental EIS (SEIS), prior to conducting the license renewal process (reportedly estimated to cost between \$15 to \$19 million dollars), is an irretrievable commitment of resources designed to prejudice the process prior to a full environmental analysis, and does not comply with the spirit or intent of NEPA. While, this may be the Commission's protocol for relicensing, I contend that this type of "end run" proceeding, apparently designed to skirt NEPA, does not meet the spirit or intent of the Act.

The NRC appears to be blithely unaware that South Florida is the scene of the largest ecosystem restoration project in human history. This is evidenced by a few scant paragraphs and a line on page 2-52 of the Draft GEIS that states that "The Federal Government is also participating in the Comprehensive Everglades Restoration Plan." No analysis of potential impacts that the proposed action may have on the Everglades Restoration plan was conducted. In one short line, the Draft GEIS has glossed over the effort to restore the Florida Everglades that will take decades and cost at least \$8 billion dollars. As pioneer conservationist Marjory Stoneman Douglas reminded us, "There are no other Everglades in the world." Yet, the NRC, seemingly oblivious to the federal government's commitment to the South Florida ecosystem, has refused to analyze any impact that its major federal action may have on the major federal Everglades restoration effort that did not exist when Turkey Point was licensed. This failure to address and analyze the impacts that the relicensing could have on the restoration effort does not meet the requirements of NEPA.

Turkey Point was licensed in the early 1970's, shortly after NEPA became our national charter for environmental protection. 40 CFR 1500.1(a). The original environmental review on Turkey Point was very limited and failed to consider substantial environmental issues. Even more important, changed circumstances and significant new information concerning the South Florida ecosystem in which Turkey Point is located, require the NRC to conduct a site specific SEIS prior to any major investment of resources into the relicensing assessment under 10 C.F.R. Part 54 of the relicensing process. Despite the fact, that these substantial environmental issues

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and significant information has been brought to the NRC's attention, the NRC refused to adequately analyze these issues in the requisite SEIS or the woefully inadequate Draft GEIS that they performed.

I hereby incorporate by reference all of the written comments that I have provided to the NRC by letters dated November 22, 2000 and December 21, 2000, and comments made at the two public meetings and prehearing conference that were held by the NRC in Homestead, Florida. I ask that these letters and comments, along with this letter, be made an official part of the record on the GEIS proceedings.

I. NRC RELICENSING PROCESS MUST COMPLY WITH NEPA

A. NEPA Requirements

The National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 et seq., "is our basic national charter for the protection of the environment. NEPA was enacted in 1969 to create and carry out a national policy designed to encourage productive and enjoyable harmony between man and his environment . . . [and] promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." 42 U.S.C.A. § 4321 (1994). NEPA aims to achieve these goals by focusing the attention of the federal government decision-makers and the public on the likely environmental consequences of a proposed federal action so that the environmental effects can be identified and understood before the action is implemented and potential negative environmental impacts can thus be avoided. Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 371 (1989). (Emphasis supplied.)

NEPA requires all federal agencies to prepare a detailed statement known as an Environmental Impact Statement (EIS) for any major federal action which will significantly affect the quality of the human environment. The EIS must detail i) the environmental impact of the proposed action; ii) any adverse environmental effects which cannot be avoided should the proposal be implemented; iii) alternatives to the proposed action; iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long term productivity; and (v) any irreparable and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. See, 42 U.S.C. 4332 (C); 40 C.F.R. 1501.4, 1502.

NEPA does not set out substantive environmental standards, but instead establishes "action-forcing" procedures that require agencies to take a "hard look" at environmental consequences. See Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 348, 104 L. Ed. 2d 351, 109 S. Ct. 1835 (1989); Kleppe v. Sierra Club, 427 U.S. 390, 409, 49 L. Ed. 2d 376, 96 S. Ct. 2718 (1976); ("NEPA does not mandate particular results, but simply provides the necessary process to ensure that federal agencies take a hard look at the environmental consequences of their actions.") Muckleshoot Indian Tribe v. United States Forest Serv., 177 F.3d 800, 814 (9th Cir. 1999).

NEPA's goals are to place upon agencies "the obligation to consider every significant aspect of the environmental impact of a proposed action," and to "ensure that the agency will *inform the public* that it has indeed considered environmental concerns in its decision-making process." Baltimore Gas, 462 U.S. at 97. "[T]he comprehensive "hard look" mandated by Congress and required by the statute must be timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made." Metcalf v. Daley, 214 F.3d 1135, 2000 WL 732909, (9th Cir. 2000). (Emphasis supplied).

NEPA assumes as inevitable an institutional bias within an agency proposing a project and erects the procedural requirements of § 102 to insure that "there is no way [the decision-maker] can fail to note the facts and understand the very serious arguments advanced by [a] plaintiff." Environmental Defense Fund v. Corps of Eng'rs of the U.S. Army, 470 F.2d 289, 295 (8th Cir. 1972). This comprehensive hard look mandated by Congress and required by the statute *must be timely*, and it must be taken *objectively and in good faith*. The statute is "primarily procedural," and courts have held that "agency action taken without observance of the procedure required by law will be set aside." Save the Yank, 840 F.2d at 717. (Emphasis supplied.)

Like all federal agencies, the NRC is required to implement the policies of NEPA in its decision making. See 42 U.S.C. § 4332; 40 C.F.R. § 1507.1. NEPA requires the NRC to prepare a detailed statement, known as an Environmental Impact Statement (EIS) prior to any "major federal action significantly affecting the quality of the human environment." 42 U.S.C. 4332(C). The NRC's failure to prepare a site-specific SEIS and take the requisite "hard look" necessary to evaluate the consequences of this major federal action prior to commencing the relicensing process under 10 C.F.R. Part 54 is designed to "rubber stamp" its predetermined decision and deprives me, and other similarly situated individuals, of my statutory rights under NEPA. Additionally, it raises the important question as to whether the relicensing of nuclear power plants beyond their design basis should continue, since Congress has never resolved the important public policy issue of whether it is in the national and public interest to run old nuclear power plants beyond their original license

B. NRC'S First-the-Verdict then the Trial Relicensing Process Fails to Comply with NEPA

Renewal of an operating license for the Turkey Point Nuclear Power plants is identified under 10 C.F.R. Part 51 of the Commission's regulations as a major federal action significantly affecting the quality of the human environment, within the meaning and provisions of the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4332(2)(C). As such, the NRC has a statutory obligation under NEPA to take certain procedural steps to assess the environmental damage that renewing operating licenses for up to 20 years beyond the 40 year term of the initial license could inflict.

The NRC avers to meet its NEPA requirements by improperly conducting a bifurcated process in which it purports to analyze environmental impacts in a generic process under 10 C.F.R. Part 51, while simultaneously conducting relicensing activities under 10 C.F.R. Part 54. The NRC has conducted a Generic Environmental Impact statement (GEIS), rather than a site-specific SEIS

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that should have reviewed the original Turkey Point Environmental Statement. In my opinion, under NEPA the NRC was required to prepare, publish, and seek public comment on a site-specific SEIS on Turkey Point prior to commencing other costly activities in the relicensing process. It appears that the process conducted by the NRC was an attempt to evade any meaningful review of its actions under NEPA by streamlining the process under 10 C.F.R. Part 51, so that it could conduct an environmental analysis concurrent with a relicensing process. The NRC NEPA process appears to be designed to "end run" NEPA and "rubber stamp" the relicensing decision, and does not allow a meaningful choice among alternatives.

The NRC's Draft GEIS process, which was conducted concurrent with the relicensing process, fails to meet NEPA requirements that an environmental impact assessment must be "prepared early by such an agency...so that it can serve practically as an important contribution to the decision-making process and will not be used to rationalize or justify decisions already made." 40 C.F.R. § 1502.5. Finally, it continues to be my contention that this so-called "relicensing" proceeding should be treated as though it is a new request for an initial construction permit and operating license and that the range of alternatives, or their analysis, should not be limited.

Section 1502.2 states that, "agencies shall not commit resources prejudicing selection of alternatives before making a final decision (1506.1)." 40 C.F.R. 1502.2(f). The Commission's conducting of the relicensing review under 10 C.F.R. Part 54, while at the same time averring to conduct an objective NEPA process under 10 C.F.R. Part 51, raises a serious question. Having already begun to invest substantial resources in the relicensing process, can the NRC be trusted to have taken the objective "hard look" at alternatives that is required by NEPA? Or will the Commission's EIS process, in the words of one judge in another NEPA case, "be a classic Wonderland case of first-the-verdict, then the trial? See, Metcalf v Daley, 214 F.3d(9th Cir. 2000). It is my contention that the Draft GEIS is fatally defective and does not meet the requirements of the Act, because the Commission's evaluation of the environmental impact of the relicensing proposal has been tainted by the process.

C. Site-specific SEIS on Turkey Point Should Have Been Conducted Before 10 C.F.R. Part 54 Relicensing Activities Were Undertaken

NEPA requires an agency to prepare a supplemental EIS (SEIS) if "there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed actions or its impacts." 40 C.F.R. 1502.9(c)(1). It is my contention that, as part of this process, the NRC should have conducted a site-specific Supplemental Environmental Impact Statement (SEIS), that should have included a review of the original Environmental Statement that was conducted on Turkey Point, before irretrievably committing resources on relicensing activities under 10 C.F.R. Part 54. The original EIS on Turkey Point, that was issued only a short time after NEPA was passed in 1969, does not address "substantial environmental issues," such as the proposed project's impact on the 7.8 billion dollar Everglades restoration effort, the largest environmental repair job in human history. The Licensee's current Environmental Report does not even discuss the proposed action's impact on this important Congressionally authorized project and the Draft GEIS fails to adequately analyze any adverse impacts on the project that may occur.

Government support for Everglades restoration, and the clearly defined federal interest in the protection of Biscayne National Park, Everglades National Park, the Big Cypress National Preserve, and Miccosukee Indian Reservation, along with the endangered and threatened species that inhabit these lands, changes the likely environmental harms by a "considerable magnitude" and could significantly alter the costs and benefits of the proposed project. The Comprehensive Everglades Restoration Plan (CERP) passed by Congress in WRDA 2000 discussed the environmental importance of the area surrounding the Homestead Airbase located in the vicinity of Turkey Point. In authorizing the restoration plan, Congress demonstrated the government's commitment to protection of the fragile environment in this area, including Everglades National Park located fifteen miles west of Turkey Point and Biscayne National Park located two miles from Turkey Point.

This significant new information, and the clear Congressional intent concerning the protection of the Everglades ecosystem, seriously alters the environmental picture and required that a site-specific SEIS on the impact that the proposed project may have on the human environment around Turkey Point nuclear power plant be conducted. This was not done. In fact, the Draft GEIS contains only a scant mention of the restoration plan. Moreover, in its Order dated February 26, 2001, the Atomic Safety and Licensing Board (ASLB) made the incredible ruling at page 29-30 that, "By seeking to have the NRC and the Applicant specifically consider the environmental impacts of license renewal on the restoration project for the Everglades, the contention goes beyond the information the applicant needs to provide in its environmental report pursuant to 10 C.F.R. 31.530 and the issues the NRC must consider in preparing the draft and final SEIS..." The ASLB cited no federal case law or NEPA statutory authority to support their conclusion on this important environmental issue and, in fact, also concluded that they were not authorized to determine whether the Commission's license renewal regulations violate NEPA. (See Board Order at page 17.) Thus, in one fall swoop, the ASLB swept a very important environmental issue that should be analyzed in a site-specific SEIS under the proverbial rug.

Moreover, there were other issues not adequately addressed, or not addressed at all, in the original EIS on Turkey Point, the Licensee's Environmental Report, and even the Draft GEIS that raise questions about the agency's proposal to relicense a nuclear power plant in this area. These issues include, but are not limited to the following: the intense population growth and ability to evacuate in the case of a or hurricane; the siting of Turkey Point in a hurricane zone in light of Hurricane Andrew, the redevelopment of the Homestead Air Base site within five miles of the plant, the siting of a school two miles from the plant. NEPA also requires the consideration of "cumulative impacts" in assessing the proposed action, such as the impact that radioactive emissions from the plant may have had, and may continue to have, on wildlife and the human environment. These issues should have been addressed in an SEIS and were not addressed, or not adequately analyzed or discussed in the Draft GEIS that was conducted.

The NRC's Draft GEIS did not conduct a full and objective study of alternatives to the proposed action prior to an irretrievable investment of resources. NEPA requires not merely a

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detailed statement of alternatives but also presentation of environmental risks incidental to reasonable alternative courses of action...and they should not be limited to measures which a particular agency or official can adopt. "NRDC v. Morton, 458 F.2d (1972). The environmental risks for the continued operation of the Turkey Point reactors, including the significant environmental effects that may result from offsite radiological impacts from the fuel cycle and the storage of nuclear waste were not analyzed in the Draft GEIS on a site specific basis, which resulted in a skewed analysis of alternatives that caused things like solar power to be rated more environmentally harmful than nuclear power. (See Draft GEIS at 9-7 and 8-55.) Clearly, a fair and objective analysis, which was not the case in the Draft GEIS, would have identified alternatives that are more environmentally friendly than the continued operation of this aged nuclear power plant located in one of the most environmentally sensitive areas in the world.

II. DRAFT GEIS IMPROPERLY NARROWED THE SCOPE UNDER THE ESA

Over 64 threatened and endangered species inhabit the South Florida Ecosystem, more than any state except California. The proposed action could adversely impact many of these species and subspecies. The NEPA process requires compliance with the Endangered Species Act (ESA), 16, U.S.C. 1531 et seq. The ESA dictates that federal agencies shall "utilize their authorities in furtherance of the purposes of the ESA...by carrying out programs for the conservation of endangered and threatened species listed." 16 U.S.C. 1536 (a). In particular, all federal agencies that plan, undertake, or authorize actions that "may affect" listed species or critical habitat must consult with the U.S. Fish and Wildlife Service, or other relevant agency, to insure that any action authorized, funded, or carried out by such any agency...is not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of habitat of such species..." 16 U.S.C. 1536 (a) (2).

The ultimate responsibility for Section 7 obligations remains with the federal action agency. The NRC did not properly define the scope for interagency section 7 consultation for the project. The NRC failed to ask the FWS to study the impact that offsite consequences from a radiological accident could have on at least a fifty mile radius of the plant; and instead allowed the review to be limited to the area directly surrounding the plant. There are a myriad of threatened and endangered species that inhabit this vast ecosystem, and that could be adversely affected by the proposed action. Also, due to the environmental importance of this area and the vast ecosystem restoration effort being undertaken here, I asked the NRC to request that the Fish and Wildlife Service, Everglades National Park, Biscayne National Park, the Environmental Protection Agency, and the Army Corps of Engineers become cooperating agencies on the Draft GEIS. The NRC, again ignoring the Everglades restoration plan, determined that there were no federal project activities that would make that desirable. See Draft GEIS at 2-53.

III. ISSUES THAT SHOULD BE SUBJECT THE SUBJECT OF A SITESPECIFIC SEIS AND THAT WERE NOT ADEQUATELY ADDRESSED IN THE DRAFT GEIS

The following issues should be analyzed in a site-specific SEIS process and were not

adequately addressed in the Draft GEIS:

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PRESSURE VESSEL INTEGRITY AND OTHER AGE-RELATED CONCERNS SHOULD HAVE BEEN ANALYZED IN A SITE SPECIFIC SEIS

An analysis of the aging reactor pressure vessels at Turkey Point and any impacts that such aging could have on the human environment were not analyzed in the Draft GEIS. Such an analysis was necessary, not only to ensure the public health and safety, but also for the cost benefit analysis of alternatives required by NEPA. The replacement cost of the reactor pressure vessels at Turkey Point could be prohibitive and annealing would create further environmental issues that should have been addressed. It is my understanding that no nuclear power plant has ever replaced its vessel.

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Additionally, the Draft GEIS did not analyze in a site specific fashion whether the age-related degradation of multiple components at Turkey Point could increase the chance that several components will fail simultaneously, thereby decreasing the safety margin of the plant and increasing the probability of an age-related accident and resultant radiological emergency that would have an extremely adverse impact on the human environment.

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THE DRAFT GEIS DID NOT ANALYZE WHETHER HURRICANES AND AGING EQUIPMENT COULD INCREASE THE RISK, PROBABILITY, AND MAGNITUDE OF A RADIOLOGICAL ACCIDENT WITH ITS ASSOCIATED ENVIRONMENTAL IMPACTS

The fact that the Turkey Point reactors are located in a hurricane region presents "special circumstances" in that the radiological threat from such an accident would be potentially greater than for another plant because of the inability to evacuate. In the case of a maximum hurricane, it is essential to ensure that critical components do not lose the ability to perform their intended safety function. Age related stress, corrosion and metal fatigue of both safety related and non-safety related equipment could make Turkey Point more susceptible to hurricane induced damage and make the risk, probability, and magnitude of a radiological accident more severe than other plants.

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It is my contention that the operation of the aged Turkey Point beyond its original license could increase the risk that a hurricane could cause an age-related accident and radiological emergency and complicate emergency response, thereby making an accident more likely and the results more catastrophic. Turkey Point is located in an area of high hurricane activity. In 1992, a direct hit by Hurricane Andrew caused extensive damage to the plant and the surrounding area was unable to evacuate if it had become necessary. Hurricanes are "frequently occurring natural phenomena" in our area that has a long hurricane season, thus accidents that could be caused by them, or occur contemporaneously with them, are not remote or highly speculative. Neither is the already proven possibility that such an event could disrupt offsite emergency response,

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thereby causing potentially serious consequences to public health and safety. Thus, impacts of hurricanes on the proposed project should have been analyzed, but they were not among the external phenomena that were analyzed in either the Draft GEIS or NUREG-1437. See Draft GEIS at 4-43 and NUREG-1437.

DRAFT GEIS DID NOT ADEQUATELY ANALYZE POTENTIAL IMPACTS OF THE PROPOSED ACTION ON THE GROWING SOUTH FLORIDA POPULATION

The South Florida population, including the Miami Area, has increased dramatically since Turkey Point was built. According to the Licensee's application, there is a high population of 2,572,326 people presently living within 50 miles of the Turkey Point plants. According to a chart entitled "Regional Population Distribution Year 2025," there will be 3,932,697 people living in a fifty mile radius of the plant during the license renewal period. This figure appears to be much lower than other figures that have been cited for estimated population growth in South Florida. Additionally, the current proposal to rebuild the Homestead Air Base site would greatly increase the population in the vicinity of the plant and could stress the evacuation capability of the surrounding community. The Draft GEIS did not adequately analyze the impacts that the proposed action may have on the rapidly growing population in the South Florida area.

The Generic Environmental Impact Statement for License Renewal of Nuclear Plants, NUREG 1437, Vol. 1, Page 5-11 states that as "the population around the plant increases, the potential risk and the increase in risk must be specifically examined. The NRC should have adequately analyzed whether the population in the rapidly growing South Florida area that is in the path of the highest frequency wind direction could safely evacuate in the event of a nuclear accident during the extended twenty year operation before relicensing this plant as required by 10 C.F.R. 50.4(a)(1). Such an analysis should include an accident analysis in which a hurricane (an external event) effectively eliminates or prolongs emergency response. According to NUREG-1437, Volume 1, page 5-17, success of evacuation depends on the warning time available and the time it takes to carry out the evacuation. The Draft GEIS did not adequately analyze this site-specific issue and did not address evacuation in a hurricane at all.

Moreover, the NRC is aware that Turkey Point is a coastal/ocean plant with shoreline, aquatic and drinking water pathways, and that contaminants from an accident would be deposited on an open body of water that could increase the dose to the population after the accident. According to NUREG-0769, Addendum 1; NUREG-0440, interdiction has the potential to reduce the dose by factors of from 2 to 10. Interdiction, which according to NUREG-1437, page 5-63, could consist of "preventing use of the water or making contaminated food difficult to obtain" may be difficult at this site on Biscayne Bay. NUREG-1437 page 5-94 states that ocean and estuarine sites would be the hardest to effect interdiction because of the food pathway." The Draft GEIS did not adequately address this coastal/ocean plant issue, nor the potential impacts that the proposed action that the permeable Biscayne Aquifer is an EPA designated sole source of drinking water for millions of people in South Florida.

The Draft GEIS on Turkey Point should also analyze whether the dose from an accident

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at Turkey Point could exceed those in Section 5 of NUREG 1437, Volume 1 in a site-specific GEIS. For instance, Section 5.3.3.4.5 entitled "Ocean Sites" says that Seabrook has the "potential for producing a larger maximum individual dose than that of the LPOS generic ocean site" because of the high shoreline user rates and large annual seafood catch. It further states that "the uninterdicted total population dose estimate for Seabrook is 6 times that of the LPOS generic ocean site. Page 5-83 of NUREG 1437 says that based on certain site specific assumptions, "it can be concluded that Seabrook represents the largest uninterdicted population dose at ocean sites other than Turkey Point." It does not appear that Turkey Point was part of the "Current ocean site severe liquid pathway analyses compared with Liquid Pathway Generic Study (LPOS) results" contained in Table 5.24 and, thus, these issues should have been analyzed in the Draft GEIS supplement or in a site-specific GEIS. Turkey Point does appear in Table 5.25 of NUREG-1437 entitled, "Earlier ocean sites without severe accident liquid analyses compared to Seabrook." This table identifies the location and groundwater pathway for Turkey Point as permeable limestone to a barge canal and the Atlantic Ocean. Indeed, this would also contradict the statement on page 4-8 in the Draft GEIS that the cooling canal system at Turkey Point, which is dug into porous limestone rock, is a closed system that does not discharge water to Biscayne Bay. The failure to recognize that water does migrate to Biscayne Bay caused the Draft EIS to improperly narrow the scope of its analysis on fish and shellfish only to the cooling canal system itself which would skew the analysis of environmental impacts. Id at 4-8.

Additionally, page 5-95 of NUREG-1437 states that "the Seabrook analysis provides a larger groundwater population dose than all but Turkey Point," but concludes that "the population dose from Turkey Point at MYR would not be expected to exceed Seabrook." NEPA requires that the NRC take a "hard look" at this unsupported conclusion by analyzing it in a site-specific GEIS and/or the Draft GEIS. It is unclear to me why Turkey Point, a coastal plant subject to hurricanes, was not included in the current severe accident liquid pathway analyses. Especially since it appears that including it may have altered the generic conclusions in NUREG-1437, Volume 1, concerning radiation exposure risk in the event of a severe reactor accident in which radioactive contaminants are released into the atmosphere and deposited on large bodies of water. I could find no adequate analysis in the Draft GEIS of the environmental impacts of a severe accident at Turkey Point on the aquatic food, shoreline, swimming, air, and surface and groundwater pathways.

DRAFT GEIS DID NOT ADEQUATELY ANALYZE THE ENVIRONMENTAL JUSTICE IMPACTS OF THE PROPOSED ACTION ON THE MICCOSUKEE TRIBE AND OTHERS

Section 4.4.6 of the Draft GEIS does not adequately analyze the environmental justice impacts of the proposed action. For instance, it does not address the significant environmental and cultural impacts that could be caused to the Miccosukee Tribe of Indians who live in the Florida Everglades. A radiological accident at Turkey Point has the potential to adversely impact the Miccosukee Tribe's culture and way of life, which depends on a healthy Everglades ecosystem. Because it fails to address the Miccosukee Tribe and other Native Americans, it incorrectly concludes that "no unusual resource dependencies or practices, such as subsistence

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agriculture, hunting or fishing through which the populations could be disproportionately high and adversely affected." It is clear that the Tribe's centuries old culture and way of life could be adversely impacted by the proposed action.

Additionally, there is no analysis of the minority populations that live around the plant's dependence on fishing and agriculture for food through which they could be adversely affected by the proposed action. These issues must be analyzed before the NRC can make a conclusion as to the level of impact from an environmental justice perspective.

DRAFT GEIS PROCESS FAILS TO ADEQUATELY ANALYZE THE PROPOSED ACTION'S NUCLEAR WASTE AND RADIOACTIVE BY PRODUCTS THAT COULD ADVERSELY IMPACT THE HUMAN ENVIRONMENT

Nuclear Waste:

According to an FPL response to a Sierra Club Miami Group member, there are presently about 1700 spent fuel assemblies being stored at Turkey Point, and they will run out of space for spent fuel in 2010 for Unit 3 and 2011 for Unit 4. According to the Licensee's application, the license for Unit 3 will expire on July 19, 2012 and the Unit 4 license on April 10, 2013. This shows that the Licensee barely has enough room to store the high-level wastes created from the original forty year operation of these plants, let alone the wastes from an additional twenty years operation being contemplated by the proposed action. According to this same response, Barnwell reportedly could be closed to low-level waste from FPL in the next few years.

The proposed action which would increase both the amount and toxicity of the high-level and low-level nuclear waste that will be created by at least half and will exceed the plant's original storage capacity for the high-level waste that must be isolated from the environment for at least ten of thousand of years. Wherever these wastes are stored will have a profound long term affect on the environment. The fact that after over forty years of nuclear power operation, the government still has not found a place to safely and permanently dispose of nuclear waste, means that, in all likelihood, the high-level waste will remain stored permanently on site at Turkey Point. And, if the Licensee is no longer able to send low-level waste to Barnwell, and another site is not found, low-level waste could also be stored on site. The fact that this is an area of high hurricane frequency could increase the risk and probability that nuclear wastes stored on site could contaminate the human environment and would increase the consequences if they did.

As was stated in the above discussion of hurricanes, the Turkey Point site presents special circumstances in that these spent fuel rods being stored on site, and not in the reactor containment building, could be distributed to the environment by a hurricane and age related accident that disrupts emergency response. Such an accident could cause severe and irreversible contamination of the surrounding environment and disrupt emergency response. The Licensee's Turkey Point site is probably the most unsafe site to store nuclear wastes in the country; and the NRC should have analyzed the impact that the relicensing of this plant will have on the South

Florida environment as it pertains to both the high level and low level nuclear waste that will be created. The special circumstances that occur at Turkey Point are far too important to be dismissed generically and should have been addressed in a site-specific SEIS and even the Draft GEIS that was conducted.

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Draft GEIS Did Not Adequately Analyze the Cumulative Impacts of Radiation in the Surrounding Environment:

The Draft GEIS did not adequately analyze and foreclose the impact that the current operation of Turkey Point is having on the cooling canals and the aquatic and human environment surrounding the plant and assess the cumulative impacts of past, present and future operations as is required by NEPA. Relicensing of the Turkey Point reactors will mean that adverse impacts to the human environment (if occurring) will continue for an additional twenty years beyond the current license period. The impacts that the accumulation and biological magnification of radiation may be having on plant, animal and marine life and the immune system, as well as human health, and the potential cumulative impacts that may occur during the twenty years extended operation must be analyzed under NEPA.

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The impact of radionuclides and any bioaccumulation or biomagnification that may be occurring in the food chain, marine life, plant, and humans from plant emissions and the coastal disposition and dispersion should have been analyzed in the Draft GEIS. This analysis should have included research on any build-up of strontium-90 and cesium-137 in the surrounding environment, including Biscayne Bay. The sediments of the Turkey Point cooling canals should have also been analyzed for any build-up of tritium and other fission products. The potential radiation exposure through the sand, soil, dust, air, food chain, and marine life may increase as the plant ages and its life is extended by the relicensing. Analysis of any current impact that may exist, as well as the cumulative impacts that could result from the extended operation, were not adequately analyzed on a site specific basis in the Draft GEIS.

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THE DRAFT GEIS DID NOT ADEQUATELY ANALYZE WHETHER THE PROPOSED RELICENSING POSES UNIQUE THREATS THAT MAY BE INCOMPATIBLE WITH, THE RESTORATION OF THE EVERGLADES AND SOUTH FLORIDA ECOSYSTEM

The power that we get from Turkey Point can easily be replaced by more environmentally benign sources of energy that do not contain the uncertain risks associated with the operation of these nuclear reactors beyond their original lives, and longer than any nuclear power plants have ever operated in this country. It is my contention that the NRC's Draft GEIS process failed to adequately analyze the impacts of this major federal action on the fragile South Florida environment, because the NRC failed to take the "hard look" required by NEPA. "General statements about "possible" effects and "some risk" do not constitute a "hard look" absent justification regarding why more definitive information could not be provided." Neighbors of Cuddy Mountain v. United States Forest Service, 137 F.3d 1372,1380 (9th Cir. 1998.)

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In closing, it is my contention that the NRC's Draft GEIS does not support the premature

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conclusion that "the adverse impacts of continued operation are considered to be of SMALL significance." It appears to me that it is more a case of "No look = No harm." The people of South Florida, and the beautiful Everglades ecosystem where they live, deserve to know the potential environmental impacts that may be caused by the proposed relicensing action...environmental impacts that can only be known through legally sufficient NEPA process that takes the "hard look" required by NEPA. In my opinion, the NRC has not taken the requisite "hard look" at the Turkey Point relicensing process and should do so.

Sincerely,

Joette Lorion, *pro se*
13015 SW 90 Court
Miami, Florida 33176
(305) 281-0429
(305) 971-4832 or 279-5082 fax

13

TPD 65

Mark P. Oncavage
12200 SW 110th Avenue
Miami, FL 33176

January 31, 2001

Mr. George A. Mulley, Jr.
Office of the Inspector General
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Mr. Mulley:

I have a problem with the NRC. In Miami, Florida we have a contentious issue of the disposal of the former Homestead Air Force Base. I am a member of the Sierra Club and we oppose turning the former base into a commercial airport as it would degrade Biscayne National Park and Everglades National Park. I have contacted the NRC numerous times since the runway is located 4.9 miles from the Turkey Point Nuclear Plant and I feel there is a significant safety hazard.

The NRC wrote a "Safety Assessment", June 19, 2000, for the Final SEIS for the base disposal. I identified numerous problems before the assessment was written and after. I wrote a FOIA request asking for the formulae, data, assumptions, and line-by-line calculations that were used in reaching their conclusion. I believed the NRC wrongly used a DOE aircraft formula instead of their own Standard Review Plan, NUREG-0800. The twin 400 foot smokestacks were omitted from the calculations, the bird airstrike hazard was underestimated, and foreign general aviation as a crash prone category was completely ignored.

January 2002

Now comes the complication. After I wrote the FOIA request, 9/16/00, Turkey Point filed for license renewal and I petitioned for Leave to Intervene, 10/24/00. One of my proposed contentions deals with accidents at the spent fuel pits, including aircrashes. An Atomic Safety and Licensing Board has not yet ruled on my standing and contentions.

Here's the problem. The NRC Staff can't comply with my FOIA request because they never did the calculations. They took the data sent by the Air Force and sent it to the licensee asking them to do the calculations.

Apparently, the licensee never sent all the relevant information back to the NRC. This is contained in the attached letter from Kathryn M. Barber, Counsel for the NRC Staff. I am upset that I cannot get the necessary information that was used to calculate air crashes into Turkey Point.

1. Isn't there a NEPA requirement for the NRC, not the licensee, to provide a safety evaluation for an Final SEIS ?
2. How can the NRC ignore its own Standard Review Plan ?
3. How can the NRC ensure the public health and safety and approve airport development when it doesn't possess all the data and assumptions that were used in the calculations and cannot verify the licensee's conclusions ?
4. How can a citizen, concerned for his own safety, get information that's exclusively held by the licensee ?
5. Shouldn't the lead agency for base disposal, the Air Force, be told that there are major safety discrepancies with NRC methodology concerning the closeness of the proposed commercial airport to the nuclear plant ?

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6. If the licensee, which is a large landholder in the area, is the only entity with all the safety related information, how can the NRC be sure there is no conflict of interest ? Developing land near a new commercial airport could be an extremely lucrative enterprise.
7. Another conflict of interest may arise if the licensee thinks that a negative safety assessment would damage its chances of obtaining a license renewal.

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There may be criticism of my efforts due to the fact that President Clinton and USAF Secretary Peters have already decided that a commercial airport will not be developed at the Homestead site. The outcome is still uncertain. The major decisionmakers, President Clinton, USAF Secretary Peters, and even Interior Secretary Babbitt have been or will be replaced by a Republican administration. Also, there is a federal lawsuit by the airport developers challenging the decision. Lastly, President Bush is the brother of Florida Governor Bush. Neither has made a public statement on their plans for the base disposal.

Sincerely,

Mark P. Oncavage

enc: NRC letter
FOIA request
Sierra letter

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NUREG-1437, Supplement 5

Appendix A



OFFICE OF THE
GENERAL COUNSEL

Mr. Mark P. Oncavage
12200 SW 110th Ave.
Miami, FL 33176

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20542-0001

January 24, 2001

Dear Mr. Oncavage:

This letter is in reference to your November 14, 2000 correspondence directed to Mr. Lawrence J. Chandler, Office of the General Counsel, at the Nuclear Regulatory Commission. Your letter requested assistance in obtaining responses to your September 13, 2000 e-mail question sent to the NRC E-mail Question Service, and your September 16, 2000 Freedom of Information Act request directed to Carol Ann Reed, Freedom of Information Act Officer. The matter was referred to me in order that I could aid you in your inquiries. I apologize for the delay in responding.

In regard to your September 13, 2000 e-mail, it is my understanding that Robert Jasinski, Office of Public Affairs, responded to your question in an e-mail dated September 14, 2000. In your e-mail you ask if there are any commercial reactors in the U.S. that are within 10 miles of a commercial airport, and if so, which reactors, which airports, and what the distances between the two are. Mr. Jasinski stated in his response that the NRC does not have any report containing this type of information. The NRC's publication, "Information Digest 2000 Edition (NUREG 1350, Vol.12)," Appendix A, which can be accessed on the NRC web site at <http://www.nrc.gov/NRC/NUREGS/SR1350/V12/index.html> may assist you in determining the location of reactor facilities, but does not contain any information on airport locations.

With respect to your September 16, 2000 FOIA request, I believe Carol Ann Reed provided a final response to your request on October 19, 2000. You had requested the formulae, data, assumptions and line-by-line calculations that were used to compute the aircraft crash frequency found in the Safety Assessment concerning Turkey Point Units 3 and 4 and the disposal of Homestead Air Base. Ms. Reed states in her response that the calculation you refer to was performed by Florida Power & Light, and consequently, that the NRC does not possess the information requested. Ms. Reed does include in her response, however, 17 pages of handwritten notes and calculations made by Kazimieras M. Campe of the NRC in his review of the licensee's analyses in reaching the crash frequency. If you have not received a copy of this response, I would be happy to provide you with one or it can be located in ADAMS using Accession #ML003761990.

I hope this information proves helpful. Please let me know if I can be of any assistance in the future.

Sincerely,

Kathryn M. Barber
Counsel for NRC Staff

cc: Service List

TPD 66

For Immediate Release

Contact Frank Pitz
(954) 532-3200

FPitz76@hotmail.com

July 17, 2001

Upon the global environment and health we have a monster waiting to be unleashed. I am talking about 400 million metric tons of spent nuclear fuel festering like a boil upon the face of humanity. This beast poses a danger for a half-million years, and no one knows what to do with it, or how to contain it. It is certainly not "out of sight, out of mind" so we cannot ignore it. It is not something tucked away in the depths of a closet, so that we forget it. No, it is here, it is real, and it is extremely dangerous to humanity. In addition to the day to day adverse health effects posed by nuclear power, we also have this gargoyle hanging over our heads, waiting to be unleashed.

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You are here today to talk about relicensing a 29-year-old nuclear plant, a renewal that isn't even up for another nine years. When the current renewal is up for review in 2010, this plant will be 37-years old. Longevity in humans is admirable; longevity in nuclear power plants is hazardous. Add this increase in plant life span to the present day-to-day perils associated with radioactivity release from it and we have a ticking time-bomb right here in south Florida.

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Why the rush to relicense? The current operating permit does not expire for nine years, why can't we wait until then? There certainly is not a pressing need to go through this process at this time, unless of course it is political expediency. These aging reactors pose more of a threat to civilization than all of the supposed missiles that President Bush envisions while he lies sleeping in his bed. The tens of billions of dollars he would spend to build a missile defense system would best be spent on sustainable energy programs, which would wean us from fossil fuel consumption as well as the radioactive nightmare of nuclear power. Leave this license in place until its original expiration date, then come back to the people and talk about renewal. For the sake of political opportunism you would further endanger the health of residents of south Florida. No, to relicensing!

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VISION COUNCIL



43 North Krome Avenue
Homestead, FL 33030
305/247-7082
Fax 305/247-9976

Nuclear Regulatory Commission, Attn. Mr. Jim Wilson

July 17, 2001

Gentlemen:

On behalf of the Vision Council, we wish to register our support for the relicensing of the turkey Point Nuclear Power Plant.

The Vision Council is an economic development agency headquartered here in Homestead with a mission to encourage the expansion of existing businesses and to recruit appropriate new businesses to the local area. We face a number of obstacles in our efforts including remoteness from major markets and lack of a major technical base or raw materials.

One of the things we do have is adequate power. We are fortunate not to be facing rolling brownouts or wondering each day whether we will have lights and cooling. Many of us remember the weeks after Andrew when the sound of generators was a constant reminder of how much we had taken our normal power sources for granted.

In addition to providing needed power to our locale, the Turkey Point Nuclear Facility is an important economic engine in itself. The number of people employed and their wage base is unparalleled in our area. Mr. William Fruth, a well-known economic development planner has stated that the single best industry a community can have is a nuclear power facility, because of its generating capacity for other businesses, its non polluting power and its tremendous payroll impact.

Perhaps as important to a community such as ours is the fact that the plant's employees are our neighbors, our friends and important contributors to the life of our community. They are active in our little leagues, churches, civic and government organizations. FPL corporate at Turkey Point is also a responsible citizen. Just one example is the remarkable job they have done in protecting and increasing the population of the endangered American Crocodile.

You are aware that much of Europe has directed its present and future power needs to nuclear energy to relieve dependence on imported oil. We all should be aware of the proven safety record of the nuclear power industry and the safeguards and security required at such installations. Thousands upon thousands of South Florida residents are confident of the plant's safety, its management and security and they prove it every day, because they, like us, live here in close proximity to the plant. Thank you for your attention.

Sincerely,

Robert S. Anderson
Robert S. Anderson, Chairman

Luis Dilan
Luis Dilan, President

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NUREG-1437, Supplement 5

My name is Brian Thompson; I am the Business Manager for System Council U-4 of the International Brotherhood of Electrical Workers, representing eleven different Local Unions and over three thousand Union employees throughout the state on Florida Power and Light property.

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One of those Local Unions, Local 359, is located here in Dade County, which represents over three hundred of the Union Employees employed at the Turkey Point Nuclear Plant. Which include highly skilled and professional craft workers in the Operations, Maintenance, Electrical and Instrument and Control trades.

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I am here today to speak in favor of the twenty-year license renewal and continued operation of the Turkey Point Nuclear Facility.

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As Business Manager for the Union, three of my most important priorities are, the safety and well being of the employees and the public, training of our employees and the environment in which we all live.

On Florida Power and Light property we have what is known as Joint Safety Program. This is a program through Committees, that ensures both the Company and Union have an equal say to provide for the safety of the employees, safe plant operation, safety to the public and environmental protection.

I am proud to say that as Business Manager, I have actively participated on the Corporate Joint Safety Committee for the past eight years in the Nuclear Joint Safety Program. This Committee is responsible for setting and constantly reviewing safety rules, policies and procedures for which the plant employees must adhere to and which the plant must operate under.

As a result of our efforts and the true dedication to these rules, policies and procedures by the employees, the Turkey Point Nuclear Facility has been consistently recognized as being:

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- One of the safest and most reliable nuclear power plants in both the United States and in the World.
- The only nuclear power plant in the United States to receive three consecutive superior ratings from its regulator, the Nuclear Regulatory Commission, spanning the years of 1994 to 1999.
- Safety performance indicators consistently in the top percentile of Nuclear Plants throughout the United States

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- And the "Quest for Excellence" award from an independent assessor in 1995, 1998, and 2000 for excellence in Nuclear Plant performance.

In the area of training, both the Company and Union have developed and constantly oversee some of the most rigorous training programs within the Company for its employees.

Operators must undergo fourteen months of intense initial training to even qualify for their jobs and must re-qualify for their positions every six weeks throughout their careers in a one-week training course to ensure proper and safe plant operation.

Most of the skilled craft workers were trained through a four-year Apprentice Program in which they were taught their skills and technical ability and must undergo

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routine annual training to ensure outstanding performance skills are maintained to keep the plant reliable and well maintained.

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All employees are also trained on a regular basis for even the unlikely event of an emergency. Quarterly, the plant employees conduct drills to practice their emergency response readiness. They also conduct drills, which include representatives from Local, State and Federal agencies who coordinate activities for public safety, as well as regular Safety training each and every month.

Environmentally, the plant must meet very strict and stringent radiation safety standards designed to protect the employees and ensure the community health and safety. The Company consistently monitors the air and water quality at the plant and surrounding communities to ensure these standards are maintained.

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EIGHT

Over the past twenty-five years since the plant has been operational, I believe the Employees of the Turkey Point Nuclear Facility and the Company have established themselves as good stewards of our environment. They have clearly demonstrated their commitment of managing and achieving a careful balance between the environment and producing a very cost effective, clean, safe and reliable source of electricity is possible at all times.

For these reasons, and in closing, I am asking that the license renewal for the Turkey Point Nuclear Facility be approved so that we can keep this very valuable source of energy for the community well into the future.

Thank You

TPD 69

68-10

Dade W. Moeller
June 10, 2001
(8-18-00)

CIGARETTES AND RADIATION

Some 35 years ago, scientists at the Harvard School of Public Health discovered that tobacco contains relatively high concentrations of naturally occurring radioactive materials. Although this is common knowledge within a limited segment of the scientific community, few members of the public are aware of this fact. Even fewer people are aware of the relatively high radiation doses to a person who smokes and inhales these materials into his/her lungs.

From the standpoint of the exposure to the lungs, the principal radioactive material of concern is polonium-210 (²¹⁰Po). Although initially it was assumed that the ²¹⁰Po was taken up through the roots of the plant, it was later shown that it is deposited from the air, the source being radioactive materials in the soil.

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One might immediately ask, "How could this be so?" The process is as follows. Measurements show that the first top five feet of soil within each square mile of U.S. soil contain an average of about 30 tons of uranium. Although uranium is a solid, it decays through a chain of radionuclides (commonly called its "decay products"), one of which is radon. Since radon is a gas, it evolves from the soil into the air. Radon, in turn, decays into other radioactive materials, all of which are solid. Although the initial decay products of radon are short-lived - existing on average for less than an hour - these products soon decay into ²¹⁰Po, which has a half-life of about 140 days. Since one of the characteristics of all the airborne radon decay products is that they are electrically charged, as the wind blows them around they come into contact with, and adhere to, the large leaves of the tobacco plant. After the tobacco is cured and processed, these materials are incorporated into the cigarettes. When the smoker lights up, the radioactive products are volatilized and are inhaled into his/her lungs.

According to John B. Little, M.D., a leader in the studies at Harvard, he and his colleagues found that the inhaled polonium deposits preferentially in the bifurcations of the bronchial epithelia. These are exactly the locations where lung cancer originates among cigarette smokers. As the polonium-210 subsequently decays, it yields a substantial dose to these critical parts of the lungs. On the basis of their work, the Harvard scientists (Little et al., 1965) concluded that "polonium-210 may be an important factor in the initiation of bronchial carcinoma in man." (Little et al., 1965).

During the years after the initial Harvard studies, more detailed analyses of the impacts of polonium-210 in smokers have been performed by the National Council on Radiation Protection and Measurements (NCRP, 1987). On the basis of their calculations, the NCRP estimated that the *annual* dose to the bronchial epithelium in a person who smokes 1.5 packs of cigarettes per day is about 16,000 millirem. The significance of this estimate can be demonstrated by the following comparisons.

1. The *daily* dose to these critical segments of the lungs of the assumed smoker is more than he/she would have received from four chest x-ray examinations. The *annual* dose to these segments is equivalent to that from about 1,500 chest x-ray examinations.

2. The annual dose is in excess of 1,000 times the limit permitted by the U.S. Nuclear Regulatory Commission to the lungs of a member of the public who resides just outside the fence of a commercial nuclear power plant.

3. On an effective (whole body equivalent) dose basis, the *annual* dose to the 1.5 packs per day smoker is 20 times that received by the average member of the U.S. public from all other man-made radiation sources combined! These include medical applications of x rays and radiopharmaceuticals, radioactive materials released from commercial nuclear power plants, exposures accompanying the shipment and disposal of radioactive wastes, fallout from past atmospheric nuclear weapons tests, and exposures from radioactive consumer products (such as luminous watches, building materials, airport luggage inspection systems, and uranium glazed ceramics).

4. The *annual* dose to a 1.5 packs per day smoker is over 10 times the total annual limit recommended by the U.S. Environmental Protection Agency, the U.S. Nuclear Regulatory Commission, and the U.S. Department of Energy, for a member of the public. It is over 40 times the annual limit recommended by these agencies for a single source of radiation exposure and it is about three times the average annual dose currently being received by medical x-ray personnel and workers at commercial nuclear power plants.

Additional perspective is provided by the following information. As part of its work in developing Report No. 95 (see reference below), the NCRP estimated the total annual dose to average members of the U.S. population from all consumer products combined. Since the dose from ²¹⁰Po to cigarette smokers

was so overwhelming (and since this dose was largely limited to smokers), the NCRP decided to compute and present the total annual dose to the average member of the U.S. public from all consumer products for the non-smoker only. The average when computed on this basis was about 10 millirem (mrem) per year. The dose to the 1.5 packs per day smoker is more than 100 times this value.

References:

Little, John B., Radford, Edward P., McCombs, H. Louis, and Hunt, Vilma R., "Distribution of Polonium²¹⁰ in Pulmonary Tissues of Cigarette Smokers," *New England Journal of Medicine*, Vol. 273, pages 1343 - 1351 (December 16, 1965).

National Council on Radiation Protection and Measurements, "Radiation Exposure of the U.S. Population from Consumer Products and Miscellaneous Sources," Report No. 95, Bethesda, MD (December 30, 1987).

U.S. Nuclear Regulatory Commission, "Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low As Reasonably Achievable' for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents," Code of Federal Regulations, Title 10, Part 50, Appendix I, Washington, DC.

COMMENTS BY DADE W. MOELLER
Professor Emeritus, Harvard University

Introduction

This report is based on my review of the following reports:

1. The Radiation and Public Health Project, "Environmental Radiation from Nuclear Reactors and Increasing Children's Cancer in Southeastern Florida, A Special Report on the Florida Baby Tooth Study" (The so-called "Tooth Fairy" report), Miami, Florida (March 28, 2001).
2. Gould, J. M., Sternglass, E. J., Sherman, J. D., Brown, J., McDonnell, W., and Mangano, J. J., "Strontium-90 in Deciduous Teeth as a Factor in Early Childhood Cancer," *International Journal of Health Services*, Vol. 30, No. 3, pages 515-539 (2000).
3. U.S. Nuclear Regulatory Commission, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," Draft Report for Comment, Report NUREG-1437, Office of Nuclear Reactor Regulation, Washington, DC 20555-0001 (May, 2001).

The comments that follow are divided into five sections. First is a review of the procedures used by the authors in preparing the "Tooth Fairy" report (reference #1 above). It is simply not good science. Second is a summation of several of factual distortions Dr. Sternglass and his associates use to support their unfounded claims. Third is a summary of some of the statements by various scientific and professional organizations regarding the credibility of the studies that have been conducted by Dr. Sternglass and his associates over the past 35 years. The fourth section provides information on the health effects of strontium-90. The fifth and final section provides commentary and conclusions. In short, these conclusions are:

1. The U.S. Nuclear Regulatory Commission (U.S. NRC) has, in its draft Environmental Impact Statement (reference #3 above), not only rejected the allegations listed in the "Tooth Fairy" report but has also itemized a host of errors made by the authors in reaching their conclusions. The bottom line of the U.S. NRC is that the observed concentrations of strontium-90 in the samples of teeth are actually "lower than would be

expected from levels known to be in the soil from world-wide fallout from past atmospheric weapons tests." I concur.

2. The methods used over the past 35 years by Drs. Gould and Sternglass to support their claims do not conform to the principles of good science. It is little wonder therefore that their claims have been rejected by multitudes of scientists and public health officials.
3. Dr. Sternglass and his associates have displayed no apparent interest in the mass of scientific evidence that rejects their methods of research, their observations, and their conclusions.
4. They are guilty of carefully selecting only those data that they find will support their desired conclusions. When questioned, Dr. Sternglass invariably changes the subject or offers to provide "new data" which seldom, if ever, appear.
5. Their analytical methodologies and their conclusions are just plain wrong. No amount of tinkering or repetition will make them right. Dr. Sternglass and his associates consistently violate the basic principles of good science in pursuing their primary objective of shutting down all commercial nuclear power plants.

Principles of Good Science

The "Tooth Fairy" report, prepared by Drs. Gould and Sternglass and their associates, is replete with errors and misconceptions. This can be best demonstrated by comparing their approaches to those dictated by the "principles of good science." These principles can be identified and addressed through the following series of questions:

1. Is there a plausible biological/medical/scientific explanation for the cause-effect relationship being discussed? Unless there is such an explanation, the subject matter under discussion should be treated with skepticism.

Comment: In many cases, the alleged health effects that Dr. Sternglass is describing have never been shown to have a relationship to radiation exposures. Key examples are his claims that radiation is responsible for increases in prostate cancer; that it has "mutated the spirochete" responsible for Lyme disease; and that it is responsible for AIDS, "a newly mutated sexually transmitted disease." In the majority of cases, the dose rates from the sources that Dr. Gould and Sternglass have studied have never been shown to cause any detrimental health effects, whatsoever, much less the ones they allege.

2. Did the claimants consider all the data, or were they selective? And were all the data factored into their conclusions? In this regard, it is important to note that any credible scientific theory must prove to be consistent with all the data. When inconsistencies are found, the theory must be considered to be suspect and subject to revision, until such time as a theory is formulated that is consistent with the data.

Comment: Dr. Sternglass consistently and selectively uses only those data that support his claims. He also changes the facts, such as the direction in which the wind blows, to suit his purposes. He also is not reluctant to misquote his sources, if that is necessary to accomplish his goals.

3. Did the people conducting the analyses take time to evaluate the validity and reliability of the data they used? Oftentimes, unjustified claims are based on data generated by others. One of the primary duties of claimants is to confirm the accuracy and validity of the data they are using.

Comment: Not only is Dr. Sternglass careless in the selection of his data, as noted by the observations of the EPA staff (see below), he often misinterprets the data that he uses. He also does not provide an accurate estimate of the errors and uncertainties in the data he uses, a primary example being the concentrations of strontium-90 in the teeth that have been analyzed in the "Tooth Fairy" project. Additional commentary on this matter is presented in the section that follows.

4. Did the investigators evaluate all possible explanations for the observations that they reported? If there were other possible causes, were they evaluated one by one and removed from consideration, only if justified.

Comment: The failure of Dr. Sternglass to confirm that the strontium-90 in the samples of teeth he had analyzed came from nuclear power plants is a good example of his neglect of this basic principle of good science.

5. Did the investigators seek to reach convergence on the subject? That is, did they attempt to determine if a detailed evaluation of the direct, indirect, and anecdotal evidence would enable them to reach a scientifically valid conclusion? In this same regard, were the claimants careful to identify inconsistencies in the data and did they attempt to explain the reasons and/or revise their conclusions to make them more consistent with the data?

Comment: In no case in the examples cited, did Dr. Sternglass and his associates apply other methods of analysis to determine if they led to the same conclusion. Other items that he might have analyzed include urine, feces, human bones (from accident victims), and hair.

6. Finally, were the statements and conclusions subjected to independent review, evaluation and confirmation? This is mandatory in any type of scientific endeavor. Only through such a process can readers be assured that the conclusions in a report are acceptable and are based on approaches that have been approved by national and international advisory groups.

Comment: Dr. Sternglass seldom, if ever, subjects his findings to peer review. When knowledgeable people review his reports, he summarily rejects their comments. Carrying this to an extreme, he even rejects the comments of the authors of the reports he is citing. In the few cases in which he has published an article in a peer-reviewed journal, he fails to mention the devastating reviews of these articles that have appeared in subsequent issues of that same journal. Not only does he not subject his own reports to peer review, he seldom uses peer-reviewed publications as sources of information for his studies. Rather, he commonly seeks to corroborate his findings by quoting from his own previous reports, even when they have been shown not to be correct. He works alone and outside the mainstream of science because his work is not credible.

Misleading Information

In seeking to support his allegations, Dr. Sternglass and his associates distort the facts and leave out important information that would invalidate their conclusions. *The Enemy Within*, which he co-authored with Dr. Jay Gould, as well as in the "Tooth Fairy" report, are good examples of what can only be described as "junk science."

The Enemy Within

Referring to the 1979 accident at the TMI nuclear plant, they stated that mortality data for neighboring population groups "easily demonstrate" that their health was damaged by the accompanying radionuclide releases. Compounding this error, they state that the case is "so strong" that the defendant (the operators of TMI) was reluctant to let it come to trial. The case never came to trial because a

federal judge, in a pretrial hearing, dismissed the lawsuits of the plaintiffs due to the "paucity of proof alleged in support" of their case.

At another point in the book they cite "a confidential memo circulated on January 5, 1995, by the National Cancer Institute" as confirming their findings that "women living close to reactors are significantly at greater risk of dying of breast cancer than those living farther away." Having cited such supporting evidence, one would have assumed that they would have included a copy of the memorandum in their book. The probable reason that they did not is that the memorandum did not confirm their findings. In fact, the memorandum states that it is the conclusion of epidemiologists at the National Cancer Institute (NCI) that the "Gould-Sternglass study has little epidemiological credibility," and that re-analyses of the data by the NCI staff "in no way support the conclusions of Gould and Sternglass."

The Tooth Fairy Report

In this report, Drs. Gould and Sternglass state that they need at least 5,000 teeth from all parts of the U.S. Presumably, this is their estimate of the number required to confirm their findings. Based on the reported concentrations of strontium-90 in the samples of teeth they analyzed, and the associated radiation doses that would result, it would require careful observations of several million people over a period of at least 100 years to confirm a significant increase in mortality.

Although Drs. Sternglass and Gould provide an estimate of the concentrations of strontium-90 in the teeth of children living near the Turkey Point Nuclear Plant, they never provide even a hint of the radiation dose that such concentrations would produce either in the teeth or elsewhere within the body. One of the basic tenets of toxicology is that the "dose makes the poison." Without a dose, there can be no effects. In reality, the annual doses that would result from the reported concentrations of strontium-90 in the teeth are less than those one would receive from cosmic radiation during a cross-country flight in a commercial airliner.

Although in the paper published in the International Journal of Health Services (reference #2 above), Drs. Sternglass and Gould provide estimates of the uncertainties in the concentrations of strontium-90 in the teeth they had analyzed, no such estimates are provided in the "Tooth Fairy" report. Even in the case of the International Journal article, where they did provide such estimates,

their method of quantifying them is wrong. In fact, essentially all of their lower range data are suspect because the numbers reported are less than the analytical capabilities of the counting equipment used in the measurements.

Statements by Scientific and Professional Organizations

Readers of the above comments need not take my word as to the lack of credibility of the statements by Drs. Gould and Sternglass. The literature is filled with statements by well-respected and highly-qualified scientists, government agencies, and professional organizations, all of whom have refuted the claims of Drs. Gould and Sternglass. Several examples are listed below.

American Academy of Pediatrics -- 1970

Beginning as early as the mid-1960s, Dr. Sternglass issued reports in which he claimed that exposures to low-level radiation had led to increased infant mortality and a host of other health effects. One of the first professional societies to refute his claims was the American Academy of Pediatrics which, in 1970, stated that Dr. Sternglass' conclusions were "completely unfounded and unsubstantiated." The Academy concluded that Dr. Sternglass "selected data to prepare his hypothesis without considering the far more extensive data that do not support it" and that his assumptions were "shown to be erroneous."

Michigan Department of Public Health -- 1971

In 1971, the Michigan Department of Public Health evaluated claims by Dr. Sternglass that there was a connection between increases in infant mortality in areas near the Big Rock Point Nuclear Plant. The Department concluded that Sternglass's assertions were not "based on scientific tests, but rather on a statistical data evaluation of infant mortality rates and reactor plant emissions, selecting and rejecting figures to arrive at an apparently biased conclusion..." In short, the Department rejected Sternglass's contention that there was a connection between infant mortality and radioactive releases from the Big Rock Point Plant.

Health Physics Society -- 1971

At the annual meeting of the Health Physics Society, held in New York City in July, 1971, Dr. Sternglass presented a paper in which he summarized the

charges he had developed over the past four years. Included was his assertion, once again, that he had detected that activities, such as the operation of nuclear power plants, had resulted in an increase in infant mortality. Because of their concern for the multitude of errors in his paper, the past-Presidents of the Society took a most unusual step. They prepared a joint statement that was promptly shared with the media. Highlights were as follows:

"On the third such occasion since 1968, Dr. Ernest J. Sternglass has, at an annual meeting of the Health Physics Society, presented a paper in which he associates an increase in infant mortality with low levels of radiation exposure. The material contained in Dr. Sternglass' paper has also been presented publicly at other occasions in various parts of the country. His allegations, made in several forms, have in each instance been analyzed by scientists, physicians, and bio-statisticians in the Federal government, in individual States that have been involved in his reports, and by qualified scientists in other countries.

"Without exception, these agencies and scientists have concluded that Dr. Sternglass' arguments are not substantiated by the data he presents. The United States Public Health Service, the Environmental Protection Agency, the states of New York, Pennsylvania, Michigan and Illinois have issued formal reports in rebuttal of Dr. Sternglass' arguments. We, the President and Past Presidents of the Health Physics Society, do not agree with the claim of Dr. Sternglass that he has shown that radiation exposure from nuclear power operations has resulted in an increase in infant mortality."

U.S. Environmental Protection Agency -- 1978

In 1977, Dr. Sternglass claimed that operation of the Connecticut Yankee and Millstone Nuclear Plants had contributed to significant levels of strontium-90 and cesium-137 in milk in nearby areas. In response to a request from a member of Congress, the U.S. Environmental Protection Agency (EPA) conducted a detailed review of Dr. Sternglass's claims and concluded that the data did not support Dr. Sternglass's contentions and that his assertions contained incorrect assumptions and misinterpretations. In fact, analyses proved that the strontium-90 and cesium-137 were from weapons testing fallout, not from the nuclear plants.

National Academy of Sciences -- National Research Council -- 1980

During the preparation of its third report, the Committee on the Biological Effects of Ionizing Radiation, provided an opportunity for Dr. Sternglass to share his thoughts on the health effects of low-level radiation on humans. In the course of his presentation, Dr. Sternglass presented data on fallout in the U.S. from nuclear weapons tested by China in 1978 and concluded that this had led to an increase in infant mortality in the eastern-seaboard states from Delaware to New England shortly after these events occurred. On the basis of his presentation, and a review of the materials provided, the Committee concluded that "the alleged association did not fit the time course for radioisotope movement into the cow-milk food chain; nor was there clear evidence of a universally applicable change in infant-mortality rates." The Committee went on to state that they "did not believe that the allegation was substantiated."

National Cancer Institute -- 1990

The claims of Dr. Sternglass and his associates were also inconsistent with the findings of a study conducted by the National Cancer Institute (NCI) in which a detailed examination was conducted of longer term cancer mortality rates in counties throughout the U.S. in which nuclear reactors have operated. The NCI "found no systematic difference in rates of breast cancer nor any other cancer in these counties compared to similar counties located farther away from the plants."

Minnesota Department of Public Health, 1995

Continuing his crusade, in June, 1994, Dr. Sternglass claimed that radionuclide releases from the Prairie Island Nuclear Generating Plant had led to a 45% to 48% increases in breast mortality rates in the seven nearby "nuclear" counties. On the basis of a review of the Sternglass report, the staff of the Minnesota Department of Public Health concluded that "Breast cancer mortality trends over the period 1950-1992 in the ten counties near nuclear power plants show no discernible difference from statewide trends ... Furthermore, no difference in mortality trends or recent incidence rates could be found for several other cancers sensitive to exposures to ionizing radiation."

The Minnesota Department of Public Health also observed that Dr. Sternglass and his associates were continuing to distort the facts to reach their desired conclusions. In their report, for example, they indicated that

counties selected for study were those "within roughly 40 or 50 miles of each reactor, giving preference where possible to contiguous downwind counties lying to the north and northeast of each reactor." An examination of the map of the counties included in their analyses, however, revealed that neither the "adjacent" criterion nor the "50-mile" radius criterion was consistently applied in selecting the counties for study relative to the two nuclear plants in Minnesota.

Health Effects of Strontium-90

In Report 110 issued in 1991, the National Council on Radiation Protection and Measurements provided the following information on the health effects of strontium-90.

No statistically significant excess of biological effects due to strontium-90 exposures at levels characteristic of world-wide fallout has been demonstrated.

Most of the damage from isolated ionizations appears to be readily repaired if sufficient time is available before additional radiation events are received.

The incidence of bone carcinoma and other malignant diseases at low doses and dose rates in animals has been remarkably low. Such effects have not been seen in excess of the normal incidence except at dose levels in the thousands of rem. (Note: This is equivalent to almost a million times the annual doses to the teeth that were analyzed as part of the "Tooth Fairy" project.)

Commentary and Conclusions

The U.S. Nuclear Regulatory Commission (U.S. NRC) has concluded in the draft Environmental Impact Statement (reference #3 above) that the environmental impacts of offsite radioactive releases from nuclear plants are small. Equally important, the U.S. NRC has rejected the allegations of proponents of the "Tooth Fairy" project that increased levels of strontium-90 emitted from nuclear plants are causing adverse health effects. As noted by the information presented above, I fully concur with these conclusions.

The claims that have been made for the past 35 years by Drs. Gould and Sternglass have been studied and refuted by statisticians, radiation

epidemiologists, and public health officials. Despite the long-standing consistency and uniformity of the scientific community's views, Dr. Sternglass and his associates have displayed no apparent interest in the mass of scientific evidence that rejects their methods of research, their observations, and their conclusions. Instead, they continue to carefully select only those data that they find will support their desired conclusions. When questioned, Dr. Sternglass invariably changes the subject or offers to provide "new data," which seldom, if ever, appear.

As a result, Dr. Sternglass and the tooth fairy proponents continue to stand alone and with good reason. Their methods and conclusions are just plain wrong. No amount of tinkering or repelition will make them right. Their claims have been repeatedly evaluated and rejected. The basic reason for this, as noted above, is that Dr. Sternglass consistently violates one or more of the basic principles of good science. His primary objective is to shut down all commercial nuclear power plants, and he will stop at nothing in pursuing this goal.

The public has the right to know the truth about these biased and unsupported claims. The next time you hear the allegations of the tooth fairy proponents, I would urge that you ask hard questions. Challenge the basis for their assertions. Don't accept their theories simply because they tell you that scientists are working on the issue. You might also ask if they are board certified, just the same as you do in selecting your personal doctor. The bottom line is that for over 30 years real scientists have reviewed their claims and have found them to be baseless.

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69-1

Dade W. Moeller, Ph.D.

Dade W. Moeller received a bachelor's degree in civil engineering and a master's degree in environmental engineering from the Georgia Institute of Technology, and a doctorate in nuclear engineering from North Carolina State University. He retired in June, 1993, as Professor Emeritus of Environmental Health at the Harvard School of Public Health, where he had served for 15 years as Chairman of the Department of Environmental Health Sciences, followed by 12 years as Associate Dean for Continuing Education. Prior to joining the Harvard faculty, he served for 18 years as a commissioned officer in the U.S. Public Health Service. His duty stations included the Oak Ridge and Los Alamos National Laboratories; the headquarters offices of the Public Health Service in Washington, DC; the Robert A. Taft Sanitary Engineering Center in Cincinnati, OH, where he served as Director of Radiological Health Training; and the Northeastern Radiological Health Laboratory in Winchester, MA, where he served as Officer in Charge.

From 1973 to 1988, Dr. Moeller was a member of the Advisory Committee on Reactor Safeguards, and from 1988 through 1993, he chaired the Advisory Committee on Nuclear Waste. Both of these committees reported to the Commissioners of the U.S. Nuclear Regulatory Commission. Dr. Moeller was a member of the Subcommittee on Environmental Effects, Committee on the Biological Effects of Ionizing Radiation (the BEIR-I Committee), National Research Council, and a member of the BEIR-III Committee. For eight years, he represented the U.S. on Committee 4 of the International Commission on Radiological Protection. In 1997, he was elected an honorary member of the National Council on Radiation Protection and Measurements (NCRP), after having served on the Council for 30 years. He is a past President of the National Health Physics Society, and a fellow in the American Nuclear Society, the American Public Health Association, and the Health Physics Society. He is a registered professional engineer, is certified by the American Board of Health Physics, and is a Diplomat in the American Academy of Environmental Engineers. In recognition of his accomplishments, he has been awarded the Distinguished Achievement Award by the Health Physics Society, and the Meritorious Achievement Award by the U.S. Nuclear Regulatory Commission. He was elected to the National Academy of Engineering in 1978 and to the Georgia Tech Engineering Hall of Fame in 1999. Dr. Moeller is the author of a widely used textbook on *Environmental Health*, now in its second edition.

TPD 70



The undersigned, The Greater Homestead/Florida City Chamber of Commerce, does here certify that the following resolution was duly adopted at a meeting duly called and held on August 17, 2000.

A resolution from the Board of Directors of the Greater Homestead/Florida City Chamber of Commerce, in support of the license renewal for Florida Power and Light's Turkey Point plant to allow the plant to continue to safely produce electricity for an additional 20 years beyond the year 2013.

WHEREAS, The Board of Directors of the Greater Homestead/Florida City Chamber of Commerce is aware of the proposed license renewal for Turkey Point,

WHEREAS, Florida Power and Light's Turkey Point Plant is located in the Homestead/Florida City area and provides 900 jobs, and

WHEREAS, Turkey Point generates over 1,400 million watts of electricity, enough to supply the annual needs of approximately 250,000 homes, and

WHEREAS, Since 1995, Turkey Point is the only nuclear plant in the nation to consistently achieve the highest performance rating from the Nuclear Regulatory Commission,

WHEREAS, We believe Turkey Point is both safe and cost efficient, ensuring safe, high-quality, low-cost power, and

THEREFORE, BE IT RESOLVED this 17th day of August, 2000, that the Board of Directors of the Greater Homestead/Florida City Chamber of Commerce does hereby support the renewal of the operating license of Turkey Point.

70-1

70-2

70-3

70-4

70-5

70-6

**Greater Homestead/Florida City Chamber of Commerce
Board of Directors Meeting August 17, 2000
Members Present**

David Peyton
First National Bank of Homestead

Thomas Weller
Weller & Losner

Mario Espincira, Jr.
Deco Truss Company

Jane McMillan
Stokes, McMillan, Schiller & Maracini

Marlene Porter
Community Bank of Florida

Lynn Hunt
South Dade High School

Corey Gold
Homestead Hospital

Steve Bateman
Two Brothers Construction Company

Ada Bill
Florida Power and Light

Ignacio Fiallos
Ground Zero Communications

Joe Hunt
Farm Credit of South Florida

David Passmore
Carl Pelt & Sons, Inc.

Danny Lipe
Community Bank of Florida

David Cunigan
TIB Bank of the Keys

Dr. Roy Phillips
Miami-Dade Community College

Curtis Ivy
City of Homestead

General Charles Stenner
Homestead Air Reserve Base

Mary Finlan
Chamber of Commerce

TPD 71

**License Renewal Is the Best Option for Turkey Point
Ralph L. Andersen
Chief Health Physicist
Nuclear Energy Institute**

**June 17, 2001
Homestead, Florida**

Good afternoon. My name is Ralph Andersen and I am the chief health physicist at the Nuclear Energy Institute. I am pleased to have the opportunity to join the discussion today among interested citizens of Southern Florida, state and local officials, NRC staff, and other parties on license renewal for Turkey Point.

The Nuclear Energy Institute coordinates energy policy for U.S. energy companies that own a nuclear power plant. The Institute also represents industry suppliers, fuel cycle companies, universities and colleges, and other organizations are involved in the beneficial use of nuclear technologies—such as medicine, agriculture and food safety and space exploration.

Nuclear energy provides electricity for one of every five homes and business in America. Here in Florida, electricity customers get about 17 percent of their electric power from five nuclear reactors, including Turkey Point, as well as Florida Power and Light's St. Lucie and Progress Energy's Crystal River nuclear plants.

The purpose of today's meeting is to discuss environmental issues related to the license renewal application for Turkey Point that Florida Power and Light submitted to the NRC last year.

Florida Power and Light is the fourth utility to seek nuclear plant license renewal. In March 2000, the NRC for the first time approved a 20-year license extension for two reactors at the Calvert Cliffs Nuclear Power Plant on the shores of the Chesapeake Bay in Maryland. That approval was a landmark for the industry and evidence of the tremendous long-term energy and environmental benefits of nuclear power. To date, six reactors have

already received 20-year license extensions from the NRC and the agency is reviewing requests from fourteen others, including Turkey Point.

About one-third of all U.S. reactors are expected to submit applications over the next several years. Many more are expected to join them.

Renewing nuclear plant licenses for an additional 20 years is economical compared to the development of alternative energy sources. As both the Nuclear Regulatory Commission and stakeholders become more familiar with the process, we expect the license renewal process to become even more efficient.

Moreover, there is growing recognition among the public and policymakers both in the United States and internationally that we must maintain the clean air and other environmental benefits of nuclear energy.

The White House recognizes very clearly the clean air benefits of nuclear energy in its comprehensive energy strategy. Vice President Dick Cheney has said—"If you're really serious about reducing greenhouse gases, one of the solutions to the problem is to go back and take another look at nuclear power."

There are tremendous air quality advantages from nuclear energy both for the health of Florida's citizens and from an economic view, given the state's tourism industry.

License renewal for nuclear power plants is important to our nation's future energy security and environmental needs. Today's public meeting is part of an extensive process that helps ensure that no important environmental issues are overlooked as the NRC continues to evaluate the Turkey Point license renewal application. Throughout its review, the NRC will continue to keep interested citizens and stakeholders apprised of its progress.

One of the requirements of the environmental report is for Florida Power and Light to compare the impacts of alternative energy sources as part of evaluating possible alternatives to relicensing Turkey Point.

The results of that evaluation are worth noting. For example, photovoltaic cells generating 1,386 megawatts of power ... the same amount of electricity produced at Turkey Point ... would consume about 48,000 acres of land. And wind-powered plants are simply not economically feasible as an alternative because the state of Florida is in a wind power Class 1 region, which means it has the lowest potential for wind energy generation.

The draft GEIS also evaluates other alternatives for providing electricity to the people of South Florida, including power plants that burn coal, natural gas, or oil, as well as hydropower, geothermal energy, and biomass-derived fuels. The GEIS even considers a no-action alternative—which means "do nothing." The report concludes that these alternative actions, including the no-action alternative, are notfeasible or may have environmental impacts of moderate to high significance. In contrast, the report concludes that the environmental impacts associated with renewing the Turkey Point license are small.

What exactly does license renewal mean?

With the extension of the license, it means 20 more years of environmental and economic benefits and continued reliable electricity for consumers and businesses in South Florida.

I happen to think it's a necessary option. Let me give you three key reasons why:

- *First*, license renewal will maintain economic electric generation that does not produce greenhouse gases or other air pollutants, such as sulfur dioxide, nitrogen oxide and particulates. 71-1
- *Second*, license renewal will preserve good jobs for this area. And communities like Homestead, where these plants are located, will continue to gain substantial tax revenue. 71-2
- *Third*, renewal of Turkey Point's license is far more economical than building a new power plant. 71-3

Many people don't realize that nuclear energy is the largest source of emission-free electricity generation in America. It represents nearly 70 percent of our nation's emission-free generation.

Hydroelectric power is second at 29 percent. Photovoltaic cells and wind power each represent less than 1 percent of emission-free generation.

It's obvious from these figures that nuclear energy provides a vital clean air benefit to Florida and the United States, considering that each state must control emissions from electric generating sources through the Clean Air Act. In your community, Turkey Point also provides stable jobs, a strong tax base, and safe, reliable, and affordable electricity.

I mentioned earlier that I am a health physicist—which means that my profession is radiation safety. So I'd like to talk for a moment about radiation.

The draft GEIS for Turkey Point includes an assessment of environmental impacts associated with radiation from plant operations. This can be found on page 2-34 of the report. The NRC characterizes that impact as small. Drawing on the information provided in the draft GEIS, I'd like to offer a comparison to better illustrate what the NRC means by small.

This public meeting is scheduled to last about three hours.

During this meeting ... the amount of radiation each of us receives will be more than anyone living near the Turkey Point nuclear plant will receive during the entire 20 years of operation associated with license renewal.

During this meeting, each of us is receiving natural radiation—including natural radiation in our own bodies from the food we eat and water we drink, from the air we breathe, from the ground we're standing on and the materials used to construct this building, and even cosmic radiation reaching us from the stars and distant galaxies.

I want to close by saying that the draft GEIS is factual and complete, and should contribute to a fair and objective review of the environmental impacts of license renewal at Turkey Point. And I'd like to commend Florida Power and Light and the nuclear professionals at Turkey Point for their continued excellent record of safety performance and commitment to protecting public health and safety and the environment. Together, these are key factors in the NRC's conclusion in the draft GEIS that supports a positive decision on renewing the license for an additional 20 years.

71-4

Thank you.

71-5

71-6

71-7

TPD 72

COMMENT ON DRAFT REPORT
AND SUBMISSION OF NEW INFORMATION

GENERIC ENVIRONMENTAL IMPACT STATEMENT, SUPPLEMENT 5
REGARDING FLORIDA POWER AND LIGHT COMPANY'S PROPOSAL
TO THE U.S. NUCLEAR REGULATORY COMMISSION
TO RE-LICENSE THE TURKEY POINT 3 AND 4 REACTORS
(NUREG-1437, SUPPLEMENT 5)

JULY 17, 2001

By the Radiation and Public Health Project
New York, NY

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EXECUTIVE SUMMARY

The Radiation and Public Health Project (RPHP) welcomes the opportunity to comment and submit new and significant information to the U.S. Nuclear Regulatory Commission (NRC), Draft Report, *Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 5 (GEIS)*.

This information is being submitted with reference to the Turkey Point 3 and 4 nuclear reactors, located in south Miami-Dade County, Florida. However, RPHP findings of a link between in body radiation levels and increased childhood cancer risk should be considered in the NRC's review of all applications to extend the operating licenses of aging nuclear power plants throughout the United States.

A. General

1. Need to protect public from radioactive emissions from nuclear reactors

- From 1980 to 1999, electricity generated from America's nuclear power reactors increased from 248 to 727 million gigawatt-hours.
- Electric utilities have requested that the U.S. Nuclear Regulatory Commission (NRC) extend the operating licenses of 43 of 103 aging nuclear reactors for 20 years beyond the existing 40-year license period.
- The nuclear industry has declared a goal of building 50 new U.S. nuclear reactors.

2. Current Health Risk Assessment Policies are Deficient

- The NRC requires that electric utilities measure emissions of radioactive chemicals from nuclear reactors, and levels of these chemicals in the air, water, soil, and food. If these levels fall below federal "permissible limits," the NRC presumes there is no detectable health risk to residents living near reactors.
- The NRC does not require environmental measurements of Strontium-90, one of the most toxic radioactive chemicals emitted by nuclear reactors.
- The NRC, electric utilities, and public health departments have never measured levels of Strontium-90 or any other radioactive chemical *in bodies* of persons living near nuclear reactors.
- The NRC, electric utilities, and public health departments made no studies of cancer in persons living near nuclear reactors from 1957 to 1990. The only study, by the National Cancer Institute in 1990, made a controversial conclusion that nuclear reactors did not affect local cancer rates, a result that would be expected based on the methodology used.

- The NRC has approved the first five applications for extending the operating licenses of nuclear reactors an additional 20 years without examining the possible impact of federally-allowed emissions of radioactive chemicals on local cancer rates.

3. RPHP Information on In-body Levels of Radiation and Cancer Risk

- The Radiation and Public Health Project's (RPHP) baby teeth study ("Tooth Fairy Project"), which measures Strontium-90 (Sr-90) in baby teeth (and thus in their bones) is the first to study in-body radioactivity levels of persons living near nuclear power reactors and in more remote locations. Proximity to nuclear power reactors is one of several controls built into the baby teeth study.
- During the 1950s and 1960s, concerns about increased Sr-90 levels in St. Louis baby teeth, which corresponded to increased childhood cancer and leukemia rates, were factors in President John F. Kennedy's decision to sign the 1963 Partial Test Ban Treaty, which ended all atmospheric testing of nuclear weapons.
- RPHP has collected over 3000 teeth, and has measured Sr-90 levels in about half of these. Current concentrations of Sr-90 near nuclear power plants have risen to levels similar to those measured in St. Louis children born in 1956, during the period of above-ground atomic bomb testing in Nevada.
- In Suffolk County New York, which is within 60 miles of eight nuclear power reactors, RPHP has analyzed over 500 teeth and documented a 40.0% rise in average Sr-90 concentrations and a nearly similar 48.9% rise in leukemia and cancer among children under 10 from the early 1980s to the mid-1990s.
- Results of the baby teeth study have been published in three peer-reviewed medical journals.

B. Radiation and Childhood Cancer in Miami-Dade County

1. Turkey Point operations and environmental radioactivity

In March, 2001, RPHP released a Special Report on the Florida Baby Teeth Study, entitled "Environmental Radiation from Nuclear Reactors and Increasing Children's Cancer in Southeastern Florida," (the "Florida Report") which noted that:

- The Turkey Point 3 and 4 nuclear reactors located approximately 25 miles south of Miami have been operating since 1972 and 1973, respectively.
- From 1972 to 1993, Turkey Point reported the emission of 6.69 trillion picocuries of radioactive chemicals (including Sr-90) into the air, nearly half of the total released during the 1979 accident at Three Mile Island.

- The highest average Sr-90 concentration in five U.S. states has been documented in 86 baby teeth from persons born after 1979 in Miami-Dade County.
- For persons born in Miami-Dade during the period 1988-94, the average Sr-90 level in baby teeth was 21.5% greater than the average for the seven previous years.

2. The Link Between Radiation and Cancer in Southeastern Florida Children

- The rate of childhood leukemia and cancer in Miami-Dade County plus four counties to its north has risen to become one of the highest in the U.S., suggesting a link with the area's high Sr-90 levels.
- The cancer incidence rate in Miami-Dade children under age ten rose 6.8% from 1981-87 to 1988-94, an increase roughly comparable to the Sr-90 trend.
- Annual rises and declines in cancer incidence in Miami-Dade children under age five match those in radiation detected in local precipitation.
- Infant mortality declined 19.1% in Dade and Broward Counties in 1983-84, when Turkey Point's defective steam generators were being replaced and the reactors were mostly inactive. The following two years, when the reactors re-started, the infant death rate increased 1.2%.
- Cancer in children under age 10 in Miami-Dade and four other southeastern Florida counties (the region where four nuclear reactors are located), rose 35.2% from the early 1980s to the late 1990s, but declined 8.1% in the rest of the state (which has only one nuclear reactor).

C. NRC's Environmental Impact Statement is Flawed

1. The NRC has prepared a draft Generic Environmental Impact Statement, Supplement 5 (GEIS), on the application to extend the Turkey Point licenses, as required by law. The NRC's conclusion that the application represents no threat to local health included numerous comments about RPHP research that are not based in fact or are misleading.
 - The GEIS statement that the baby teeth study represents no new information on the issue of radiation and public health does not acknowledge that the research is the first to measure *in-body* radioactivity specifically near nuclear power reactors.
 - The GEIS fails to cite numerous medical journal articles documenting links between radiation exposure from nuclear reactor emissions and cancer, especially in children.
 - The GEIS does not adequately address the evidence that the fetus and developing infant are at significantly higher risk of cancer and brain damage from low-level radiation that had been previously understood. This evidence is presented in the 1990 report of the Committee on the Biological Effects of Ionizing Radiation, National

Research Council (BEIR V), which concluded that there are no safe levels of radiation exposure.

- The GEIS asserts that the doubling in cancer in the past half-century is not due to any environmental cause, other than cigarette smoking, failing to cite the considerable research documenting links between cancer and environmental toxins like radiation. The NRC ignores the rise in cancer rates among children, who do not smoke and whose parents are smoking less than a generation or two ago.
- The GEIS makes no mention of the increased sensitivity of the fetus and infant to radiation exposure.
- By no longer requiring Strontium-90 to be measured, either in environmental samples or humans, it has been possible for the NRC to characterize the radiation threat from the Turkey Point plant and all other nuclear power reactors as "microscopic." In this way, the NRC obscures the true magnitude of the threat to human life and health presented by fission products released into the environment.

D. Recommendations

1. The Radiation and Public Health Project recommends that several actions be taken by the NRC in regard to the re-licensing process for Turkey Point, and subsequent re-licensing applications for all reactors:
 - The NRC should require that Sr-90 be once again measured in environmental samples.
 - The NRC should institute a program of measuring levels of radioactivity in bodies of persons living near nuclear reactors, and should publicly report its findings in a timely manner.
 - The NRC should authorize periodic studies comparing in-body levels of radioactivity with local rates of childhood and adult cancer and other diseases susceptible to radiation exposure.
 - The NRC should postpone a decision on extending the license of Turkey Point and all other reactors until it has thoroughly evaluated all available information, including recent reports and significant research in progress, on nuclear reactor emissions and public health.
 - The NRC should include risks to health (i.e., links between local cancer patterns and radioactivity in the environment and body) as a criterion for extending licenses of existing nuclear reactors and for granting future licenses to operate new reactors.

COMMENTS ON ENVIRONMENTAL IMPACT STATEMENT

I. INTRODUCTION

The Radiation and Public Health Project (RPHP) is an independent, non-profit research and educational organization. The focus of RPHP's work is to assess the health effects of exposures to radioactive chemicals released into the environment by nuclear weapons tests and nuclear reactor operations. Founded in 1985, RPHP has assembled an interdisciplinary team of professionals from the fields of radiation physics, toxicology, epidemiology, medicine, and statistics. RPHP Research Associates have published numerous medical journal articles and books on the radiation health issue (see Appendix 1).

RPHP has documented substantial evidence linking environmental nuclear radioactivity with increased cancer risk. Perhaps the strongest evidence is the correlation of rising and declining levels of radioactive Strontium-90 in baby teeth with risk of childhood cancer in Long Island. The following comment outlines RPHP's findings and considers implications of these findings, including the Florida Report, for the environmental impact of extending the operating license of the Turkey Point 3 and 4 reactors.

II. NUCLEAR REACTOR EMISSIONS AND HEALTH

More Reactors Produce More Radioactivity. Currently, 103 nuclear power reactors (at 72 sites) are operating in the U.S., producing about 20% of the nation's electricity. (1) About two-thirds of Americans, or approximately 190 million people, live within 100 miles of at least one nuclear reactor. Operating utilities have permanently closed a total of 22 reactors. In addition, 128 reactors that were proposed by utilities to federal regulators were later cancelled before commencing operations. (2)

Startup of new reactors and increased use of existing ones have caused the generation of electricity from reactors to nearly triple (248 million to 727 million gigawatthours) from 1980 to 1999. (1) Present trends suggest that use of nuclear power reactors may proliferate in the future. The U.S. Nuclear Regulatory Commission (NRC) has received applications to extend the licenses of 43 reactors from the current life span of 40 years to 60 years. In addition, at its annual meeting in May 2001, the Nuclear Energy Institute announced a goal of starting 50 new nuclear reactors in the U.S. over the next 20 years.

Problems Presented by Aging Reactors. Increasing use of aging nuclear reactors raises environmental health issues that need to be addressed, namely:

1. Do operations of reactors, which routinely emit man-made radioactivity into the air, soil and water, from where they are inhaled and/or ingested by people, result in increased risk of disease, including cancer?
2. Does the aging of reactors increase the chance of a serious accident?
3. Does the buildup of nuclear waste from reactor operations pose a threat to the health of local residents?

The focus of RPHP's work is primarily issue #1, health effects of routine, federally-permitted emissions of radioactive chemicals into the environment.

Government Assessment of Risks to Health is Deficient. Because radioactivity can damage human health, an accurate assessment of risk to the public is warranted. However, current regulatory policies do not include an adequate risk assessment for low-dose exposures. The U.S. Nuclear Regulatory Commission has approved the first five applications for reactor license extension, with no consideration of disease rates, including cancer, in persons living closest to reactors.

RPHP has investigated health effects of exposures to reactor emissions from the Turkey Point reactors to residents of Miami-Dade County and has published its findings in the Florida Report, a copy of which is being submitted to the NRC along with these Comments.

III. HEALTH STUDIES HAVE BEEN LIMITED

Reactor Operations Release Many Cancer-Causing Chemicals. Nuclear reactors employ fission of uranium atoms to generate electricity. The fission process creates over 100 radioactive chemicals not found in nature, which may damage the immune, genetic, and hormonal systems. These products include strontium, plutonium, iodine, and other carcinogenic isotopes. The only other source of these man-made chemicals is nuclear weapons explosions. Most fission products generated by reactors are contained as radioactive waste, but some is emitted into air and water.

The NRC requires that electric utilities measure emissions of radioactive chemicals from nuclear reactors, along with levels of these chemicals in air, water, soil, and food. It does not require environmental measurements of Strontium-90, one of the most toxic radioactive chemical produced by reactors.

Health Studies Are Lacking. The NRC does not conduct or authorize health studies of radioactive chemical emissions or environmental levels. If levels fall below the federal "permissible limit," the NRC makes a presumption that public health is unaffected.

There has been a dearth of scientific, peer-reviewed studies evaluating disease rates near U.S. nuclear power plants since the first reactor opened in 1957. Only one national study has been done. In 1990, at the request of Senator Edward M. Kennedy, the National Cancer Institute (NCI) published data on cancer near nuclear plants.

The report concluded there was no connection between radioactive emissions and cancer deaths, because the methodology compared cancer rates in counties containing nuclear reactors with "control" counties often situated nearby. As a result, there was no significant difference between counties with nuclear plants and the "control" counties. However the NCI did find that cancer rates near many reactors rose after reactor startup. (3) Since 1990, no federal agency, including the Environmental Protection Agency and

Southeastern Florida - Highest in Sr-90, Highest in Childhood Cancer. In southeastern Florida, the four reactors at Turkey Point and St. Lucie reported releases of 10.39 trillion picocuries of radioactivity (only chemicals with a half-life over eight days) into the air from 1970-93. A picocurie is a measure of radioactivity, representing one-trillionth of a curie. About two-thirds of the southeastern Florida total (6.69 trillion) originated from Turkey Point, nearly one-half of the 14.20 trillion picocuries emitted during the Three Mile Island accident in March 1979. (24) The Turkey Point plant is located 25 miles south of Miami; its two reactors began operation in 1972 and 1973.

Fewer baby teeth have been tested from persons born in Miami-Dade County than in Long Island. The average Sr-90 levels for 86 county residents born after 1979 is 2.21 picocuries of Sr-90 per gram calcium, making Miami-Dade the area with the highest Sr-90 content in the U.S. measured to date by the baby teeth study, (i.e., the five states for which at least 20 teeth have been measured).

Average Sr-90 Concentration in Baby Teeth Compared to Cancer Incidence, Children Under Age Five

Area	No. of Teeth b. 1980-94	Avg. pCi Sr-90 per g Calcium	Cancer cases/100,000 Age 0-4, 1985-96
Miami-Dade County, FL	86	2.21	25.65
Ocean/Monmouth Cos., NJ	120	1.42	25.05
Westchester County, NY	65	1.55	23.01
Suffolk County, NY	544	1.38	22.51
New London/Middlesex/ Tolland/Windham Cos., CT	20	0.83	20.82

Sources: State Cancer Registries (cancer cases) and Radiation and Public Health Project (Sr-90 data)

The average concentration of Sr-90 in Miami-Dade baby teeth increased 21.5% from 1981-87 to 1988-94. During this period, the cancer incidence rate in Miami-Dade children under age ten rose 6.8%. Here, Sr-90 and childhood cancer are rising together, as was found in Suffolk County NY, implying a cause-and-effect relationship.

Trends in Average Concentration of Sr-90 in Baby Teeth And Cancer Incidence Age 0-9 Miami-Dade County, Florida, 1981-1994

Birth Yr	No. Teeth	Avg. Sr-90+	Diag. Yr	Cases Pop.	Rate#
1981-87	30	1.91	1981-87	287 1572525	18.25
1988-94	53	2.33	1988-94	387 1985143	19.49
% Ch		+21.5%			+6.8%

+Average picocuries of Strontium-90 per gram of calcium in baby teeth at birth
Cancer cases per 100,000 population
Sources: New York State Cancer Registry (cancer cases) and Radiation and Public Health Project (Sr-90 data)

More teeth are needed from Miami-Dade to undertake a more sophisticated analysis. This number will be achieved by the year 2002. In the three months since the presentation of initial tooth study results in the Florida Report on March 28, 2001, the number of teeth submitted from Florida has jumped from 239 to 542, most of them from the Miami-Dade area.

The childhood cancer situation in southeastern Florida is worsening. Since the early 1980s, the cancer incidence rate in the area has risen +35.2%; but in all other parts of Florida, the rate has fallen by -8.1%. The five southeastern Florida counties are flanked by the two St. Lucie reactors to the north and the two Turkey Point reactors to the south. There is only one other nuclear reactor in the rest of the state (Crystal River, 70 miles north of Tampa). These divergent trends provide additional reason to fully study the radiation-cancer link in Miami-Dade.

Cancer Incidence Age 0-9 Southeastern Florida* vs. Other Parts of the State 1981-83 vs. 1996-98

Area	Cancer Cases		Population (000)		Cases/100,000		% Change
	1981-3	1996-8	1981-3	1996-8	1981-3	1996-8	
S'eastern FL*	191	408	1250648	1976508	15.27	20.64	+35.2%
Other FL	458	646	2542737	3904506	18.01	16.54	- 8.1%

*Broward, Martin, Miami-Dade, Palm Beach, and St. Lucie Counties
Source: Florida Cancer Data System

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Link Between Radioactivity in Miami-Dade Precipitation and Childhood Cancer. Even before additional teeth are tested, independent evidence exists for a radiation-childhood cancer link in Miami-Dade. The U.S. Environmental Protection Agency has reported levels of "gross beta", or radioactive chemicals that emit beta particles, in Miami precipitation for more than a decade. RPHP discovered that trends in gross beta levels are followed by similar trends in cancer incidence for Miami-Dade children under five just three years later (Figure 1). This is an important piece of evidence in support of a cause-and-effect relationship and of an environmental radiation-childhood cancer link.

V. IMPROVED INFANT AND CHILD HEALTH AFTER REACTOR SHUTDOWN

In 2000, RPHP staff published an article documenting that in five of five areas near closed nuclear power plants, the infant death rate improved dramatically in the first two years after closing. In addition, rates of birth defects and childhood cancer also improved. (25)

Soon after Turkey Point started operations, Florida Power and Light staff began to have trouble with corrosion and tube leaks in the steam generators. Turkey Point 3 and 4 were closed, one after the other, to repair the generators. The NRC GEIS notes that, "If

primary-to-secondary leakage occurs, then these can also be unmonitored radioactive airborne releases from the secondary steam systems of each unit" (2-11).

During the period 1983-84, when radioactive exposures to fetuses and infants were greatly reduced, infant mortality in Miami-Dade and Broward Counties fell 19.1% from the previous two years, significantly different from the 6.4% national drop. In 1985-86, when the reactors had returned to full power, the infant mortality rate increased 1.2%, while it fell 4.3% in the U.S. These findings are consistent with research on other closed reactors.

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Thus, the need for additional study of the relationship between environmental radiation and cancer is essential. It is essential that this information should be considered by the U.S. Nuclear Regulatory Commission in their review of the Florida Power and Light application to re-license the Turkey Point 3 and 4 reactors, and in all future licensure and re-licensure applications.

**Changes in Infant Mortality
Dade and Broward Counties
Before and After Temporary Closing of Turkey Point**

Closing Turkey Point

Years	Deaths <1 Yr.	Live Births	Deaths/1000	% Change
1981-82 (open)	988	74,160	13.32	
1983-84 (shut)	859	79,687	10.78	- 19.1% (p <.01) - 6.4% in U.S.

Re-Opening Turkey Point

Years	Deaths <1 Yr.	Live Births	Deaths/1000	% Change
1983-84 (shut)	859	79,687	10.78	
1985-86 (open)	951	87,187	10.91	+ 1.2% (p <.23) - 4.3% in U.S.

Source: National Cancer for Health Statistics (www.cdc.gov, data and statistics, CDC Wonder)

VI. SUMMARY

Since atomic bombs were first manufactured and used during World War II, exposure to man-made fission products has been a critical environmental health issue. The relative novelty of these chemicals in the environment underscores the need for thorough and objective studies.

Since the conclusion of the Cold War a decade ago, nuclear weapons are no longer tested by the United States. However, electricity production from American nuclear power reactors has reached an all-time high, and the nuclear industry is now considering a large-scale expansion of new nuclear power plants in the U.S. These developments indicate that efforts to protect humans from the potentially harmful effects of exposure to radioactive emissions in the environment will be critical.

Southeastern Florida has Sr-90 concentrations in baby teeth childhood cancer rates well above national averages. Both Sr-90 and childhood cancer are rising at roughly the same rate locally. There is a link between radioactivity in precipitation and childhood cancer in the region. And local infant mortality declined sharply when Turkey Point closed down in the early 1980s.

**RESPONSES TO NUCLEAR REGULATORY COMMISSION COMMENTS
IN TURKEY POINT ENVIRONMENTAL IMPACT STATEMENT**

The GEIS Supplement 5, Section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health, discusses and dismisses the findings in the RPHP published report on "Strontium-90 in Deciduous Teeth in Early Childhood Cancer" (referred to as the "Gould report"). The main responses of the Radiation and Public Health Project (RPHP) to the Nuclear Regulatory Commission (NRC) evaluation are as follows:

1. The Gould report was not available to the NRC at the time the GEIS was written.

The article by Gould and his associates in the *International Journal of Health Services* was published in September 2000, well before the EIS was completed in May 2001. (20) It has been available in medical libraries, plus online at www.nlm.nih.gov or www.radiation.org.

2. Comments that the GEIS should include adverse health effects of radioactive emissions and Sr-90 measurements in baby teeth are not new information.

The Gould study represents the first assessment of in-body measurements of radioactivity and its health effects near U.S. nuclear reactors. The NRC, public health departments, including the Florida Department of Health, and utilities have never made such measurements.

3. Only one study (26) was cited by the GEIS as evidence that no causal association between nuclear facilities and cancer exists.

There are numerous articles published in the medical literature that document elevated levels of cancer near nuclear facilities or after reactor accidents like Three Mile Island and Chernobyl. At least 11 studies in the United Kingdom alone show high levels of childhood cancer near various nuclear plants. (6-16)

4. NRC permissible limits for radioactive emissions are based on recommendations from organizations such as the International Commission on Radiological Protection and National Council on Radiation Protection and Measurements.

The GEIS does not adequately address the evidence that the fetus and developing infant are at significantly higher risk of cancer and brain damage from low-level radiation that had been previously understood. This evidence is presented in the 1990 report of the Committee on the Biological Effects of Ionizing Radiation, National Research Council - National Academy of Science (BEIR V), in 1990. (27)

The BEIR V report states "there is concern about radioactivity in the environment around nuclear facilities." It also notes that, "...the new data do not contradict the hypothesis, at least with respect to cancer induction and hereditary genetic effects, that the frequency of

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such effects increases with low-level radiation, as a linear, nonthreshold function of the dose." In other words, there are no safe limits for exposure to radiation, especially for the developing fetus.

5. The average value across the U.S. today from fallout of atmospheric nuclear weapons tests should be approximately 4 pCi of Sr-90 per gram of calcium in baby teeth.

The average radioactivity concentration in St. Louis baby teeth from bomb test fallout plummeted from 11.03 to 4.60 pCi Sr-90/g Ca from 1964 to 1970, after the bomb testing ended. In addition, British researcher Janine Bell calculated that by the mid-1980s, the burden of radioactivity from bomb test fallout was below the 1951-52 levels, at the beginning of bomb testing. (28) Both constitute evidence that current levels of bomb test fallout should be well below 4 pCi, and perhaps close to zero. As opposed to the NRC's projected Sr-90 levels in soil, RPHP is referring to projected Sr-90 levels in bone and teeth.

6. Rhabdomyosarcoma is not rare.

Writing in the *New England Journal of Medicine* in 1999, two Mayo Clinic researchers estimated the number of new cases among the 60 million American children under age 15 to be only 250 per year (out of 8,000 total childhood cancer cases). (29) The rate of rhabdomyosarcoma in western Suffolk County NY, near a number of nuclear reactors, is 15 times higher than the national rate. (22) (See Appendix 2).

7. No association has been documented between the incidence of rhabdomyosarcoma and any environmental condition, including radiation exposure.

In 1991, University of Pittsburgh researchers published a study showing that children of women who received X-rays during pregnancy had twice the risk of developing the disease. (30) In 1999, an Arizona research team demonstrated that one-quarter of mice who had Sr-90 applied to their skin developed rhabdomyosarcoma or a related soft-tissue cancer. (31)

8. While cancer risk has doubled in the past half-century, this increase does not appear to be due to environmental causes other than cigarette smoking.

Cancer incidence in Connecticut children under age 10 has nearly doubled from the early 1940s to the mid-1990s, an increase similar to the adult population. (32) None of these cancers are caused by children using tobacco; and because the rate of smoking among adults (parents) has declined about 40% since the mid-1960s, (33) the increase is due to factors other than tobacco. Children are most susceptible to the effects of environmental toxins such as radiation.

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9. It is not apparent that the Gould report included control groups.

The baby teeth study contains several control groups, including temporal controls, distance from reactor controls, and Sr-90 levels before and after reactors open and/or close. In 10 teeth from children born at least 200 miles from nuclear reactors, the average Sr-90 concentration is about 60% below that of those born near reactors. In addition, Sr-90 levels in 19 teeth of children born in San Luis Obispo County CA, after the startup of the Diablo Canyon nuclear reactors in the mid-1980s, are 50% higher than for children born before the reactors opened. Additional control data are being analyzed.

10. The Gould report does not report factors such as where the mother lived while pregnant, nor consider the source of food that the children may have consumed.

The report states that all baby teeth are classified according to where the mother lived during pregnancy. It also collects information on the type of water (bottled, municipal, other) consumed in the household. This data is clearly outlined in the methodology section of the Gould report.

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11. The American Cancer Society reports that studies show cancer clusters do not occur more often near nuclear plants than they do by chance elsewhere in the population.

In counties within 30 miles of nuclear plants in the eastern U.S., rates of cancer in children under 10 years old from 1988-97 exceeded national rates in 13 of 13 areas (see below). The cancer rates in Miami-Dade County and in Martin/St. Lucie Counties are the highest of all these. (34)

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Cancer Incidence, Children Under Age 10
Counties Mostly/Completely Within 30 Miles of Nuclear Plants
Eastern U.S., 1988-1997

Plant (No. Reactors)	Counties	Cases	Pop. <10	Cases per	
				100,000	+/- US
U.S.				15.50	
Indian Point (2)	Rockland NY, Westchester NY	253	1390417	18.20	+17.4%
Brookhaven (2)	Suffolk NY	307	1701407	18.04	+16.4%
Turkey Point (2)	Miami-Dade FL	575	2894175	19.87	+28.2%
St. Lucie (2)	Martin FL, St. Lucie FL	76	337853	22.49	+45.1%
Oyster Creek (1)	Monmouth NJ, Ocean NJ	280	1427943	19.61	+26.5%
Pilgrim (1)	Plymouth MA	120	675674	17.76	+14.6%
Seabrook (1)	Essex MA	169	965032	17.51	+13.0%
Beaver Valley (2)	Allegheny PA, Beaver PA, Butler PA Lawrence PA, Washington PA	395	2449693	16.12	+ 4.0%
Three Mile Island/ Peach Bottom (3)	Cumberland PA, Dauphin PA, York PA Lancaster PA, Lebanon PA, Perry PA	322	1934559	16.64	+ 7.4%
Susquehanna (2)	Carbon PA, Columbia PA, Luzerne PA, Monkton PA, Schuylkill PA, Sullivan PA, Wyoming PA	136	778040	17.48	+12.8%
Limerick (2)	Berks PA, Chester PA, Delaware PA, Lehigh PA, Montgomery PA	488	3046972	16.02	+ 3.3%
Millstone (2)	Middlesex CT, New London CT, Tolland CT, Windham CT	137	797959	17.17	+10.8%
Salem/Hope Cr. (3)	Kent DE, New Castle DE, Gloucester NJ, Salem NJ	205	1294630	15.83	+ 2.2%
TOTAL		3463	19694354	17.58	+13.4%

Notes: Cancer data from cancer registries in eastern states with complete reporting from 1988-97. New York data represents 1988-96. Includes counties near reactors still operating.

**COMMENTS AND QUESTIONS ON OTHER HEALTH-RELATED TOPICS
IN TURKEY POINT ENVIRONMENTAL IMPACT STATEMENT**

1. Did Hurricane Andrew, which swept directly over the Turkey Point site in September 1992, damage the plant, re-suspend accumulated radioactivity on the site, and harm the environment and human health?

While the NRC states that it deemed the plant's design adequate to withstand severe weather in the original license granted to Turkey Point (p. 4-43), it didn't specifically address Hurricane Andrew's effects on the plant. Such a devastating natural disaster should merit consideration in the GEIS, which is supposed to protect local public health from harmful radiation until 2033.

2. Could other sources of radiation, such as the Chernobyl accident and Nevada atomic bomb tests, be the source of Sr-90 in baby teeth and rising childhood cancer rates?

From 1990-92 to 1995-97, cancer cases diagnosed in Miami-Dade and Broward County children under age ten rose steadily from 228 to 314, a rate increase of 25.4%. In addition, Strontium-90 levels in area baby teeth rose during the years 1991-94 (although more teeth are needed to confirm this initial result). Radioactivity from the Chernobyl accident (1986) and Nevada underground bomb tests (ended 1992) cannot be contributing factors.

3. Does liquid radioactive waste discharged into below-ground cooling canals present any threat to the local environment and public health? The NRC claims there is no such threat (p. 2-17 and 2-18).

Cooling canals are unlined, and located close to the Biscayne Aquifer, which supplies local drinking and farm water. According to the NRC there "may be exchange of water between the cooling canal system and the groundwater beneath the canal" (p. 2-18). Neither the NRC nor the utility monitors the amount of radioactive chemicals shifting from the canals to the groundwater, so the potential threat to the environment and human health is untested and should be explored.

4. Turkey Point nuclear units 3 & 4 were closed for most of 1983 and 1984 to replace defective steam generators, which began to corrode soon after the plant opened in the early 1970s. The GEIS acknowledges that steam generator leaks can be associated with "unmonitored radioactive airborne releases." Are the currently-used steam generators and their potential for tube leaks and corrosion an environmental issue when considering the re-licensure application? (This issue not addressed by the NRC).

Turkey Point's original and current steam generators were manufactured by the Westinghouse Corporation, which was sued by 14 utilities operating nuclear plants. Westinghouse won one suit, while settling the others out of court. Florida Power and Light, which filed the original suit in 1978 based on problems at Turkey Point, entered

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into one of these settlements. Because Turkey Point's current generators have been used for nearly 20 years (up to 50 years if the license is extended), the NRC should address any potential environmental and health threats posed by these aging parts, before an extension of its license is granted.

5. Do the NRC and Florida Power and Light make adequate measurements of radiation dose to the public from Turkey Point emissions? The NRC says that they do, and that the public is not affected (p. 2-10).

The NRC cannot and should not presume that Turkey Point emissions are harmless, since it does not measure in-body levels of radioactive chemicals like Strontium-90. In recent years, Strontium-90 measurements in milk near nuclear plants were no longer required. These levels were significant: in 1976, milk from dairy farms 5 to 10 miles from the Millstone plant in Connecticut had the same Strontium-90 concentration as in 1961-62, at the peak of atmospheric atomic weapons testing. With 123,000 Floridians living within 10 miles of Turkey Point, and over 3 million within 50 miles, it is critical that such measurements be made and compared with trends in cancer.

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APPENDIX 1. RPHP RECENT PROFESSIONAL PUBLICATIONS

Recent Book Publications

1. Gould JM and members of RPHP. *The Enemy Within: The High Cost of Living Near Nuclear Reactors*. New York: Four Walls Eight Windows, 1996.
2. Mangano JJ. *Low-Level Radiation and Immune System Damage: An Atomic Era Legacy*. Boca Raton FL: Lewis Publishers, 1998.
3. Sherman JD. *Life's Delicate Balance: Causes and Prevention of Breast Cancer*. New York: Taylor and Francis, 2000.

Recent Medical Journal Articles

1. Gould JM et al. Strontium-90 in deciduous teeth as a factor in early childhood cancer. *International Journal of Health Services* 2000;30(3):315-39.
2. Mangano JJ et al. Strontium-90 in newborns and childhood disease. *Archives of Environmental Health* 2000;55(4):240-4.
3. Gould JM et al. The Strontium 90 baby teeth study and childhood cancer. *European Journal of Oncology* 2000;5(suppl. 2):119-25.
4. Mangano JJ. Improvements in local infant health after nuclear power reactor closing. *Environmental Epidemiology and Toxicology* 2000;2:32-6.

APPENDIX 2. RHABDOMYOSARCOMA - RARE MALIGNANCY IN CHILDREN AND ITS LINK WITH RADIATION EXPOSURE¹

Bone, teeth, blood cells, lymphoid tissue, fat cells, muscles, and fibrous tissue all originate from a single layer during fetal development called the mesenchymal. (35) Leukemia and sarcomas are malignancies derived from mesenchymal cells, (36) the latter accounting for five percent of pediatric cancers. (37) Mesenchymal malignancies in children are of particular concern because they are aggressive and result in death of approximately 50% of those affected.

Rhabdomyosarcoma (RMS) is a rare form of sarcoma derived from skeletal muscle cells, (38) with an annual incidence of 4.5 newly-diagnosed cases per million children age 15 or younger. (39) There is no known cause of RMS in children. However, it has been induced in animals exposed to radiation. (40) (31) Moreover, fetuses exposed to X-rays while in utero had twice the risk of being diagnosed with cancer as children. (30)

In a small area of Suffolk County, on New York's Long Island, at least 19 children have developed rhabdomyosarcoma. Seven children younger than 10 years old diagnosed with rhabdomyosarcoma from 1994-99 lived in a small area of eight zip codes located 10 miles west-northwest of Brookhaven National Laboratory, which operated three nuclear reactors. In addition, this area is within 60 miles of eight nuclear power reactors in New York, Connecticut, and New Jersey.

Child	Diag. Year	Age	Zip Code	Child	Diag. Year	Age	Zip Code
1	1994	16	11804*	11	1996	7	11951
2	1996	3	11767 +	12	1990	16	11784
3	1996	4	11780 +	13	1997	1	11050
4	1994	4	11790 +	14	1995	3	11949
5	1982	12	11741*	15	1996	6	11733**
6	1995	16	11968*	16	1997	12	11763
7	unknown	unk.	11727	17	unknown	unk.	11961/11727
8	1994	23	11752*	18	1998	15	11787
9	1994	6	11767 +	19	1999	6	11780 +
10	1994	10	11784**				

* = deceased as of 1999 + = resident of 8 zip codes near Brookhaven National Labs

According to the 1990 census, the total population of this area was 119,150, which has not changed much since. Children ages 0 to 10 years old made up approximately 15% of that population, or 17,873 individuals; at a rate of 4.5 per million per year, about 0.48 cases would be expected from 1994-1999. Seven cases represents a rate nearly 15 times greater than expected. In 2000, the Suffolk County legislature authorized a Task Force to explore possible causes of the RMS outbreak.

¹ Appendices 2-6 prepared by Janette Sherman, M.D., RPIIP Research Associate

APPENDIX 3. MECHANISM OF NUCLEAR RADIATION INJURY

Radioisotopes accumulate in various parts of the body and produce damage as they decay by release of alpha, beta, or gamma energy. An isotopes' path through the body and its site of accumulation is dependent upon the chemical family to which it belongs. Beta particles, or high-energy electrons, are quickly slowed by collisions with tissue elements and their kinetic energy converted to thermal (heat) energy. (41) It is this energy, released during nuclear decay, that causes disruption of cellular membranes, alteration of DNA, changes in enzymes, and other adverse effects.

By contrast to nuclear bomb tests, which prolong the inhalation and ingestion of radioactive elements by dispersion into the stratosphere, emissions from nuclear power reactors are dispersed at low atmospheric levels and reach earth in a matter of hours, days, or weeks. Thus, Sr-90 and shorter-lived radioactive emissions enter the air, water, and food chain rapidly. Sr-90 is accompanied by isotopes such as argon, xenon, krypton, cesium, barium, and iodine, some of which have short half-lives and produce radioactive decay products that expose the embryo and fetus as well as the elderly to significant risk.

Geographical deposition of radioisotopes is not uniform, whether it is derived from bomb testing, nuclear power plants, or catastrophes such as Chernobyl and Three Mile Island. Measurement of radioactivity in rain, soil, air, and in food has confirmed an uneven distribution of Sr-90 fallout on the ground. (42) Fallout of Sr-90, Cs-137, and plutonium from the Chernobyl accident demonstrates a gradient of deposition related to distance from the source, and varying with wind, rain, and geography. (43) (44)

APPENDIX 4. RISK FROM LOW-DOSE RADIOACTIVE NUCLIDES

The often held notion that reactions to chemicals and ionizing radiation follow a linear dose-response curve is not supported by fact. While a reaction may be proportional at high doses that impair or kill, a straight-line dose-response is not borne out at low-dose exposures, (45) nor when an insult occurs at the critical periods of fetal development, and during cell division and repair. (46)

Internal exposures to toxic chemicals and radionuclides below the level that kills a cell are critical: such sub-lethal exposures that alter cellular function or structure and are not repaired become expressed as cancer or functional alteration. The DES daughters and sons are prime examples. Diethylstilbestrol (DES) was administered to pregnant women in the misguided idea that it would protect against fetal loss during pregnancy. Children and now grandchildren were born with anatomic and functional genital abnormalities and developed genital cancers when they reached adulthood. (47) Cells undergoing replication are hundreds of times more susceptible to radiation and chemical effects. (48) (49)

Internal radiation may involve exposure to nuclides such as plutonium-239 and strontium-90, some fraction of which stays within a body essentially for life because of long half-lives. It also involves exposure to nuclides with a short half-life such as barium-140, cobalt-57, chromium-51, cesium-134, iodine-131, and others, which release significant amounts of radiation over a period of hours to days.

Many nuclides undergo sequential decay, an ideal condition for sub-lethal damage to promote the induction of genomic instability. (50) Thus, internal decay of such isotopes as plutonium-239 and carbon-14 deliver a biological effect of very long duration and the potential to induce genetically transmitted defects. (51) In addition, very low levels of radiation exposure demonstrate an enhanced, supra-linear effect due to the release of free radicals, resulting in functional and physiological effects, separate from genetic or mutational alteration. (52) (53)

APPENDIX 5. RADIOACTIVE STRONTIUM-90 (SR-90) IN BABY TEETH

Sr-90 is a reliably measured surrogate to determine radiological fallout because of its slow excretion from the body and a long half-life of 28.7 years. With such a lengthy half-life, Sr-90 is persistent in the environment and in the bodies of humans. The uptake of radioactive Sr-90 follows that of calcium and becomes deposited in bones and teeth. The newborn's calcium and Sr-90 are derived from the mother's dietary intake and from her bone stores during pregnancy. (54) (17) But Sr-90 was understood before the first atomic bomb was detonated when it was proposed by Enrico Fermi to use the bone-seeking isotope to poison the food supply of Germany during World War II. (55)

Measurements of Sr-90 deposited in human bones and teeth began after the onset of above-ground nuclear bomb tests in Nevada and were carried out by various governments, including the U.S. (56) (57) (58) (18) An independent, comprehensive study by the Committee for Nuclear Information measured Sr-90 levels in about 60,000 baby teeth collected from children in St. Louis. (54) (59) Comparing 1954 births with those in 1964, Sr-90 levels increased in concentration from 0.77 to 11.03 picocuries per gram of calcium. The risk to health from this contamination and concern for the health of children worldwide led to a ban on above ground nuclear testing by the U.S. and U.S.S.R., a treaty signed by President Kennedy and Premier Khrushchev in 1963.

Testing of St. Louis baby teeth ended in 1976 with the withdrawal of federal support from the project. Government agencies also supported programs of measuring Sr-90 in children's bones (1962-71) and adult bones (1954-82). Again, these programs ended when federal funding ceased.

More recent testing followed Chernobyl releases, when the Otto Hug Institute in Germany documented a ten-fold increase in Sr-90 levels in baby teeth for children born in 1987, compared with those born in 1983-85. (60) The rise in levels are comparable to the rise documented in St. Louis children in the midst of the above-ground nuclear bomb testing era. In 1990, for unknown reasons, the U.S. Environmental Protection Agency program of reporting monthly levels of barium-140, cesium-137, and iodine-131 in pasteurized milk in 60 U.S. cities was discontinued after 33 years. Strontium-90 in levels in pasteurized milk in these cities are limited to only a single annual measurement in July. (61)

APPENDIX 6. NUCLEAR RADIATION AND CHILDHOOD CANCER

The global epidemic of cancer has not lessened despite improvements in diagnosis and treatment. Since World War II, our environment has changed in significant ways. The advent of the Nuclear Age, and the increase in the manufacture, use, and disposal of petrochemical products such as pesticides, solvents, and plastic, often acting synergistically with radioactive elements, has contributed to the burden of cancer in industrialized countries.

Mimicking natural elements, a myriad of radioactive isotopes never existed in our evolutionary history until the detonation of nuclear bombs and the operation of nuclear power plants. These imposters, created in nuclear bombs and power plants, fall to earth where they are taken up in food and water of animals and humans. It is these emissions that are addressed in various articles, including one about the improvements in local infant and child health after the closing of nuclear reactors. (25)

Cell division, and thus human growth, is most accelerated during the fetal and infant periods. Thus, any cell-impairing toxin such as radiation will be most harmful to the youngest humans. Childhood cancer has long been recognized as perhaps the disease most sensitive to radiation.

The adverse effects on humans who were exposed to nuclides were predictable, based upon research in the physiological, biological, chemical, and physical sciences. Thus, removal of sources of carcinogenic exposure should provide relief from the burden of disease. As predicted, improvements in infant/child health occurred dramatically and quickly after reactor closings. The following declines in local infant mortality in the first two years after reactor closing are given below. Counties downwind and less than 40 miles from the reactor are included.

Reactor, Closed	Infant Deaths		Live Births		Deaths/1000		% Change
	Before	After	Before	After	Before	After	
<u>Permanently Closed</u>							
LaCrosse WI, 1987	36	30	3507	3452	10.27	8.69	-15.4%
Rancho Seco CA, 1989	418	390	44500	49414	9.39	7.89	-16.0%
Ft. St. Vrain CO, 1989	83	72	9725	9977	8.53	7.22	-15.4%
Trojan OR, 1992	253	204	30320	29799	8.34	6.85	-17.9%
Big Rock Pt. MI, 1997	25	6*	2922	1529*	8.56	3.92*	-54.2%
Me. Yankee ME, 1997	19	10*	3841	2201*	4.95	4.54*	-8.3%
<u>Temporary Closing (for at least two years)</u>							
Pilgrim MA, 1986	97	76	12956	13412	7.49	5.67	-24.3%
Millstone CT, 1995	166	130	22261	21093	7.46	6.16	-17.4%
TOTAL 8 AREAS	1097	918	130032	130877	8.44	7.01	-16.9% p<.02
U.S. AVERAGE CHANGE, 1986-1998							- 6.4%

APPENDIX 7. THE RELATION BETWEEN PICOCURIES AND DOSE IN MILLIREMS.²

Radioactivity of a substance, or the number of disintegrations per second in which some form of radiation is emitted, is measured in units of Curies or picoCuries. A Curie is the very large number of 37 billion events per second, and a picoCurie is one trillionth of this, or 0.037 disintegrations per second. Thus, Curies or picoCuries are a measure of the quantity of radioactive material. In the case of Strontium-90, which emits only electrons or beta rays, these units give the number of high-energy electrons emitted per second.

Rems or millirems (1/1000 of a rem) by contrast are a measure of the energy absorbed in tissue as a result of the emission of energetic particles like the electrons ejected from the nuclei of Strontium-90 atoms. Thus, they are a measure of the amount of biological damage produced by the radioactive material that leads to mutations or the death of immune system cells.

The damage done as measured in millirems for low levels of Sr-90 radioactivity is not only directly proportional to the radioactivity in picoCuries, but also proportional to the energy of the emitted electrons that can travel a few millimeters in tissue. Moreover, it is also directly related to the length of time during which the emission of powerful electrons takes place. Thus, the biological damage leading to cancer and other diseases is particularly great for Sr-90 because it has a fairly long physical half-life of 28.7 years, and because it also stays in bone for years as measured by its biological half-life, or the time it takes for half the Sr-90 atoms to leave the bone. This biological half-life is about 2 years for infants, and 5-10 years for adolescents and adults, so some Sr-90 will be found in an individual for many years, even when it is not constantly replaced by new ingestion or inhalation.

The dose in millirems produced in bone in the course of a year when the amount of Sr-90 is kept constant at 1 picoCurie per gram of calcium has been calculated at 4.5 millirems per year, as given on page 50 of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) of 1972. A similar result is obtained in a 1977 Nuclear Regulatory Commission publication NUREG 1.109 used by the NRC to evaluate the radiation dose to the public from nuclear plant releases.

To get a feeling for the importance of the dose of 4.5 mr per year produced by the presence of just one picoCurie of Sr-90 per gram calcium in bone, it is important to realize that the dose due to natural sources of environmental radiation, other than radon in some homes, is about 70 to 100 mr per year. Since some individuals have been found to have as much as ten to fifteen pCi/gCa of Sr-90 in teeth at birth, the dose per year was more than ten times the rate of 4.5 mr per year, or more than 45 mr. Thus in the first three or four years of life at continuing intake of Sr-90 from the drinking water, the diet and the air, the cumulative dose to bone was of the order of the range of 100-180 mr.

² Prepared by Erenst J. Sternglass, Ph.D., chief scientist, RPHP

This dose has to be compared with the theoretically calculated whole-body dose produced to a maximally exposed individual by a nuclear reactor such as one of the Turkey Point Reactors in 1986 of only 0.0038 mr per year, as listed in the 1996 NRC publication "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (NUREG-1437).

This is 1184 times smaller than the yearly dose due to 1 picoCurie of Sr-90 per gram calcium, and 11,840 times less than the dose from one-year exposure to ten pCi/g Ca. The reason for this huge discrepancy is that in the calculation of the whole body dose by the NRC, Sr-90 is no longer measured in the environmental samples collected around nuclear plants such as milk, as it used to be required in the 1960s and 1970s.

The seriousness of this failure to measure Sr-90 in the environmental samples and thus to ascertain the actual dose to bone and bone marrow, where the cells of the immune system originate, can be illustrated by the fact that laboratory studies by Stokke et. Al. (Acta Radiologica 7:321:1968) showed that significant reduction in the white cells of the immune system were measured at doses of the order of only 10 mr produced by Sr-90.

By only calculating the total body dose *theoretically* from measurements of the stack releases into the air and not from actual measurements of environmental samples, as done in the Annual Radioactive Effluent Release Reports for the Turkey Point Units 3 and 4 for recent years (1999, 2000), only extremely small values were arrived at, such as 0.0000011 mr per year due to airborne releases – millions of times less than the actual doses based on measured concentrations found in human teeth.

Thus, by no longer requiring Strontium-90 to be measured, either in environmental samples or humans, it has been possible for the NRC to characterize the radiation threat from the Turkey Point plant and all other nuclear power reactors as "microscopic." In this way, the NRC obscures the true magnitude of the threat to human life and health presented by fission products released into the environment.

APPENDIX 8. STATEMENT BY DR. VICTOR W. SIDEL AND DR. H. JACK GEIGER ON RPHP BABY TOOTH STUDY

After reviewing the initial findings of the Tooth Fairy Project in 1999, Dr. Victor W. Sidel, past president of the American Public Health Association, and Dr. H. Jack Geiger, past president of Physicians for Social Responsibility, stated:

"If the levels of Strontium-90 in children's teeth and the variations in levels by geographic area reported in this study are validated by appropriate repetition, these findings would appear to justify intensive follow-up and continuing large-scale surveillance. Given the biological risk associated with body burdens of even small amounts of long-lived radioactive Strontium-90, it would be prudent to regard these findings as suggestive of a potential threat to human health."

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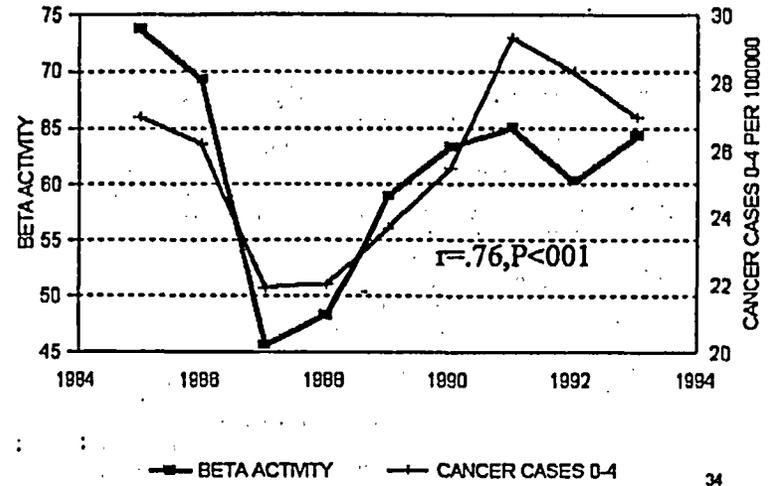
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DADE CTY BETA AND CANCER 0-4 YEARS
3 YEAR MOVING AVERAGES, 3 YEAR LAG

Fig 1



TPD 73



ALEX PENELAS
MAYOR

OFFICE OF THE MAYOR
MIAMI-DADE COUNTY, FLORIDA

Good Evening,

I would like to welcome the members of the Nuclear Regulatory Commission (NRC) to Miami-Dade County and thank them, again, for their professionalism and commitment on this very important endeavor. I have received and reviewed a copy of the Draft Supplemental Environmental Impact Statement, which was prepared after much careful analysis by the NRC. I am pleased with their assessment and agree that renewing the operating license of the Turkey Point Nuclear Plant is the most positive environmental option to help meet the growing energy needs of South Florida.

I would like to explain why I support the license renewal of the Turkey Point Nuclear plant:

- Miami-Dade County is a growing community with increasing demands for electricity. By approving the license, Turkey Point Nuclear Plant will be able to provide South Florida with safe, clean, reliable and economical electricity well into the 21st century.
- Turkey Point Nuclear Plant is one of the safest and best-run nuclear plants in the country as judged by its regulators and its peers. It has consistently received top ratings from the Nuclear Regulatory Commission and by the Institute of Nuclear Power Operations.
- Miami-Dade County has a very strong record of its commitment to protect its natural environment. The Turkey Point employees have developed a unique stewardship of the environment in the region surrounding the Plant by preserving the natural habitat, which provides homes to many endangered species, including the American Crocodile.
- Miami-Dade County is a diverse community with many needs. The Turkey Point employees are caring neighbors to communities surrounding the Plant. Its employees make significant contributions to community and civic organizations.
- Turkey Point Nuclear Plant is the largest private employer in the region with over 800 employees and its purchase of local services helps sustain the economy of South Miami-Dade County.

I appreciate being allowed to enter these comments into the record, which enables me to demonstrate why I support Turkey Point Nuclear Plant's license renewal application. I am available for any questions at (305) 375-5071. Thank you.

Sincerely,

Alex Penelas
Mayor

HL012770469

STEPHEN R. CLARK CENTER, 111 N.W. FIRST STREET, SUITE 2910, MIAMI, FLORIDA 33128-1994 • (305) 375-5071 • FAX (305) 375-3618

TPD 74

LEONARD S. ANTHONY
14820 Naranja Lakes Blvd.
Apt. PH
Homestead, FL 33032
Phone 305 245 7011

July 17, 2001

Testimony in support of the FPL application for renewal of Operating License

I am Leonard S. Anthony, and I reside at 14820 Naranja Lakes Boulevard, Homestead. This is actually the Naranja area of unincorporated Miami-Dade County located within the ten-mile radius of the Turkey Point Power Plant in South Florida.

73-1

1. I am testifying on my own behalf, at this time. As a resident in this area, I have no personal safety concerns as I believe, and note that the Supplement 5, regarding Turkey point Operating Units 3 and 4 to the "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" assigns a 'small' significance to the potential for a nuclear accident. The plant has been recognized as having a stellar performance record in the past decade of years with little anticipation of degradation of this status in the foreseeable future.

73-2

2. It has been recognized that refurbishment has occurred subsequent to Hurricane Andrew in 1992 and no further recommended extensive refurbishment is noted as anticipated or recommended in the supplement to the GEIS as necessary to protect the environment.

73-3

3. Although the Supplement to the GEIS does not address need, it should be noted that alternative fuel "peaker" electricity generating plants have already initiated discussions with multiple local municipalities or communities for the construction of new plant(s) within our immediate geographical areas. Albeit that the current electrical power production at Turkey Point Power Plant (all four (4) units) appear to serve our entire immediate and foreseeable future near-term needs, South Miami-Dade County affords the most logical areas for further residential and light industrial development. Coupled with the uncertainties about the future redevelopment of the excess lands at the former Homestead Air Force Base and the reasonably available of undeveloped and/or agricultural lands in the area, there will be a continuing and probable greater need for all the electrical power currently generated with a need for future plant(s) or capacity to serve the still growing community. If this power need, current and future, is not conveniently met by existing plants, including Turkey Point units 3 and 4, there will then be a reliance on new fossil fuel burning plants at several new locations whose environmental operational pollution potentials are far more portentous than nuclear generated power will generate. With the prospects of new nuclear powered electrical plants being built and licensed being almost nil in this country, we have only lost plants not gained new ones in the past decade, one must seemingly rely on only fossil fuel electrical generating plants.

73-4

73-5

73-6

74-1

- 4. We, who are interested and concerned about the sensible inevitable development in our area, must seek to preserve the good non-polluting electrical power plants rather than look to replace them with far more potentially environmental polluting plants at several disparate locations.
- 5. The anticipation is that Units 3 and 4 at the Turkey Point Operating Plant will continue to be maintained in their excellent operating condition and that their outstanding safety operating record can be extended throughout the requested licensure period and through even another subsequent licensing period as Supplement 5, Regarding Turkey Point units 3 and 4 to the Generic Environmental Impact Statement forecasts.
- 6. Thank you for this opportunity to appear before you and elaborate my perceptions of the continued need for the operation of these critical electrical power generating units at Turkey Point. I support and endorse the relicensure of the units at Turkey Point.

Leonard S Anthony
 Leonard S Anthony
 Apartment PH
 14820 Naranja Lakes Boulevard
 Homestead, Florida 33032-8338

TPD 75

NARANJA LAKES CONDOMINIUM NO.5, INC.
 14840 Naranja Lakes Boulevard
 Homestead, FL 33032
 Phone 305 247 0292
 Fax 305 247 4085

July 17, 2001

TESTIMONY
 FPL LICENSE RENEWAL -2001

- 1. I am Leonard S Anthony, and I reside at 14820 Naranja Lakes Boulevard, Homestead, Florida 33032. I am here in my role as President of the Board of Directors of our Condominium Association. We are a local Association of four mid-rise buildings comprising 241 units or apartments. Our Board represents the 241 families that own these apartments. This is the second presentation we have made, the first being in December 2000.
- 2. At our June meeting of the Board of Directors, I was authorized as the representative of the Board to extend our support and endorsement of the FPL application for license renewal that they are seeking.
- 3. We have been here for almost thirty years, survived and rebuilt after Hurricane Andrew in 1992 when most of our immediate neighborhoods were totally devastated – and still are wastelands. We look forward to the future redevelopment of those devastated neighborhoods and note the need for ample power to support that redevelopment. At the December 2000 scoping hearing, we recognized the need for ample electrical power in the near-term and in the future. The recent arrival of potential projects for electrical power "peaker" plants using fossil fuels emphasizes this need. With their added potential for usage of federal 25% exemption emission permits, we can expect much acid rain should they ever be authorized and constructed- not so with nuclear power
- 4. We, the Board, note with interest and state the following:
 - A. The electrical service has been provided at a reasonable and relatively stable cost. Compare this to the recently wildly fluctuating costs of fossil fuels –especially petroleum and natural gas-generated electrical power and the chaos existing in California and elsewhere in the West.
 - B. FPL has not operated detrimentally to the environment even in their periods of heavy power generation as the Supplement 5 regarding the Turkey Point Operating Units 3 and 4 of the Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants (GEIS). Their cooling canals do not actively interface with the immediately adjacent Biscayne Bay in that they use self contained land-locked cooling canals, incidentally providing breeding grounds for crocodiles and other wildlife in their extensive land holdings and generally protecting the environment, and being community sensitive to even permitting use of selected lands for recreation, etc.

74-2

75-1

75-2

75-3

Appendix A

C. FPL has an impressive safety record -- many times cited by the NRC -- as one of the safest and most reliable plants in the U.S.

75-4

7. We, the Board of Directors of Naranja Lakes Condominium Number 5, on behalf of the 241 apartment owners recommend the relicensure of FPL when their current license expires, so that they may continue to be the excellent community asset that they have been throughout our existence and on into the future.

75-5

End

*For the Board
 Suzanne S. Cephalony
 President, Bd of Directors*

TPD 76

Johnnie Randles

My name is Johnnie Randles and I have lived in homestead for 18 + years. Located about 24 miles south of Miami and 9 miles east of Homestead their is approximately 22,000 acres and is home to Turkey Point Plants.

This is my first time to come before the NRC to voice my support for the Turkey Point license renewal.

76-1

What would we not have with out this plant?

- A wild life reserve
- Power for our homes
- A cleaner environment
- Jobs to support the community
- support for hundreds of business in the way of jobs and material that is purchased.
- Cheaper electrical bills

76-2

What have we gained since this plant has been here?

Financial security for employees, contractors and support business who employ several thousand people.

76-3

A stable cheaper power for our homes and business.

- ◆ Turkey Point is the lowest cost producer of electricity in the FPL system.

76-4

- Look at what happened in California, it's not what we want! We need electricity. . . it drives our economy; it preserves and expands our quality of life; and it can shape our future
 - * Florida energy demands are growing about 2 percent annually.
 - * Electricity provided from Turkey Point powers an area from Miami International Airport and south.
 - * Each unit produces 693 Million Watts of electricity.
- . And that means we need the power from Turkey Point Nuclear Power Plant.

76-5

We have Protection of the some of the last salt water crocks and rare bird of south Florida.

76-6

January 2002

✓ There are many reasons why the plant should continue operating, but all those reasons would disappear if the plant didn't prove itself in one area and that's safety.

*Turkey Point is rated as one of the safest and most reliable nuclear power plants in the US and world. I know this to be true, I work there and feel safe doing so.

• Planning for the future is what renewing the Turkey Point license is all about. But it's about more than just the plant's future. It's about renewing the community's future as well. There are vital connections that link Turkey Point to our economy, to a cleaner environment, and most importantly, to the human network in our churches, school and youth organizations.

• , it's power. . . it's people. . . are what makes the promise of a better future. The plant is already here – let's use an existing resource to meet the community needs. I support the renewal of the Turkey Point license for safe, clean and affordable electricity.

A-311

NUREG-1437, Supplement 5

TPD 77

76-7

Jeb Bush
 Governor



Robert Dmoka, M.D.
 Secretary

July 17, 2001

Dear Interested Parties:

Much concern has been related to us about statements made by Radiation and Public Health Project, Inc. (RPHP) in a March 28, 2001 announcement. RPHP has implied that there are large increases over time in cancer rates in southeastern Florida counties and they attribute these increases to radiation exposure from the Turkey Point and St. Lucie power plants.

77-1

The Florida Department of Health takes these assertions seriously and has reviewed the data used by RPHP regarding cancer rates in southeast Florida. Using this data to reconstruct calculations and graphing the results, we have not been able to identify any unusually high rates of cancers in these counties. Attached is the Bureau of Environmental Epidemiology report addressing the data and the RPHP findings.

76-8

Should you need any further clarification, please feel free to contact me at (850) 245-4299.

Sincerely,

David R. Johnson
David R. Johnson, M.D., M.S.
Bureau Chief of Environmental Epidemiology

Cc: Bill Parzak, DOH Communications

4052 Dold Cypress Way, Bin #A08



Tallahassee, FL 32399-1708

Appendix A

Report Concerning Cancer Rates in Southeastern Florida

By

Bureau of Environmental Epidemiology
Division of Environmental Health
Florida Department of Health

This report addresses statements made by the Radiation and Public Health Project, Inc. (RPHP) in a March 28, 2001 announcement regarding cancer rates in southeast Florida. These statements implied that there are large increases over time in cancer rates in Southeastern Florida counties and attributes these increases to radiation exposure from the Turkey Point and St. Lucie power plants. Each power plant has 2 nuclear reactors on site. The first Turkey Point reactor began operation in December 1972. The second Turkey Point reactor started operating in September 1973. The first St. Lucie reactor began operating in December 1976; the second in August 1983.

Members of the Bureau of Environmental Epidemiology, Division of Environmental Health, Florida Department of Health discussed with a representative from RPHP the manner in which RPHP analyzed data as a basis for the statements. From this discussion, members of the Bureau of Environmental Epidemiology reconstructed the RPHP calculations of cancer rates using the data and data sources provided by the RPHP. These sources included Cancer Mortality Statistics as made available through CDC Wonder, the Florida Cancer Data System (FCDS), and the National Cancer Institute (NCI). Data from the Surveillance, Epidemiology, and End Results (SEER) based within the NCI was also used in evaluating incidence rates. The data and calculations were then reviewed and interpreted by epidemiologists in the bureau.

In the following sections, statements made by the RPHP regarding cancer rates are followed by DOH findings and interpretations. Because health statistics data are often expressed as units per thousand population or in the case of cancer, per hundred thousand population, one has to be careful in interpreting trends. Changes in rates look larger in smaller counties due to the lower population figures (in some counties, less than 100,000). In these cases, the rates are greatly influenced by the lower population counts. When the changes in rates are expressed as percentages, these changes will appear to be even more magnified.

RPHP Statement 1: "In 1983-84, the first two years that the St. Lucie 2 reactor operated, infant deaths in St. Lucie rose 35.3%."

Bureau of Environmental Epidemiology Calculations and Interpretations: Our analysis does not confirm this statement. Figure 1 shows that the infant death rates decreased after the time that the second St. Lucie reactor started operating. The rates fluctuated in the following years and a general declining trend is observable. These fluctuations in rates are often simply a result of very low counts both in the numerator and denominator when rates are being computed. A comparison between the trend plot of St. Lucie and U.S. infant mortality rates which is smoother because of the larger numbers involved confirms this statement. Overall, this data does not support the alleged relationship between the operation of the second St. Lucie reactor and an increase in infant mortality rates.

RPHP Statement 2: "In 1983-84, when the Turkey Point reactors were mostly closed for repairs, infant deaths in Broward and Dade Counties fell 19.1% compared to only 8.4 in the U.S. The following two years, when Turkey Point returned to full power, the local infant death rose 1.2%."

Bureau of Environmental Epidemiology Calculations and Interpretations:

The two-year average infant mortality rate fell from 13.32 per 1,000 in 1981-82 to 10.78 per 1,000 in 1983-84 (for a decrease of 19%). From 1983-84 to 1985-86 it increased to 10.91 per 1,000 (or an increase of 1.2%). But in 1987-89, it decreased by 1.2%. Figure 2 indicates that while the reactors continue to operate, the infant mortality rate has declined in these counties. The decline follows a similarly declining pattern in the state and the country.

RPHP Statement 3: "Since 1950, (white female) breast cancer mortality rose significantly in the counties near Turkey Point and St. Lucie reactors (up 26% near Turkey Point, up 55% near St. Lucie, compared to a 1% US increase)."

Bureau of Environmental Epidemiology Calculations and Interpretations:

To support this statement, the RPHP presented a table of age-adjusted white female breast cancer mortality rates of 10 selected counties, the state of Florida and the U.S. The RPHP table is appended as Table 1. These 10 counties are part of 18 counties that RPHP has stated to be within a range of exposure to emission from two power plants that are located in Turkey Point and St. Lucie. The 10 counties were divided into two groups: the St. Lucie group and the Turkey Point group. We assume that this grouping is in accordance with their proximity to the power plants. The St. Lucie group was composed of the following counties: St. Lucie, Brevard, Indian River, Okeechobee, and Ocoola. The Turkey Point group was composed of Dade, Monroe, Broward, Palm Beach and Collier counties.

When accessing the data provided by the RPHP we found that CDC Wonder only provides mortality rates starting from 1979. The RPHP representative then informed us that the data for calculating the mortality rate for earlier time periods (1950-1954) was obtained separately from the National Cancer Institute (NCI). We asked RPHP for a copy of their data or a copy of their data request from NCI so we could make a similar request. We did not receive either from RPHP and were told to deal directly with NCI. The data we obtained from NCI was composed of rates in five-year increments (1950-54, 1955-59, etc. until 1990-1994). Although requested, NCI did not provide rates for counties that had less than 6 breast cancer deaths over a five-year period. We therefore did not receive cancer rates for St. Lucie for 1950-54; Okeechobee from 1950-54 to 1960-69; and Collier from 1950-54, to 1960-64. We also requested but did not receive the combined rates of the St. Lucie group and the Turkey Point group.

Using data from NCI, we recalculated the percentage changes in breast cancer mortality rates in those counties in the St. Lucie group and the Turkey Point group for the various five-year time periods. We could not recalculate the RPHP claim of 221% and 263% increases in the breast cancer mortality rate in St. Lucie from 1950-54 to 1980-84 and from 1950-54 to 1985-89, respectively, due to inadequate data as described above. We also could not recalculate the RPHP claims of a 55% increase for the St. Lucie group and a 26% increase for the Turkey Point group for the same reason. For counties where we had data, our recalculated percentage results did not significantly differ. However, RPHP assumed that breast cancer mortality rates increased in a linear pattern from 1950 to the present time. To verify this assumption, we plotted the breast cancer mortality rates in each of the 10 counties over time. Figures 3-12 show that the rates in these 10 counties actually fluctuate over time rather than increasing in a linear manner. The fluctuations in smaller counties are wider than those in larger counties suggesting

3

that these rates are influenced by the size of the underlying denominator. In other words, percent changes become magnified in smaller counties due to the small number of cases and population being analyzed. Since rates for cancer are reported per 100,000, in age groups or counties with smaller populations (less than 100,000) even one case will make a big difference in the rates, magnifying the fluctuations in trend plots. Figures 3-12 also show that, for most time periods, the rates of each individual county (for the periods which we have data) are consistently lower than U. S. rates. Generally, the rates in the 10 counties appear to fluctuate around Florida rates and increase at about the same pace as the overall Florida state rates.

It is important to note that Table 1 shows that the breast cancer age-adjusted mortality rates in southeastern Florida (as summarized by 18 counties) for the time period 1950-54 to 1985-89 are comparable to the rest of the state of Florida and consistently lower than the U.S. rates.

RPHP Statement 4: "In the 1990s, the cancer mortality rate in young adults age 15-34 in these five southeastern counties has risen, in contrast to a decline in the US. Increases were particularly large for breast cancer, bone and blood cancer each especially sensitive to radioactivity."

Bureau of Environmental Epidemiology Calculations and Interpretations:**Breast Cancer:**

Breast cancer mortality rates among all women aged 15-34 were graphed by year in Figure 13. Observation of this graph does not confirm the statement regarding rising breast cancer mortality in this age group. In 1990, the breast cancer mortality rate in the 15-34 age group in these five counties was 2.71 per 100,000. In 1998, it was 2.05 per 100,000. In between these years, the rates fluctuated from 2.39 per 100,000 (1991) to 1.28 per 100,000 (1993). In 1990, the US rate was 1.62 per 100,000 and in 1998, it was 1.36 per 100,000. Between these years, the rates have fluctuated from 1.68 per 100,000 (1991) to 1.41 per 100,000 (1997).

Bone Cancer

Figure 14 shows an annual fluctuating pattern in the mortality rate for bone cancer in the 15-34 age group in these counties. Observation of this graph does not confirm the statement regarding rising bone cancer mortality in this age group. In 1990, the bone cancer mortality rate in the 15-34 age group in these five counties was 0.16 per 100,000. In 1998, it was 0.40 per 100,000. In between these years, the rates fluctuated from .08 per 100,000 (1991) to 0.64 per 100,000 (1997). In 1990, the US rate was .29 per 100,000. In 1998 it was 0.34 per 100,000. Between these years, the U.S. rates have fluctuated from 0.31 per 100,000 (1993) to 0.36 per 100,000 (1997). Bone cancer deaths in this age group are quite rare and expressing changes as percentages masks the low numbers involved.

4

Blood Cancers

Blood cancers as defined by the RPHP include all leukemias and lymphomas (ICD-9 codes 200.0 to 208.9). In 1990, blood cancer mortality rate in the 15-34 age group in these five counties was 2.63 per 100,000. In 1998, it was 3.19 per 100,000. Between these years, the rates fluctuated from 2.81 per 100,000 (1994) to 4.38 per 100,000 (1997). In 1990, the US rate was 2.92 per 100,000. In 1998 it was 2.37 per 100,000. In between these years, the rates have fluctuated from 2.52 per 100,000 (1997) to 2.95 per 100,000 (1992).

Figure 15 shows that starting in 1994, the appearance of a slight upward trend can be noted in the age specific blood cancer mortality rates in the five counties. During the same period, the U.S. rates appear to be declining. Since this is relatively recent, we cannot be certain if this increase will be sustained or if it represents expected fluctuations in rate amplified by the relatively small underlying population. Based on currently available data, epidemiologists in the Bureau of Environmental Epidemiology calculated the age specific mortality rate in 1999 to be 2.83 per 100,000, a decrease in the rate from 1998.

RPHP Statement 5: "From the early 1980s to the late 1990s (actually "early 1990" in the RPHP statement but corrected to "late 1990" by the RPHP representative), cancer incidence in children under 10 rose 35.2% in five southeastern counties (Broward, Dade, Martin, Palm Beach, and St. Lucie), compared to a 10% rise in the US."

Bureau of Environmental Epidemiology Calculations and Interpretations: Figure 16 shows that from early 1980 (defined by the RPHP representative as 1981 to 1983) to late 1990 (defined as 1996 to 1998) the childhood cancer incidence rates for southeast Florida rose from 15.35 to 20.27 per 100,000 or 32%, when comparing just these two time periods. A simple comparison between the two time periods is misleading due to the apparent annual fluctuations. For the SEER regions, incidence rate for the same two time periods rose 14.6% (from 14.05 to 16.1). Although the incidence rates in these 5 counties in southeast Florida are slightly higher than the SEER rates, they are not higher than the incidence rates for the rest of Florida, rather, they are consistent with childhood cancer incidence for 0-9 year olds in the rest of the state of Florida. This data does not suggest an increased incidence of childhood cancer unique to southeast Florida.

Additionally, based on currently available data, epidemiologists in the Bureau of Environmental Epidemiology calculated the 1999 cancer incidence rate for age 0-9 year-olds for these 5 southeastern counties to be 16.4 cases per 100,000, a rate that is lower than 1998. The most recent available U.S. cancer data is for 1998, which shows that the cancer incidence rate for this age group is 16.6 cases per 100,000.

RPHP Statement 6: "In the same period, from the early 1980s to the late 1990 (actually "early 1990" in the RPHP statement but corrected to "late 1990" by the RPHP representative), an enormous 325.3% increase in childhood cancer took place in St. Lucie County increasing the current rate in this area to more than double the national average."

Bureau of Environmental Epidemiology Calculations and Interpretations:

It appears that the RPHP is basing their statement of an increase by comparing only two points in time, the aggregate rates from 1981-83 to those of 1996-98. However such a comparison is only valid if the relationship of rates and time from 1980 to late 1990 is linear. Figure 17 shows that an assumption of a linear relationship is not tenable. Rather, there are large fluctuations in rates at different points in time. The childhood cancer rates in St. Lucie fluctuate by year with some years showing lower rates than the Florida and national rates, and some years higher. A simple comparison between two points in time is misleading.

As previously indicated, wider fluctuations in rates are observed in smaller counties due to smaller underlying populations. In this case, the population is even smaller than the county population since only children ages 0 to 9 in St. Lucie are being examined.

Fluctuations in annual cancer rates, rather than a sustained increase, occur in St. Lucie County after a second reactor was added to the St. Lucie plant in 1983. Consistently higher rates would have been expected if the assumption of increased risk with an additional reactor were true. In this case, no sustained increased rate is observed.

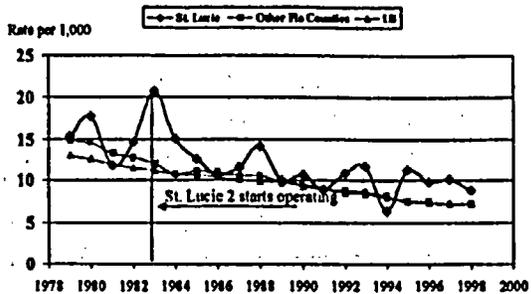
Based on currently available data, epidemiologists in the Bureau of Environmental Epidemiology calculated the 1999 cancer incidence rate for age 0-9 year-olds in St. Lucie County to be 4.4 cases per 100,000, showing a marked decreased rate and continuing the pattern of fluctuation of rates from 1998 to 1999.

Summary:

In summary, we reconstructed the calculations made by the RPHP using the same data from which they base their claims. RPHP claims that there are striking increases in cancer rates in southeastern Florida counties and attributes these increases to radiation exposure from nuclear reactors. Using this data to reconstruct calculations and graphing our findings, we have not been able to identify unusually high rates of cancers in these counties. As we would expect, just by chance, some county rates appear higher than state and national trends and some appear lower. These rates fluctuate from year to year and in some situations, large fluctuations occur with a small number of cases and small underlying county populations. One has to use careful scientific and objective evaluation of these fluctuations to avoid misinterpretation. Careful analysis and observation of the data presented here does not support the alarming claims made by the RPHP regarding cancer mortality rates and trends in southeastern Florida counties when compared with the rest of the state of Florida and the nation.

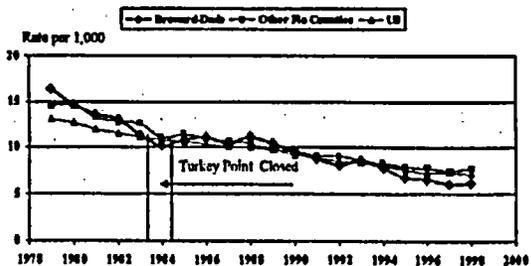
Appendix

Figure 1. Infant Mortality Rates in St. Lucie County, Other Florida Counties and the US, 1979-1998



St. Lucie 1: 12/76; Turkey Point 3: 12/72; Turkey Point 4: 9/73
 Source: CDC Wonder Infant Mortality

Figure 2. Infant Mortality Rates in Broward-Dade, Other Florida Counties and the US, 1979-1998



St. Lucie 1: in operation since 12/76; St. Lucie 2: since 8/83; Turkey Point 3: since 12/72; Turkey Point 4: since 9/73
 Source: CDC Wonder Infant Mortality

Table 1. Age Adjusted Breast Cancer Mortality Data Provided to DOH by the Radiation and Public Health Project Inc.

St. Lucie 1 and 2 and Turkey Point 3 & 4

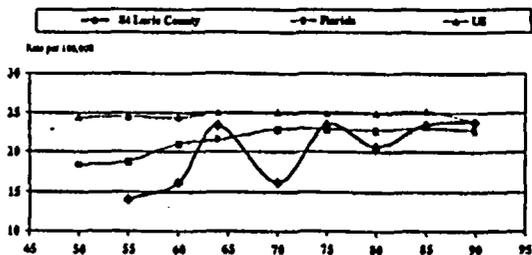
WHITE FEMALE BREAST CANCER MORTALITY RATES 1980-89
 COUNTIES WITHIN 50 AND 100 MILES OF
 ST. LUCIE AND TURKEY POINT

FIPS Code	County	ST	DEATHS PER 100,000							
			Age-Adjusted Mortality Rates		Percent Change		Number of Deaths			
			1980-84	85-89	80-84	85-89	80-84	85-89		
ST LUCIE										
12111	ST LUCIE	FL	6.5	20.7	23.5	221%	263%	3	74	112
12008	BREVARD	FL	18.8	24.4	26.9	30%	43%	18	262	361
12081	INDIAN RIVER	FL	17.2	19.3	24.5	12%	42%	6	67	97
12083	OKEECHOBEE	FL	30.1	22.3	13.3	-28%	-56%	2	14	9
12097	OSCEOLA	FL	14.4	27.1	24	89%	87%	10	62	70
TOTAL 6 COUNTIES			16	23.3	24.8	48%	65%**	37	479	648
TURKEY POINT										
12025	DADE	FL	20.1	24	23.3	20%	16%	302	1,447	1,474
12087	MONROE	FL	14.3	21	21.2	47%	49%	7	51	52
12011	BROWARD	FL	15	22.8	24.1	52%	60%	52	1,095	1,293
12089	PALM BEACH	FL	18.8	24	23.9	44%	44%	58	696	813
12021	COLLIER	FL	22.8	23.5	21.5	3%	-6%	3	95	135
TOTAL 4 COUNTIES^(*)			18.8	23.6	23.6	26%	26%**	422	3,384	3,987
TOTAL 18 COUNTIES			18.3	23.4	23.3	28%	27%**	631	4,395	5138
TOTAL FLORIDA			18.4	22.8	22.8	24%	24%	1,354	9,070	10,783
TOTAL UNITED STATES			24.4	24.9	24.6	2%	1%	91,392	167,803	178,668

**P<.001

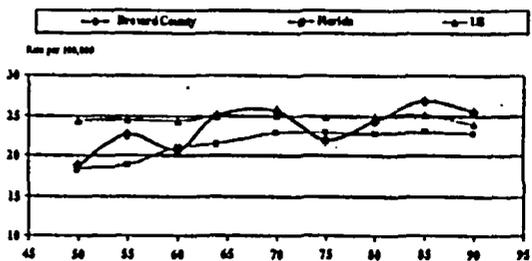
NOTE: This table was reproduced exactly as provided to the D^H
^(*) During a conference call, the RPHP representative corrected this as actually including the 5 counties above

Figure 3. Five-year Age Adjusted Mortality Rates for Breast Cancer in White Women, St. Lucie County, 1950-54 to 1990-94



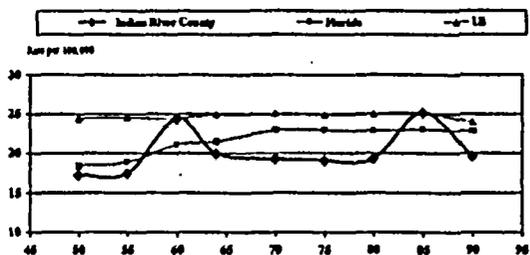
The numbers on the time axis represent the beginning of the periods. Thus, 50 stands for the period 1950-54, ..., 90 stands for the period 1990-94.
 Source: National Cancer Institute

Figure 4. Five-year Age Adjusted Mortality Rates for Breast Cancer in White Women, Brevard County, 1950-54 to 1990-94



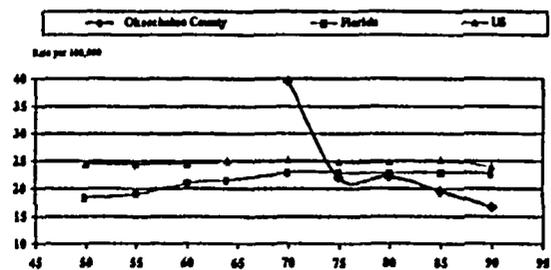
The numbers on the time axis represent the beginning of the periods. Thus, 50 stands for the period 1950-54, ..., 90 stands for the period 1990-94.
 Source: National Cancer Institute

Figure 5. Five-year Age Adjusted Mortality Rates for Breast Cancer in White Women, Indian River County, 1950-54 to 1990-94



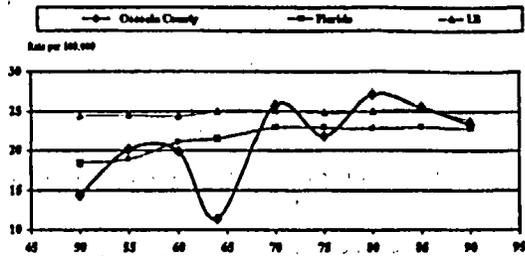
The numbers on the time axis represent the beginning of the periods. Thus, 50 stands for the period 1950-54, ..., 90 stands for the period 1990-94.
 Source: NCI Mortality rates.

Figure 6. Five-year Age Adjusted Mortality Rates for Breast Cancer in White Women, Okeechobee County, 1950-54 to 1990-94



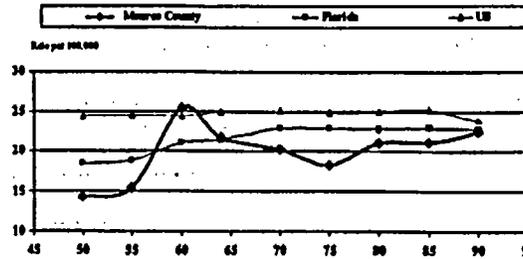
The numbers on the time axis represent the beginning of the periods. Thus, 50 stands for the period 1950-54, ..., 90 stands for the period 1990-94.
 Source: National Cancer Institute

Figure 7. Five-year Age Adjusted Mortality Rates for Breast Cancer in White Women, Osceola County, 1950-54 to 1990-94



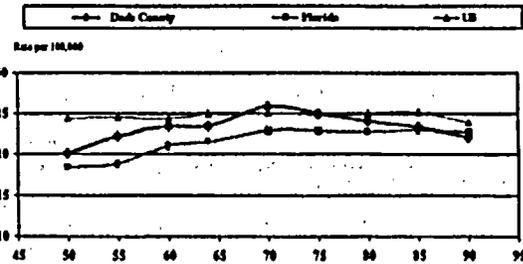
The numbers on the time axis represent the beginning of the periods. Thus, 50 stands for the period 1950-54, ..., 90 stands for the period 1990-94.
 Source: National Cancer Institute

Figure 9. Five-year Age Adjusted Mortality Rates for Breast Cancer in White Women, Monroe County, 1950-54 to 1990-94



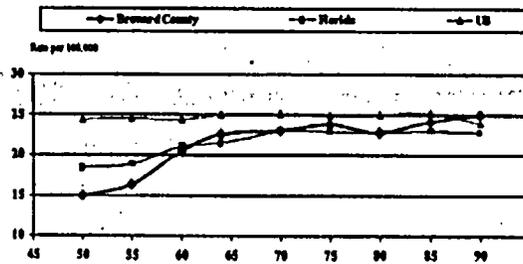
The numbers on the time axis represent the beginning of the periods. Thus, 50 stands for the period 1950-54, ..., 90 stands for the period 1990-94.
 Source: National Cancer Institute

Figure 8. Five-year Age Adjusted Mortality Rates for Breast Cancer in White Women, Dade County, 1950-54 to 1990-94



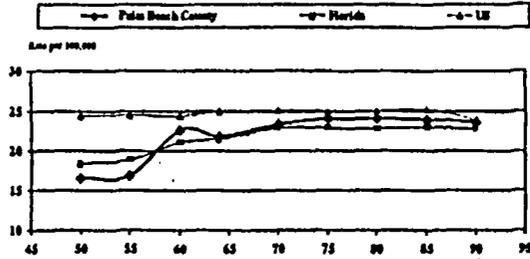
The numbers on the time axis represent the beginning of the periods. Thus, 50 stands for the period 1950-54, ..., 90 stands for the period 1990-94.
 Source: National Cancer Institute

Figure 10. Five-year Age Adjusted Mortality Rates for Breast Cancer in White Women, Broward County, 1950-54 to 1990-94



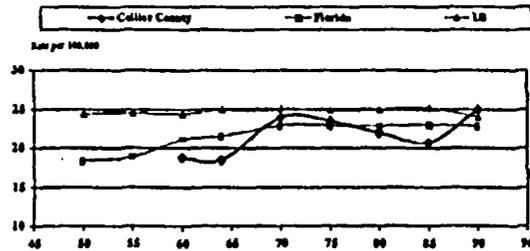
The numbers on the time axis represent the beginning of the periods. Thus, 50 stands for the period 1950-54, ..., 90 stands for the period 1990-94.
 Source: National Cancer Institute

Figure 11. Five-year Age Adjusted Mortality Rates for Breast Cancer in White Women, Palm Beach County, 1950-54 to 1990-94



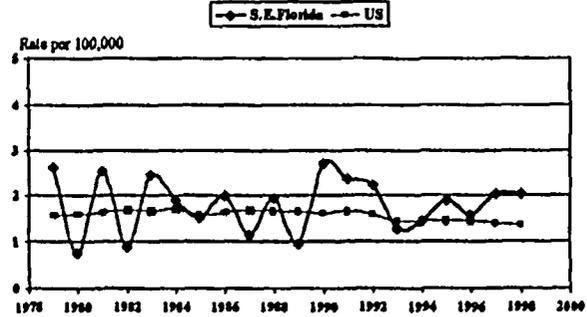
The numbers on the time axis represent the beginning of the periods. Thus, 50 stands for the period 1950-54, ..., 90 stands for the period 1990-94.
 Source: National Cancer Institute

Figure 12. Five-year Age Adjusted Mortality Rates for Breast Cancer in White Women, Collier County, 1950-54 to 1990-94



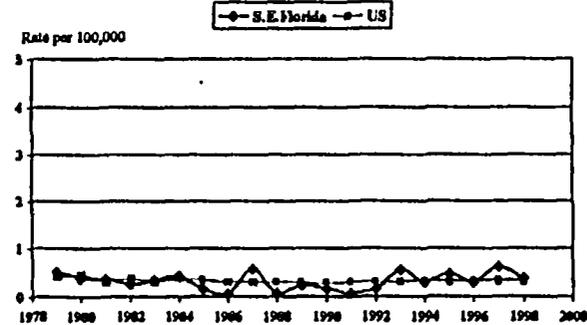
The numbers on the time axis represent the beginning of the periods. Thus, 50 stands for the period 1950-54, ..., 90 stands for the period 1990-94.
 Source: National Cancer Institute

Figure 13. Breast Cancer Age-Specific Mortality Rates in All Women Age 15-34, 1981-1998



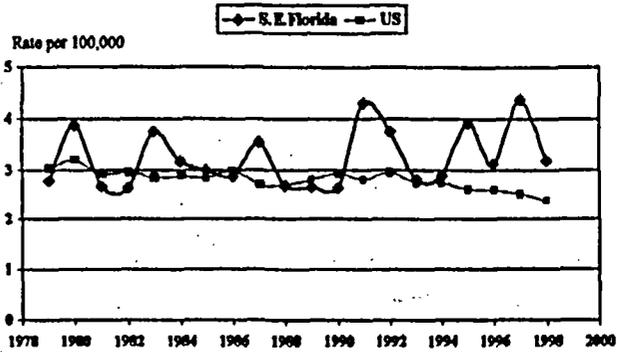
Note: S.E. Florida include: Broward, Dade, Palm Beach, Martin and St. Lucie Counties.
 Source: CDC Wonder Mortality rate for US and S.E. Florida.

Figure 14. Bone Cancer Age-Specific Mortality Rates in All People Age 15-34, 1981-1998



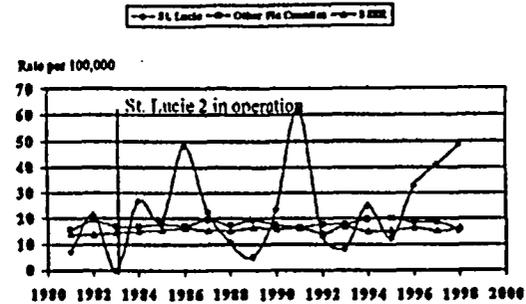
Note: S.E. Florida include: Broward, Dade, Palm Beach, Martin and St. Lucie Counties.
 Source: CDC Wonder Mortality rate for US and S.E. Florida.

Figure 15. Blood Cancer Age-Specific Mortality Rates in All People Age 15-34, 1981-1998



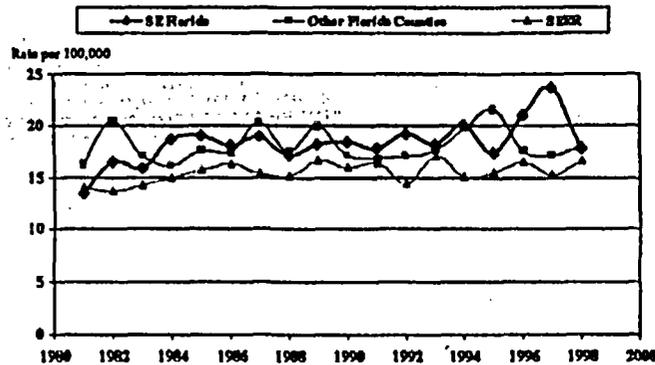
Note: S.E. Florida Include: Broward, Dade, Palm Beach, Martin and St. Lucie Counties.
 Source: CDC Wonder Mortality rate for US and S.E. Florida.

Figure 17. All Cancers Age-Specific Incidence Rates in Children Age 0-9, 1981-1998



Source: CDC Wonder Mortality rate for US and S.E. Florida.

Figure 16. All Cancers Age-Specific Incidence Rates in Children Age 0-9, 1981-1998



SE Florida Includes: Dade, Broward, Palm Beach, Martin and St. Lucie Counties.
 Source: FCDS incidence data released to J. Mangano and CDC population estimates.

TPD 78



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

RECEIVED

2001 SEP 13 PM 3:20

Rules and Directives
Branch
USNRC

44 FR 30807

4/18/21

3

August 27, 2001

4EAD

Chief
Rules Review and Directives Branch
Division of Administrative Services
Mailstop T 6 D59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

RE: EPA Review and Comments on
Draft Generic Environmental Impact Statement for
License Renewal of Nuclear Plants, Supplement 5
Regarding Turkey Point Units 3 and 4, (DGSEIS)
CEQ No. 010220

Dear Chief:

The U.S. Environmental Protection Agency (EPA) reviewed the document entitled "Draft Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Turkey Point, Supplement 5, Units 3 and 4," (DGSEIS), pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. The purpose of this letter is to provide EPA's comments regarding the DGSEIS.

Turkey Point is a nuclear powered, electric generating facility that has process water discharges regulated by the National Pollutant Discharge Elimination System (NPDES) program. Based upon the information provided in the DGSEIS, the document received an "EC-2" rating. That is, there are environmental concerns on some aspects of the proposed project, and more information is needed. Specifically, clarification is needed regarding environmental impacts of the existing recirculating cooling canal system. More detail is also needed regarding the facility's compliance with 40 CFR Part 112, regarding storage of petroleum products. The attached comments detail our concerns.

78-1
78-2

Amplitude = ADM-013

E-RIDS = ADM-03
Add = J.H. Wilson (JHWL)

Internet Address (URL) = http://www.epa.gov
Postmaster: Please do not change the page number on this document.

Thank you for the opportunity to comment on this DGSEIS. We look forward to reviewing the final document. If you have any questions or require more information, please contact Ramona McConney of my staff at (404) 562-9615.

Sincerely,

Heinz J. Mueller, Chief
Office of Environmental Assessment

EPA Review and Comments on
Draft Generic Environmental Impact Statement
License Renewal of Nuclear Plants, Supplement 5
Regarding Turkey Point Units 3 and 4 (DGSEIS)

Alternatives:

As described in the DGSEIS, the environmental impacts of continuing or renewing the license for Turkey Point Units 3 and 4 has fewer environmental impacts than the alternatives. The alternatives described in the document include using fossil fuel power generation processes, constructing a new nuclear facility, or implementing the No-Action Alternative.

Transmission Lines:

Page 4-11; Section 4.2 Transmission Lines: "Herbicides are used occasionally, primarily applied to individual trees or shrubs to prevent re-sprouting, although broadcast applications are used as general weed control in some of the urban and suburban areas". The GSEIS should specify the types and quantities of herbicides applied, and the alternatives to spraying plants with defoliant.

Similarly, the FGSEIS should include details regarding broadcast applications for weed control (types, frequency, quantities, alternatives to chemical applications, etc.). Improperly applied herbicides and weed killers can impact surface and groundwater resources. Poorly timed applications of herbicides in and around residential areas could impact sensitive populations. In addition, some herbicides can also cause potential adverse impacts to wildlife if not used in a conservative manner.

Environmental Justice:

Section 4.4.6: We appreciate the discussion of EJ issues, and the presentation and interpretation of census block data in the DGSEIS.

Appendix A, Comments received on the environmental review:

Page A-18: The GSEIS should provide more detailed responses to specific comments, including Endangered Species. The document defers detailed information to the GEIS, and yet consultation activities with the U.S. Fish and Wildlife Service should have been initiated with the preparation of this DGSEIS.

Page A-25: Water quality impacts to Biscayne Bay from barge deliveries are deferred to the GEIS. This DGSEIS could provide more information in regards to legitimate concerns.

Page A-28: Requirements for the NPDES permit should be known, and the Final GSEIS should provide more detail in response to these comments. Furthermore, the NRC's response to the comment on NPDES requirements is not specific ("...and are not under the jurisdiction of the NRC"). Known permit requirements should be addressed in the FGSEIS.

FPL's Compliance Status and Consultation correspondence:

Appendix E; Table E-1: While the table is apparently intended to be comprehensive, it does not include EPA's plan review and approval requirements for storage of petroleum products under the Oil Pollution Prevention Program's Spill Prevention Control and Countermeasures (SPCC), at 40 CFR Part 112. This program is not delegated to the FDEP, and the applicant (Florida Power and Light) has had numerous inspections of its facilities by EPA for compliance with this EPA

program.

The table should be amended to include this approval requirement, as well as any regulatory authority the U.S. Coast Guard has via The Oil Pollution Act of 1990, Facility Response Plan (FRP) requirements for oil storage facilities. A release or discharge from these facilities could potentially present a significant or substantial harm to the environment.

Water Resources:

The National Park Service (Appendix E; pages E-6 to E-11) states that the miles of cooling canals from Turkey Point have altered the natural environment by maintaining a hypersaline area which impedes natural groundwater flow from the upland side of the canals into Biscayne Bay. The NPS also states that the landscape has been altered at the downstream side of these canals by dwarf mangroves and high salinity marshes, as a result of the lack of freshwater flow (which occurred until the creation of the cooling canals; page E-10). The Biscayne National Park requested that the NRC investigate ways to mitigate these impacts.

Appendix A, page A-6, provides an answer to this comment, but does not clarify whether, or how, the construction of the cooling canals may have resulted in impacts to the landscape and the salt marshes in question. However, in the text of the DGSEIS (page 4-7), in the section discussing cooling pond impacts on terrestrial resources impacts are characterized as "small significance." Clarification is needed regarding direct and indirect impacts from the construction and operation of the cooling canals.

Finally, Page A-6 does not address the request from the NPS regarding consideration of mitigation measures. The Final GSEIS, which should provide more information regarding impacts of the cooling canals, should also include information regarding potential mitigation measures, if impacts have occurred.

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78-8

Appendix B

Contributors to the Supplement

Appendix B

Contributors to the Supplement

The overall responsibility for the preparation of this supplement was assigned to the Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission (NRC). The statement was prepared by members of the Office of Nuclear Reactor Regulation with assistance from other NRC organizations, and the Pacific Northwest National Laboratory. Representatives from Argonne National Laboratory, Lawrence Livermore National Laboratory, Energy Research Incorporated, and the Information Systems Laboratory also participated in this review.

Name	Affiliation	Function or Expertise
NUCLEAR REGULATORY COMMISSION		
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Michael T. Masnik	Nuclear Reactor Regulation	Project Manager, Ecology
Barry Zalzman	Nuclear Reactor Regulation	Section Chief and Technical Monitor
Kimberly Leigh	Nuclear Reactor Regulation	Environmental Scientist
Andrew Kugler	Nuclear Reactor Regulation	Project Management
Thomas J. Kenyon	Nuclear Reactor Regulation	Project Management
Robert Palla	Nuclear Reactor Regulation	Severe Accident Mitigation Alternatives
Michael Snodderly	Nuclear Reactor Regulation	Severe Accident Mitigation Alternatives
Louis (Duke) Wheeler	Nuclear Reactor Regulation	Severe Accident Mitigation Alternatives
Patricia Milligan	Nuclear Reactor Regulation	Radiation Protection
Nina Barnett	Nuclear Reactor Regulation	Administrative Support
Jessie Correa	Nuclear Reactor Regulation	Administrative Support
Antoinette Walker	Nuclear Reactor Regulation	Administrative Support
PACIFIC NORTHWEST NATIONAL LABORATORY^(a)		
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Jean M. Cheyney		Administrative Support
Rose M. Watt		Administrative Support

Appendix B

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Inn Seock Kim		Severe Accident Mitigation Alternatives
INFORMATION SYSTEMS LABORATORY		
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- (a) Pacific Northwest National Laboratory is operated for the U.S. Department of Energy by Battelle Memorial Institute.
- (b) Argonne National Laboratory is operated for the U.S. Department of Energy by the University of Chicago.
- (c) Lawrence Livermore National Laboratory is operated for the U.S. Department of Energy by the University of California.

Appendix C

Chronology of NRC Staff Environmental Review Correspondence Related to the Florida Power & Light Company Application for License Renewal of Turkey Point Units 3 and 4

Appendix C

Chronology of NRC Staff Environmental Review Correspondence Related to the Florida Power & Light Company Application for License Renewal of Turkey Point Units 3 and 4

This appendix contains a chronological listing of correspondence between the NRC and the Florida Power & Light Company (FPL) and other correspondence related to the NRC staff's environmental review, under 10 CFR Part 51, of FPL's application for renewal for Turkey Point, Units 3 and 4 operating licenses. All documents, with the exception of those containing proprietary information, have been placed in the Commission's Public Document Room, at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, and are available electronically from the Public Electronic Reading Room found on the Internet at the following web address: <http://www.nrc.gov/NRC/ADAMS/index.html>. From this site, the public can gain access to the NRC's Agencywide Document Access and Management Systems (ADAMS), which provides text and image files of NRC's public documents in the Publicly Available Records (PARS) component of ADAMS.

- | | |
|--------------------|--|
| September 8, 2000 | Letter from Florida Power and Light Company (FPL) to NRC forwarding the application for renewal of operating licenses for Turkey Point Units 3 and 4, requesting extension of operating licenses for an additional 20 years |
| September 19, 2000 | Letter from NRC to FPL, "Receipt of the Turkey Point Units 3 and 4 License Renewal Application and Assignment of a Project Manager" |
| October 4, 2000 | Letter from NRC to FPL transmitting Determination of Acceptability and Sufficiency for Docketing, Proposed Review Schedule, and Opportunity for a Hearing Regarding an Application from Florida Power and Light Company for Renewal of the Operating Licenses for Turkey Point Units 3 and 4 |
| October 18, 2000 | Letter from NRC to FPL forwarding Federal Register Notice of Intent to Prepare an Environmental Impact Statement and Conduct Scoping in support of the review of the license renewal application |
| October 24, 2000 | Letter from NRC to Ms. Julie Rist, Homestead Branch Library, regarding Maintenance of Reference Material for Turkey Point License Renewal at the Homestead Branch Library |

Appendix C

November 15, 2000	Notice of Public Meeting to Discuss Environmental Scoping Process for the Turkey Point Units 3 and 4 License Renewal Application
December 21, 2000	Letter to James Billie, Seminole Indian Tribe, inviting participation in scoping process related to NRC's environmental review of the license renewal application for Turkey Point Units 3 and 4
December 21, 2000	Letter to Mr. Billy Cypress, Miccosukee Indian Tribe, inviting participation in scoping process related to NRC's environmental review of the license renewal application for Turkey Point Units 3 and 4
December 22, 2000	Letter from National Park Service to NRC.
January 6, 2001	Summary of Site Audit to Support Review of License Renewal Application of Turkey Point
January 10, 2001	Note to Michael Lesar, Rules and Directives Branch, "Receipt of Comments Concerning the Scope of the Environmental Review of Turkey Point Units 3 and 4"
January 10, 2001	Summary of Scoping Meeting Held in Support of the Environmental Review for the Turkey Point Units 3 and 4 License Renewal Application
January 30, 2001	Supplement to the Summary of Scoping Meeting Held in Support of the Environmental Review for the Turkey Point Units 3 and 4 License Renewal Application
January 31, 2001	Letter to FPL from NRC, "Request for Additional Information Related to the Staff's Review of the License Renewal Environmental Report for Turkey Point Units 3 and 4"
January 31, 2001	Letter to FPL from NRC, "Request for Additional Information Related to the Staff's Review of Severe Accident Mitigation Alternatives for Turkey Point Units 3 and 4"
February 2001	Florida Energy 2020 Study Commission, Interim Report, "Proposal for Restructuring Florida's Wholesale Market for Electricity."

February 1, 2001	Letter from NRC to Ms. Terrie Bates, South Florida Water Management District, "U.S. Nuclear Regulatory Commission Review of the Turkey Point Units 3 and 4 License Renewal Application"
February 1, 2001	Letter from NRC to Col. James May, U.S. Army Corps of Engineers, "U.S. Nuclear Regulatory Commission Review of the Turkey Point Units 3 and 4 License Renewal Application"
February 13, 2001	E-mail from Ms. Terrie Bates, South Florida Water Management District, to NRC, "U.S. Nuclear Regulatory Commission Review of the Turkey Point Units 3 and 4 License Renewal Application"
March 9, 2001	Memorandum to Christopher I. Grimes, License Renewal and Standardization Branch, "Forthcoming Meeting with Florida Power and Light Company (FPL), on License Renewal for the Turkey Point, Units 3 and 4."
March 26, 2001	Letter from FPL to NRC, "Turkey Point Units 3 and 4, Docket Nos. 50-250 and 50-251, NPDES Permit Number FL0001562, <u>Request for Use of Carbohydrazide.</u> "
March 27, 2001	Letter from FPL to NRC, "Turkey Point Units 3 and 4, Docket Nos. 50-250 and 50-251, <u>Annual Radioactive Effluent Release Report.</u> "
March 29, 2001	Environmental Scoping Summary Report Associated with the Staff's Review of the Application by Florida Power and Light Company for Renewal of the Operating Licenses for Turkey Point Units 3 and 4
March 29, 2001	Letter from NRC to FPL, "Issuance of Environmental Scoping Summary Report Associated with the Staff's Review of the Application by Florida Power and Light Company for Renewal of the Operating Licenses for Turkey Point Units 3 and 4.
March 30, 2001	Letter from FPL to NRC, "Response to Request for the Review of the Turkey Point Units 3 and 4 License Renewal Application"
April 27, 2001	Note to File, "Docket Information Submitted by Florida Power and Light in Support of the Staff's Review of the Turkey Point Units 3 and 4 License Renewal Application."
June 12, 2001	Letter from NRC to FPL, "Request for Comments on the Draft Plant-Specific Supplement to the Generic Environmental Impact Statement Regarding Turkey Point Units 3 and 4."

Appendix C

June 12, 2001	Letter from NRC to EPA, "Draft Supplement 5 to the Generic Environmental Impact Statement Regarding Turkey Point Units 3 and 4."
June 12, 2001	Letter from NRC to FPL, "Notice of Availability of the Draft Plant-Specific Supplement to the Generic Environmental Impact Statement Regarding Turkey Point Units 3 and 4."
June 29, 2001	Memorandum to William D. Beckner, Generic Issues, Environmental, Financial, and Rulemaking Branch, "Notice of Public Meeting to Receive Comments on Draft Supplement 5 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants Related to the Application by the Florida Power and Light Company for Turkey Point Units 3 and 4 (TAC NOS. MA9940 and MA9944)."
July 19, 2001	Memorandum and Order In the Matter of Florida Power and Light Company (Turkey Point Nuclear Plant, Units 3 and 4), Docket Nos. 50-250-LR and 50-251-LR.
August 15, 2001	"Summary of Meeting Held in Support of the Environmental Review for the Turkey Point Units 3 and 4 License Renewal Application (TAC NOS. MA9940 and MA9944)."
August 28, 2001	Letter from NRC to Mr. Allan Webb, U.S. Fish and Wildlife Service, South Florida Ecological Services Office, "Biological Assessment of Impacts to Threatened, Endangered, and Candidate Species at Turkey Point Units 3 and 4."
September 11, 2001	Letter from FPL to NRC, "Turkey Point Units 3 and 4, Docket Nos. 50-250 and 50-251, Wastewater Permit Number FL0001562, <u>Revision - Use of Dimethylamine.</u> "
December 7, 2001	Letter from L.S. Ferrell, U.S. Fish and Wildlife Service, to the NRC. Service Record Number FNS 4-1-02-1, ML013540417.

Appendix D

Organizations Contacted

Appendix D

Organizations Contacted

During the course of the staff's independent review of environmental impacts from operations during the renewal term, the following Federal, State, regional, and local agencies were contacted:

Biscayne National Park, Miami-Dade County, Florida

Chamber of Commerce, Homestead, Florida

City of Florida City - Mayor, Florida City, Florida

City Manager, Homestead, Florida

Covenant Community Development, Florida City, Florida

Dade County Farm Bureau, Homestead Florida

Deputy Property Appraiser, Property Appraisal Office, Miami-Dade County

Economic Development Division, Miami-Dade County Office of Community and Economic Development, Miami, Florida

Farm Share, Homestead, Florida

Florida Fish and Wildlife Conservation Commission, Vero Beach, Florida

Florida Natural Areas Inventory, Tallahassee, Florida

Florida State Historic Preservation Office, Tallahassee, Florida

Institute for Regional Conservation, Miami, Florida

Keyes Company Realtors, Homestead, Florida

Miccosukee Indian Tribe, Miami, Florida

Occupational License Office, Miami Dade County, Miami, Florida

Appendix D

Office of Commissioner Dennis C. Moss, Miami-Dade Board of County Commissioners, Miami, Florida

Office of Community Services, Miami-Dade County, Miami, Florida

Planning and Zoning Department, Miami-Dade County, Miami, Florida

Salvation Army, Homestead, Florida

Seminole Indian Tribe, Hollywood, Florida

South Florida Water Management District, West Palm Beach, Florida

U.S. Army Corps of Engineers, Jacksonville, Florida

U.S. Fish & Wildlife Service, Vero Beach, Florida

Vision Council, Homestead, Florida

Appendix E

**Florida Power & Light Company's
Compliance Status and Consultation Correspondence**

Appendix E

Florida Power & Light Company's Compliance Status and Consultation Correspondence

The list of licenses, permits, consultations, and other approvals obtained from Federal, State, regional, and local authorities for Turkey Point Units 3 and 4 are shown in Table E-1.

Following Table E-1 are reproductions of correspondence prepared and sent during the evaluation process of the application for renewal of the operating licenses for Turkey Point Units 3 and 4.

Table E-1. Federal, State, Local, and Regional Licenses, Permits, Consultations, and Other Approvals for Current Turkey Point Units 3 and 4 Operation

Agency	Authority	Description	Number	Issue Date	Expiration Date	Remarks
U.S. District Court for the Southern District of Florida	Federal Clean Water Act	Final Judgment	Civil Action No. 70-328-CA	09/10/71	None	Controls any discharges from the closed cooling system into navigable waters of the U.S. The judgment is reproduced in Appendix C of AEC 1972. ⁽⁴⁾
NRC	10 CFR Part 50	Operating license, Turkey Point Unit 3	DPR-31	07/20/72	07/19/12	Authorizes operation of Unit 3
NRC	10 CFR Part 50	Operating license, Turkey Point Unit 4	DPR-41	04/11/73	04/10/13	Authorizes operation of Unit 4
FWS	Migratory Bird Treaty Act (16 USC 703-712)	Permit	PRT-697722		12/31/00 (renewal in progress)	The permit authorizes carcass salvage and injured bird transport.
FWS	Section 7 of the Endangered Species Act (16 USC 1536)	Consultation		Consultation initiated 09/07/99		Requires a Federal agency to consult with FWS regarding whether a proposed action will affect endangered or threatened species
NMFS	Section 7 of the Endangered Species Act (16 USC 1536)	Consultation	Letter F/SER3:BH from NMFS to FPL, 09/30/99			NMFS determined that license renewal is not likely to affect species protected by the Endangered Species Act and under the purview of NMFS
Florida Division of Historic Resources	Section 106 of the National Historic Preservation Act (16 USC 470f)	Consultation	Letter from Florida Division of Historic Resources to FPL, October 22, 1999			The National Historic Preservation Act requires Federal agencies to take into account the effect of any undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. The Florida Division of Historic Resources determined that license renewal will have no effect on any sites listed or eligible for listing in the National Register.

Table E.1. (contd)

Agency	Authority	Description	Number	Issue Date	Expiration Date	Remarks
Florida Department of Community Affairs	Section 307 of the Coastal Zone Management Act [16 USC 1456(c)(3)(A)]	Consistency determination with the Florida Coastal Management Program	FL200008250606C	10/04/00	None	The Florida Department of Community Affairs determined that renewal of the Turkey Point Units 3 and 4 operating licenses would be consistent with the Florida Coastal Management Program.
South Florida Water Management District	Florida Statutes §120.54(5)	Agreement	4-FPL-22 8046/306		None	The Agreement covers interceptor ditch operation and groundwater monitoring.
FDEP	Florida Statutes §403.088, FDEP Rule 62-620, Florida Administrative Code	National Pollution Discharge Elimination System Permit	FL0001562	01/07/00	01/06/05	Permit for discharge of wastewater and once-through cooling water to the closed cycle recirculating cooling canal system. Section 1.E.15 of the permit states that the permit constitutes certification of compliance with §401 of the Federal Water Pollution Control Act (Clean Water Act).
FDEP	Florida Statutes §403.087	Wastewater treatment permit	FLA013612-002		01/25/01	Permit for the onsite sewage treatment facility
FDEP	Florida Statutes, chapter 376	Annual storage tank registration	Facility ID 8622249 Placard Number 110600		06/30/01	This authorization covers operation of seven above-ground storage tanks for petroleum products and one above-ground tank for sulfuric acid.
FDEP	Florida Statutes, chapter 376	Annual storage tank registration	Facility ID 8622251 Placard Number 110599		06/30/01	This authorization covers three above-ground and two underground petroleum storage tanks.
FDEP	Florida Statutes, chapter 403	Air emissions permit	0250003-002-AV		12/31/03	The permit authorizes emissions from nine diesel emergency generators, miscellaneous diesel engines, and miscellaneous emissions units and activities.

Table E.1. (contd)

Agency	Authority	Description	Number	Issue Date	Expiration Date	Remarks
FDEP	Florida Statutes, chapter 403	Underground injection control permit	U013-277655		11/5/00 (renewal in progress)	The permit authorizes disposal of sanitary wastewater to wells.
FFWCC	Florida Administrative Code, chapter 39	Special purpose permit	WX01041		12/31/03	The permit authorizes live capturing of 1) crocodiles for marking and scientific data collection purposes, and 2) alligators and Eastern indigo snakes to avoid their harm in the performance of FPL activities.
FFWCC	Florida Administrative Code, chapter 39	Scientific collecting permit	W00278		07/30/03	The permit authorizes the salvaging of carcasses of protected wildlife.
DERM	Code of Miami-Dade County, chapter 24	Multiple source annual operating permit	MSP-00010-2000		9/30/01	The permit covers the boiler makeup water treatment system, fleet operations, two underground storage tanks, barge slip operations, and refrigerant use and recovery.
DERM	Code of Miami-Dade County, chapter 24	Domestic wastewater annual operating permit	DWO-00010 2000/2001		4/14/01	Sewage treatment facility
Miami-Dade County, Florida Fire Rescue Department		Burning permit	8201		3/7/01 (renewal in progress)	

(a) U.S. Atomic Energy Commission (AEC). 1972. *Final Environmental Statement Related to Operation of Turkey Point Plant, Florida Power & Light Company*. Dockets No. 50-250 and 50-251, Washington, D.C.

- CFR = Code of Federal Regulations
- DERM = Miami-Dade County Department of Environmental Resources Management
- FWS = U.S. Fish and Wildlife Service
- NRC = U.S. Nuclear Regulatory Commission
- EPA = U.S. Environmental Protection Agency
- FDEP = Florida Department of Environmental Protection
- FFWCC = Florida Fish and Wildlife Conservation Commission
- NMFS = National Marine Fisheries Service
- USC = United States Code

From: James Golden [jgolden@sfwmd.gov]
Sent: Tuesday, February 13, 2001 5:45 AM
To: TurkeyPointEIS@nrc.gov
Cc: Terrie Bates; Claudia Kugler
Subject: NRC Review of Turkey Point Units 3&4 License Renewal Application

This e-mail is in response to the February 1, 2001 letter from Cynthia A. Carpenter to Terrie Bates of the South Florida Water Management District's (SFWMD's) Environmental Resource Regulation Department concerning the above subject matter.

In August, 2000, the Florida State Clearinghouse requested comments from the SFWMD on the license renewal application for this project for consistency with the Florida Coastal Management Plan. In September, 2000, we advised the Florida State Clearinghouse that we had no adverse comments on this proposal and that it was not inconsistent with our programs, policies, and objectives.

Thank you for this opportunity to comment.

If you have any questions concerning the SFWMD's review of this proposal, please contact Jim Golden, Senior Planner in the Environmental Resource Regulation Department, at (561) 682-6862.



United States Department of the Interior

NATIONAL PARK SERVICE
Biscayne National Park
9700 S. W. 328th Street
Homestead, Florida 33033-5634

IN REPLY REFER TO:

N16

December 22, 2000

Mr. James Wilson, Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T-6 D59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Mr. Wilson:

The National Park Service (hereafter the "Service") appreciates the opportunity to provide scoping comments for the Supplement to the Generic Environmental Impact Statement (GEIS) on potential environmental impacts of license renewal and alternatives to license renewal for the Turkey Point Nuclear Plant, Units 3 and 4, in Homestead, Florida. The Service understands the Nuclear Regulatory Commission (NRC) is committed to the protection of human health and safety, environmental quality, national defense and security. The Service also understands the goal of the applicant, Florida Power and Light (FPL), is the renewal of their operating license to allow power generation capability twenty years beyond the term of the current license. We further understand that both the NRC and FPL want to ensure that this facility operates in a manner that protects the environment and supports the local and regional economy.

We recognize that some of the concerns raised below are not solely related to the operation of the nuclear units, but we are raising them because we feel that they should be considered during the relicensing review that is now underway. From our standpoint, we view the plant in its entirety and are compelled to comment holistically, as opposed to distinguishing between nuclear and fossil fuel aspects of the plant. We do so with the understanding that the two are really inseparable as far as the plant's very function and potential environmental impacts are concerned.

While the Service supports and appreciates the critical role Turkey Point Plant plays in the local community and economy as a large employer, philanthropist, and service provider, our intent here is to assist NRC during scoping to identify potential

environmental issues resulting from alternatives to be analyzed related to the current and future operation of the Turkey Point Plant. The Service recommends the full review of impacts and inclusion of all possible mitigation to help Biscayne National Park meet its mission of resource preservation and protection for present and future generations. The Service welcomes the opportunity to work with the NRC and FPL throughout the environmental review and analysis.

Introduction

Turkey Point Power Plant and property abuts Biscayne National Park (hereafter the "Park"). As FPL's closest neighbor, the Park is greatly concerned about the future of the facility and overall operations associated with running the plant. Biscayne National Park was set aside by Congress for the fundamental purpose stated in the National Park Service's Organic Act, "to conserve the scenery and the natural and the historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." The key management-related provision of the Organic Act is the nondegradation or no-impairment mandate for all park managers. The high standard of no-impairment helps ensure in perpetuity the health and integrity of the resources and values protected by the National Park System. The Service welcomes the opportunity to work with the NRC and FPL to investigate ways to help the Service achieve its mission as it relates to Biscayne National Park.

Scoping Issues and Concerns

The Service understands that the GEIS and its Supplement will analyze license renewal and non-renewal alternatives. The Service feels it is important to provide scoping comments for both the presumed "proposed action" of license renewal and alternatives that may be considered in place of nuclear power generation.

The Service understands under renewal, the nuclear units will continue operations much as they do today, including continued reliance on the fossil fuel units to meet gaps in nuclear production and demand. The Service realizes the extensive cooling canal system will continue to be a critical component of Plant operations. The high standards of safety and security at the Plant are assumed to continue and improve. The Service also understands that during the life of the license extension, the Plant may be required to increase the current levels of energy production to meet ever-growing demands. This increase in demand during the extension years may be met by an increase in energy production from the fossil fuel units of the Turkey Point Plant.

Without knowing the details of the potential non-renewal alternatives, the Service believes the GEIS and the Supplement will examine alternatives, which may include converting the Turkey Point Plant entirely to fossil fuel and or the possible construction of new fossil fuel facilities.

Overarching Scoping Issues - License Renewal and All Alternatives.

Biscayne Bay Natural Habitat

The Park's name is derived from Biscayne Bay and many consider the Bay the heart of the National Park. The Bay is a shallow estuarine identified as an Outstanding Florida Water Body. The Bay is also the focus of the Biscayne Bay Partnership Initiative, a multi-organizational group, that the Park and FPL are members of, dedicated to preserving this very fragile marine ecosystem in perpetuity. In a similar vein of cooperation, the Park is anxious to work with FPL to investigate alternative methods of fossil fuel delivery to the Power Plant. Currently, the delivery of fossil fuel occurs by barge from the port of Miami through Biscayne Bay with over 300 trips each year hauling 12,000 barrels of bunker "C" fuel oil to the Plant.

The barge has run aground numerous times, and each trip adversely impacts the water quality by churning up the Bay bottom into the water column creating a turbidity plume that lasts long after the barge has passed. The thrust from the barge's tugboat may disrupt seagrass recovery by potentially ripping it from the bottom, as well as any other attached vegetation. Turbidity is known to limit the photosynthesis of both the phytoplanktonic and seagrass communities that are essential for a healthy marine ecosystem. We realize that the fuel barge is under contract and not directly operated by FPL, but the barge is in the Park because of FPL. The continuation of this delivery method is strongly opposed by Biscayne National Park. We have asked FPL to consider the possibility of extending an existing and under-utilized fuel pipeline from the former Homestead Air Force Base to the Power Plant as an alternative. We recommend the same potential mitigation be considered under the proposed action and all alternatives within the Supplement. We especially recommend that other fuel delivery methods be explored because of the need to maintain this "anchor" in the Florida power grid long into the future.

Natural Soundscapes

An important part of the Service mission is to preserve and/or restore the natural soundscapes associated with units of the national park system. They are inherent components of "the scenery and the natural and historic objects and the wild life" protected by the National Park Service Organic Act. The natural ambient sound level of a park is the natural soundscape of that park. It is comprised of the natural sound conditions in a park that exist in the absence of any human-produced noises. This is the basis for determining the "affected environment" in National Environmental Policy Act documents and other environmental assessments related to human actions producing inappropriate or intrusive impacts on the park soundscape. Noise monitoring conducted by a noise consultant for the National Park Service identified the natural ambient sound levels in the southwestern portion of the park to be at or below 30 decibels.

The operation of Turkey Point Plant may result in intrusive industrial noise that may impede Biscayne National Park's efforts to preserve and/or restore the park's natural ambient sound levels in the park environments adjacent to the Power Plant. Service

directives mandate that park managers constructively work with those responsible for neighboring noise sources that impact parks to explore what can be done to better protect parks. With this in mind, the Service recognizes the vital missions of the Nuclear Regulatory Commission and Florida Power and Light and the potentially unavoidable by-product of noise as you achieve your mission. The Park is interested in gaining more information related to any potential existing and future impacts to the natural soundscape. We recommend the Supplement include the natural soundscape of the park as part of the "affected environment" when identifying impacts and any potential mitigation for such impacts. We acknowledge the complexities of mitigating noise intrusions from industrial facilities, therefore, we also recommend the Supplement consider long-term soundscape monitoring to help determine whether or if mitigation may be required in the future under the proposed action and all alternatives.

Air Resources

The Service is concerned about the continued introduction of anthropogenic air pollutants and particulate matter into an area of special concern. Although Biscayne National Park is designated a Class II Air Resource, the National Park Service Organic Act requires the Service protect (air) resources regardless of the air quality related values (AQRV) status. We recommend the Supplement identify the cumulative effect associated with projected population growth and continued and increasing emissions under the proposed action and all alternatives. We also recommend that maximum mitigation measures be implemented to prevent additional air pollutants. We also recommend that mitigation measures, including air scrubbers and other similar technologies be fully evaluated and implemented to the maximum extent possible to prevent particulate matter and other pollutants from being emitted into the air.

Native Plants, Animals, and Wildlife

Biscayne National Park helps provide refuge for many of the threatened and endangered species and other species of special concern of South Florida. The struggle to preserve and protect these rare and endangered species is complicated by many factors such as, continued proliferation of exotic plant species, alteration of natural habitat, loss of natural habitat, disruption of natural hydrology, disruption of predator/prey balance, loss of food source, over-harvest, and disturbance of breeding areas. The lands associated with the Turkey Point Plant have the ability to benefit or harm many of the critical species of South Florida.

We recommend the Supplement consider continued and expanded exotic plant eradication from FPL property for its benefits of removing harmful seed sources. We recommend the Supplement consider the impacts and benefits that have occurred due to the alteration of the natural habitat from the Turkey Point cooling canals. The Park recognizes the success of the cooling canals as artificial breeding grounds for the endangered North American saltwater crocodile. The park hopes to work more closely with FPL in the future with data exchange regarding the North American saltwater crocodile, to include monitoring of tagged animals that are observed in the park and research projects that could jointly benefit park resource managers and FPL.

The Park's Scenery (Scenic Features and Natural Landscapes)

As indicated in the Organic Act and the park's enabling legislation, scenic vistas and natural settings are directly identified as resources to be preserved and protected by park managers. Biscayne National Park's tropical setting is special due to its role in protecting some of the last remaining examples of "old Florida." The Power Plant's location, size, and industrial features alter "old Florida's" natural landscape and scenic vistas. While the Park realizes this alteration is largely unable to be mitigated, we are interested in the Supplement investigating ways to minimize the facility's current intrusions and that this issue is considered in any further development. A potential mitigation option to be considered under the proposed action and all alternatives may include repainting the structures in natural tones that mirror the surrounding landscape, and consequently are less obtrusive to the natural setting.

Natural Visibility (Night Skies)

One of the resources that park management is greatly concerned about is the Park's night sky. This is a fragile resource that is sought after by many visitors and residents and is critical to the health of wildlife. The Service is interested in working with FPL to minimize the excessive lighting of the Plant from dusk to dawn. We understand there are serious safety and security constraints that require sufficient lighting, yet the Park would want to see the installation of innovative shielding and other mitigation measures that would lessen the "glow" that can currently be seen as far east as the park's barrier islands (7 miles offshore). We recommend the Supplement include mitigation options for the night sky under the proposed action and all alternatives.

Mainland and Nearshore Habitat

The natural habitat north, south, and east of Turkey Point Nuclear Power Plant is protected within Biscayne National Park. This area is identified within park management plans as some of the most sensitive and critical resources of the park. The area south and southwest of the plant, just outside of the Park, contains the 100+ miles of cooling canals that have altered the natural environment by maintaining a hypersaline area of influence that in turn impedes natural groundwater flow from the upland side of the canals into the Bay. The downstream side of these canals contains dwarf mangroves and high salinity marshes, which are due to the lack of freshwater flow that once occurred in this area prior to the cooling canals creation. While the Park understands the cooling canals must remain as part of the Plant's operations and while we appreciate their function of avoiding the direct release of heated water into the Bay, the Park recommends the Supplement investigate ways to reverse some of the adverse impacts under the proposed action and all alternatives. Rehydrating the hypersaline marshes with fresh water is one example of potential mitigation to be considered during the analysis.

Scoping Issues - Non-Renewal Alternatives

The following issues include concerns over adoption of alternatives with reliance on fossil fuels for power production:

Loss of Important Environmentally Sensitive Lands, Open Space or Farmland

Biscayne Bay has been identified as requiring restoration from existing alterations and influences within its watershed that have reduced fresh water flow. The Service is

concerned that the alternatives to license renewal will result in the demand to develop new power plant facilities in deep South Dade, leading to land use changes that prevent the ability to preserve and protect the Bay. The direct and cumulative impacts related to a large-scale development of this character should be fully identified within the Supplement.

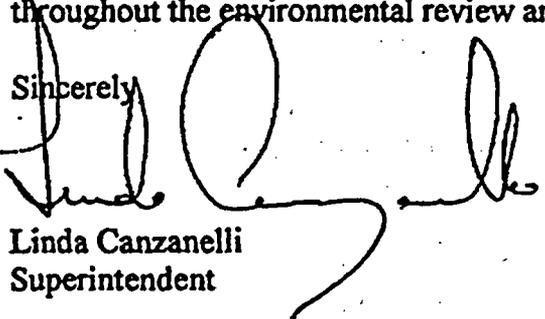
Reliance on Fossil Fuels for Power Production

As indicated in the overarching issues, the Service is very concerned about the detrimental impacts that will occur without the power production from the nuclear units. To meet the energy demands additional fossil fuel will be required. As delivery is set today, this would result in a dramatic increase in the numbers of FPL barge transports through Biscayne National Park's sensitive marine ecosystem. Without nuclear energy production, reliance on burning fossil fuels without using extensive mitigation methods will result in serious threats to the Park's air quality. The Supplement should address these concerns during the alternatives analysis.

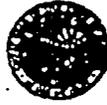
Conclusion

Given the aforementioned issues, the National Park Service strongly recommends that the Supplement to the Generic EIS address concerns related to the future health and integrity of Biscayne National Park. Biscayne National Park will remain here long after the life of the nuclear facility is over. The National Park Service is interested in working with NRC and FPL to create new and productive partnerships to begin to mitigate current and future impacts from Turkey Point Plant. We look forward to assisting the NRC and FPL throughout the environmental review and analysis.

Sincerely,



Linda Canzanelli
Superintendent



STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS

"Dedicated to making Florida a better place to call home"

JES BUSH
Governor

STEVEN M. SMERT
Secretary

October 4, 2000

Mr. T. V. Abbatiello
Florida Power & Light Company
9760 SW 344 Street
Florida City, Florida 33035

RE: U.S. Nuclear Regulatory Commission (NRC) - Renewal of Operating Licenses for
Turkey Point Units 3 and 4 - Biscayne Bay, Miami-Dade County, Florida
SAI: FL200008250606C.

Dear Mr. Abbatiello:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced project.

Based on the information contained in the above-referenced document and the enclosed comments provided by our reviewing agencies, the state has determined that the above-referenced action is consistent with the Florida Coastal Management Program.

In addition, comments received from the South Florida Regional Planning Council, noting that the license renewal is generally consistent with its Strategic Regional Policy Plan, are enclosed for your review and consideration.

Thank you for the opportunity to review this action. If you have any questions regarding this letter, please contact Ms. Cherie Trainor, Clearinghouse Coordinator, at (850) 414-5495.

Sincerely,

Ralph Cantral, Executive Director
Florida Coastal Management Program

RC/cc
Enclosures
cc: John Hulsay, South Florida Regional Planning Council

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CRITICAL STATE CONCERN FIELD OFFICE

COMMUNITY PLANNING

EMERGENCY MANAGEMENT

HOUSING & COMMUNITY DEVELOPMENT

DIVISIONS OF FLORIDA DEPARTMENT OF STATE

Office of the Secretary
 Office of International Relations
 Division of Elections
 Division of Corporations
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FLORIDA DEPARTMENT OF STATE
 Katherine Harris
 Secretary of State
 DIVISION OF HISTORICAL RESOURCES

MEMBER OF THE FLORIDA CABINET

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 Department of Law Enforcement
 Department of Highway Safety and Motor Vehicles
 Department of Veterans' Affairs

Mr. R.J. Hovey
 Florida Power & Light Company
 Turkey Point Nuclear Plant
 9760 SW 344 Street
 Homestead, Florida 33035

October 22, 1999

RE: DHR Project File No. 997496
 Cultural Resource Assessment Request
 Nuclear Regulatory Commission
 Turkey Point Nuclear Plant License Renewal Project
 Homestead, Dade County, Florida

Dear Mr. Hovey:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the referenced project for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*. The authority for this procedure is the National Historic Preservation Act of 1966 (Public Law 89-665), as amended.

It is the opinion of this agency that because of the project nature (license renewal) it is considered unlikely that archaeological or historical sites will be affected. Therefore, it is the opinion of this office that the proposed project will have no effect on any sites listed, or eligible for listing in the National Register.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservation Planner, at 850-487-2333 or 800-847-7278. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

James A. Kennemer

JSM
 Janet Synder Matthews
 State Historic Preservation Officer

JSM/Ese

R.A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250 • <http://www.flheritage.com>
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 Archaeological Research (904) 487-2274 • FAX: 414-2277
 Historic Preservation (904) 487-2333 • FAX: 922-4496
 Historical Museums (904) 486-1484 • FAX: 922-2592
 Historic Pensacola Preservation Board (850) 994-5984 • FAX: 943-5989
 Palm Beach Regional Office (561) 279-1275 • FAX: 279-1476
 St. Augustine Regional Office (904) 825-5045 • FAX: 825-5044
 Tampa Regional Office (813) 272-7943 • FAX: 272-2343



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702
(727) 570-5312; FAX 570-5517

SEP 30 1999

F/SER3:BH

Mr. R. J. Hovey
Florida Power and Light
Turkey Point Nuclear Plant
9760 South West 344 Street
Homestead, FL 33035



Dear Mr. Hovey:

This is in response to your letter dated September 7, 1999 regarding the Turkey Point Nuclear Plant's operating license located in Homestead, Florida. As part of the renewal process, the Nuclear Regulatory Commission (NRC) required you to identify adverse impacts caused by plant operations to species protected by the Endangered Species Act (ESA).

Impact to National Marine Fisheries Service (NMFS) trust resources caused by power plant operations comes mainly from the cooling water intake systems. Turkey Point's cooling water system consists of a closed loop system of canals which do not use seawater nor do they discharge to waters of the United States. This system is recharged by stormwater and to a lesser extent by interchange with groundwater. Based on this information, NMFS believes the proposed action is not likely to affect species protected by the ESA under its purview.

This concludes your consultation responsibilities under section 7 of the ESA for the renewal of Turkey Point Nuclear Plant's license for species under NMFS purview. Consultation should be reinitiated if new information reveals impacts of the identified activity that may affect listed species or their critical habitat, a new species is listed, the identified activity is subsequently modified or critical habitat determined that may be affected by the proposed activity.

If you have any questions, please contact Bob Hoffman, Fishery Biologist.

Sincerely yours,

Charles A. Oranetz

for William T. Hogarth, Ph.D.
Regional Administrator

cc: F/PR3





Florida Fish and Wildlife Conservation Commission

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255 154th Ave.
Vero Beach, FL 32968
September 22, 1999

Mr. R. J. Hovey
Florida Power and Light
Turkey Point Nuclear Power Plant
9760 S. W. 344th Street
Homestead, FL 333035

RE: Turkey Point Power Plant License Renewal, Dade
County

Dear Mr. Hovey:

The Office of Environmental Services has received your letter regarding your application for license renewal of the Turkey Point Power Plant. According to your letter, you are required to identify any adverse impacts to rare and endangered species associated with the license renewal. You have indicated that current operation of the plant does not adversely impact state listed species. Further, there are no future operational or refurbishment activities planned for the plant that could potentially impact state listed species. Accordingly, we concur that the continued operation of Turkey Point Nuclear Plant will not likely impact state listed species. We currently offer no other comments or concerns regarding this issue.

Sincerely,

Stephen F. Lau,
Biological Administrator

SRL/TMW/gk
ENV 1-11-2
turkpoint.con.wpd



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
P.O. Box 2676
Vero Beach, Florida 32961-2676



July 5, 2000

R.J. Hovey
Vice President
Turkey Point Plant
9760 S.W. 344th Street
Florida City, Florida 33035

Dear Mr. Hovey:

Thank you for the June 6, 2000, letter to the Fish and Wildlife Service (Service) responding to our request for additional information on Florida Power and Light's (FPL) Federal application for renewal of the operating license for the Turkey Point Nuclear Plant. As part of the application process, the Nuclear Regulatory Commission (NRC) requires that FPL identify adverse impacts to rare and endangered species resulting from continued operation of the facility or refurbishment activities associated with the license renewal. The Service requested additional information, in a letter dated October 25, 1999, on FPL's environmental contaminants program and FPL's monitoring of the nesting activities, hatch rates, and survival rates of the American crocodile (*Crocodylus acutus*) within the cooling canal network at the Turkey Point Power Plant.

In response to this request, FPL engaged the services of Dr. Ann Shortelle of Environmental Sciences and Engineering Inc. of Gainesville, Florida to perform an Ecological Risk Assessment of the Turkey Point cooling canal system. FPL presented the results of this assessment to the Service on April 11, 2000, and provided a detailed tour of the cooling canal system, observations of crocodile nest, and crocodile activities in the canals.

The site-specific data shows that the American crocodile population at Turkey Point is thriving. The evidence assembled in the assessment demonstrates the FPL's conservation activities have been one of the key factors in the recovery of the American crocodile in south Florida. The data provided by FPL supports their determination that the operation of the Turkey Point Nuclear Plant is not adversely affecting the American crocodile population.

The Service completes section 7 consultations with a Federal action agency. The Federal action agency determines how the applicants are to be involved in the consultation, consistent with provisions of section 7(a)3, (b) and (c) of the ESA and the section 7 regulations. Non-federal representatives may be involved in the informal consultation process and may request and receive species lists, prepare biological assessments, and provide information for the formal

consultation. However, the Service requires the action agency to designate formally the non-Federal representative in writing. The ultimate responsibility for section 7 obligations remains with the Federal action agency. This letter does not fulfill requirements of interagency section 7 consultation for this project.

The Service has also reviewed the information available to us on the presence of other federally listed species in the project area. The information available to us indicates that the bald eagle (*Haliaeetus leucocephalus*) and the wood stork (*Mycteria americana*) are also occasional visitors to this portion of south Miami-Dade County. The management actions conducted by FPL are also beneficial to both of these species.

The presence of threatened and endangered species in or adjacent to the referenced property is based on a review of known locations recorded in a Geographic Information Systems (GIS) database maintained by the Service's South Florida Ecological Service Office. The GIS database is a compilation of data received from several sources. Listed species may be present in suitable habitat even if no known locations are identified in our database. The Service assumes suitable habitat supports listed species and recommends site surveys to determine the presence or absence of listed species. Suitable habitat types for listed species can be found in the species accounts in the South Florida Multi-Species Recovery Plan (1999). This document is available on the internet at www.fws.gov/r4eao/wildlife/esvb.html.

We have also provided for your consideration a table of species by county that are protected as either threatened or endangered under the ESA for counties in south Florida. Because this matrix does not include State-listed species, contact the Florida Fish and Wildlife Conservation Commission to identify those species potentially present in the vicinity.

FISH AND WILDLIFE RESOURCES

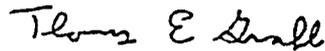
We are also providing you with a list of species that we would consider during our review of any proposal associated with this project. This list represents species that the Service is required to protect and conserve under other authorities, such as the Fish and Wildlife Coordination Act and the Migratory Bird Treaty Act (16 U.S.C. 701 *et seq.*). A variety of habitats in Miami-Dade County occasionally provide resting, feeding, and nesting sites for a variety of migratory bird species. As a public trust resource, migratory birds must be taken into consideration during project planning and design. During the site visit, the white pelican (*Pelecanus erythrorhynchos*) was observed in several of the canals. FPL's management actions also benefit this species.

Furthermore, the Service would also like to take this opportunity to commend FPL for their past and current research efforts in the management and operation of the cooling canal and the direct benefit these operations have had on the recovery efforts for the endangered American crocodile in south Florida.

Appendix E

Thank you for the opportunity to comment. We look forward to working with you in the future. If you have any questions, please contact Allen Webb at (561) 562-3909, extension 246.

Sincerely yours,



James J. Slack
Project Leader
South Florida Ecological Services Office

Enclosures

cc:(w/o enclosures)
FWC, West Palm Beach, FL
Miami-Dade County DERM, Miami, FL ..
EPA, West Palm Beach, FL
SFWMD - ERP Permits, West Palm Beach, FL
NRC Power Plant License Division



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 28, 2001

Mr. Allan Webb
U.S. Fish and Wildlife Service
South Florida Ecological Services Office
1339 20th Street
Vero Beach, FL 32961-3559

**SUBJECT: BIOLOGICAL ASSESSMENT OF IMPACTS TO THREATENED,
ENDANGERED, AND CANDIDATE SPECIES AT TURKEY POINT UNITS 3
AND 4**

Dear Mr. Webb:

In accordance with Section 7 of the Endangered Species Act (ESA) and 50 CFR Part 402, "Interagency Cooperation," of the Endangered Species Act of 1973, as amended, the enclosed biological assessment (BA) is submitted for your concurrence as part of the informal consultation process. The U.S. Nuclear Regulatory Commission staff met with you on December 8, 2000, to inform you of Florida Power and Light Company's (FPL) proposed action to renew the Turkey Point Units 3 and 4 operating licenses for an additional 20 years and discuss informal consultation. The BA, prepared by NRC and its contractors, assesses the impacts associated with the continued operation of the Turkey Point Units 3 and 4. For completeness, all threatened, endangered, and candidate species, including the species that may not be under your purview, are included in this BA.

The NRC requests that your office render its concurrence by November 15, 2001 in our conclusion that continued operation of Turkey Point Units 3 and 4 will have "no effect" or "will not likely to adversely affect" threatened and endangered species. If you have any questions, please contact Dr. Michael Masnik at 301-415-1191.

Sincerely,

Cynthia A. Carpenter

Cynthia Carpenter, Branch Chief
Generic Issues, Environmental, Financial,
and Rulemaking Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos. 50-250 and 50-251

Enclosure: Biological Assessment

**Biological Assessment
For Threatened and Endangered Species
Potentially Affected by the
Renewal of the Operating Licenses for
the Turkey Point Units 3 and 4,
Miami-Dade County, Florida**

16 July 2001

Prepared for the
U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation

By
Michael R. Sackschewsky, Ph.D.
Pacific Northwest National Laboratory, Richland, WA
and
Elisabeth A. Stull, Ph.D.
Argonne National Laboratory, Argonne, IL

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1.0 Background

This biological assessment (BA) has been prepared by the U. S. Nuclear Regulatory Commission (NRC) to support the Supplemental Environmental Impact Statement (SEIS) for the renewal of the operating licenses for the two nuclear power reactors at the Turkey Point site, located on the shore of Biscayne Bay in southern Miami-Dade County, Florida. Commercial operation of these reactors has been licensed by the NRC since 1972, and the current licenses are set to expire in 2012 (Unit 3) and 2013 (Unit 4). The proposed license renewal for which this BA has been prepared would extend the operating licenses to 2032 and 2033 for Units 3 and 4, respectively.

A SEIS was issued on June 12, 2001, to support the relicensing decision; it supplements a Generic EIS (GEIS) for license renewal of commercial nuclear power plants (NRC 1996). The SEIS covers specific issues such as endangered and threatened species that are of concern at the Turkey Point Units 3 and 4 that could not be considered on a generic basis in the GEIS.

An EIS was prepared to support the initial licensing actions in 1972 (AEC 1972). That EIS included brief discussions of rare species in the vicinity of the plant. However, the primary law that now governs the protection of rare species in the U.S., the Endangered Species Act of 1973, had not been passed when the original environmental documentation was prepared. Subsequent to the initial licensing evaluation, potential impacts to endangered or threatened species from aspects of plant operation have been evaluated. A biological assessment (BA) (NRC 1980) (FWS reference number 4-1-80-A-219) was prepared by the NRC staff and submitted to the U.S. Fish and Wildlife service. The BA covered the American crocodile, American alligator, the green, leatherback, hawksbill, and Kemp's Ridley sea turtles, eastern indigo snake, west Indian manatee, brown pelican, and bald eagle as part of the environmental documentation for a license amendment concerning the replacement of steam generators at the Turkey Point plant. The BA concluded (and USFWS concurred) that the operation of the Turkey Point plant would either have no effect or was not likely to adversely affect any of the species considered.

1.1 Proposed Action

The current proposed action considered in the SEIS is the renewal of the operating licenses for Turkey Point Units 3 and 4 for an additional 20-year term beyond the period of the existing licenses. Therefore, the proposed action is essentially administrative in nature; no new construction or refurbishment is proposed. If the operating license renewals are granted, the nuclear units, the cooling canal system, and the transmission lines and corridors will be operated and maintained as they are now until 2032 and 2033.

It should be noted that the overall effect on endangered and threatened species in the vicinity of the site will not be drastically changed whether the operating licenses for Units 3 and 4 are renewed. This is because the two nuclear units share the site with two fossil fuel units that are not under the jurisdiction of the NRC. All four units share the same cooling canal system, and

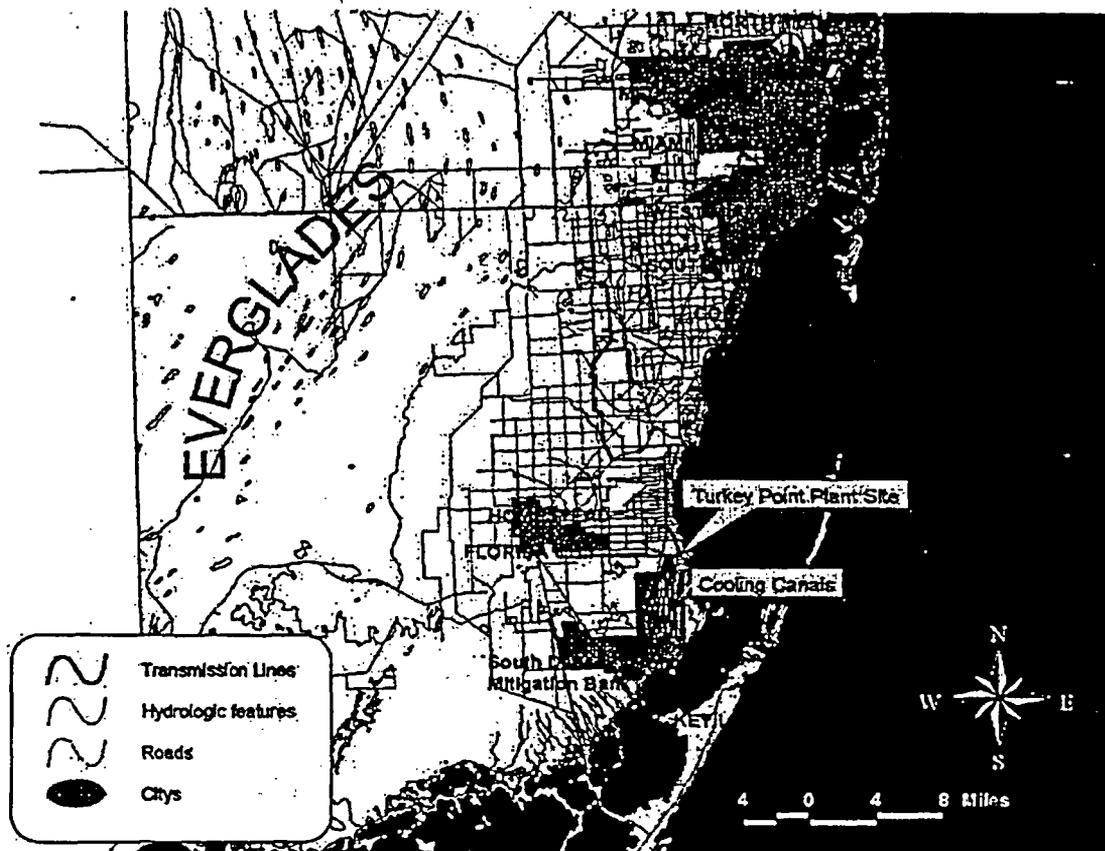


Figure 1. Location of Turkey Point Units 3 and 4 and Cooling Canals in Southern Miami-Dade County, Florida.

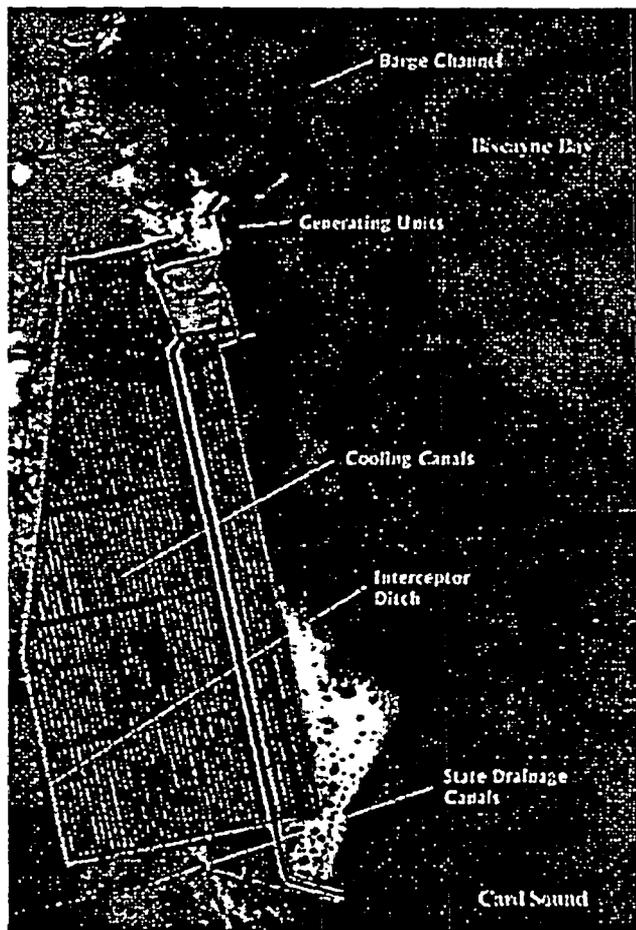
the electricity generated at all four units is transferred to the regional electrical grid using the same transmission corridors. Therefore, even if the license renewals were denied, the cooling system would continue to be used by the fossil units and the transmission lines and corridors would continue to be used and maintained as they are at present.

The transmission lines associated with the Turkey Point site represent a small portion of the electrical power transmission system in south Florida. The only lines considered in the SEIS and this BA are those originally installed to connect Turkey Point Units 3 and 4 to the regional grid, and which were included in the original site EIS (AEC 1972).

2.0 Description of Area

The Turkey Point site is located on the shore of Biscayne Bay approximately 40 km (25 mi) south-southwest of downtown Miami, Florida in Miami-Dade County at latitude 25° 26' 04"

Figure 2. Composite Satellite Image of Turkey Point Units 3 and 4 and the Cooling Canal



System. (Source: National Oceanic and Atmospheric Administration Images 5WGS3233 and 5WGS3235)

north and longitude 80° 19' 52" west. (Figure 1). The nearest towns are Florida City, located 13 km (8 mi) west and Homestead, located 14 km (9 mi) northwest. The plant site abuts the western boundary of Biscayne National Park and the South Florida or Everglades Mitigation Bank to the south and southwest. The Turkey Point plant owner, Florida Power and Light (FPL), is also the owner of the mitigation bank land. The two nuclear units at the Turkey Point site share the

general location and the cooling system with two fossil fuel plants that are not covered under the NRC licensing actions.

The 29 km² (7166 ac) Turkey Point site includes approximately 2 km² (494 ac) used for the power plants, support facilities, parking lots, etc. and approximately 27 km² (6700 ac) devoted to the cooling canal system (Figure 2). The cooling canal system consists of 32 channels that carry 82 m³/s (1.3 million gpm) of warm water south from the plant and 8 channels that return water north to the plant. The 270 km (168 mi) of channels are about 61 m (200 ft) wide and 0.3 to 1 m (1 to 3 ft) deep. Water temperatures range from 17° C to 42° C (63° F to 108° F). The average salinity is 36 ppt and the maximum is 46 ppt. The canal system does not withdraw or discharge waters to or from other water bodies; evaporative loss is made up from precipitation or by flow through the porous dike. An interceptor ditch protects freshwater habitats to the east and south of the system from intrusion of the hypersaline waters of the canals during dry periods. Groundwater flow in the area is from west to east toward Biscayne Bay. The flora of the cooling canals is dominated by rooted marine plants which are removed on about a three-year cycle to maintain water flow.

The reproducing fauna of the canals include crabs and killifish (Cyprinodontidae) and live-bearer fish (Poeciliidae). Several estuarine gamefish species, such as snook, barracuda, and tarpon are found in low abundance and are believed to have entered the system prior to closure. Typical spawning habitat for these species does not occur in the cooling canal system.

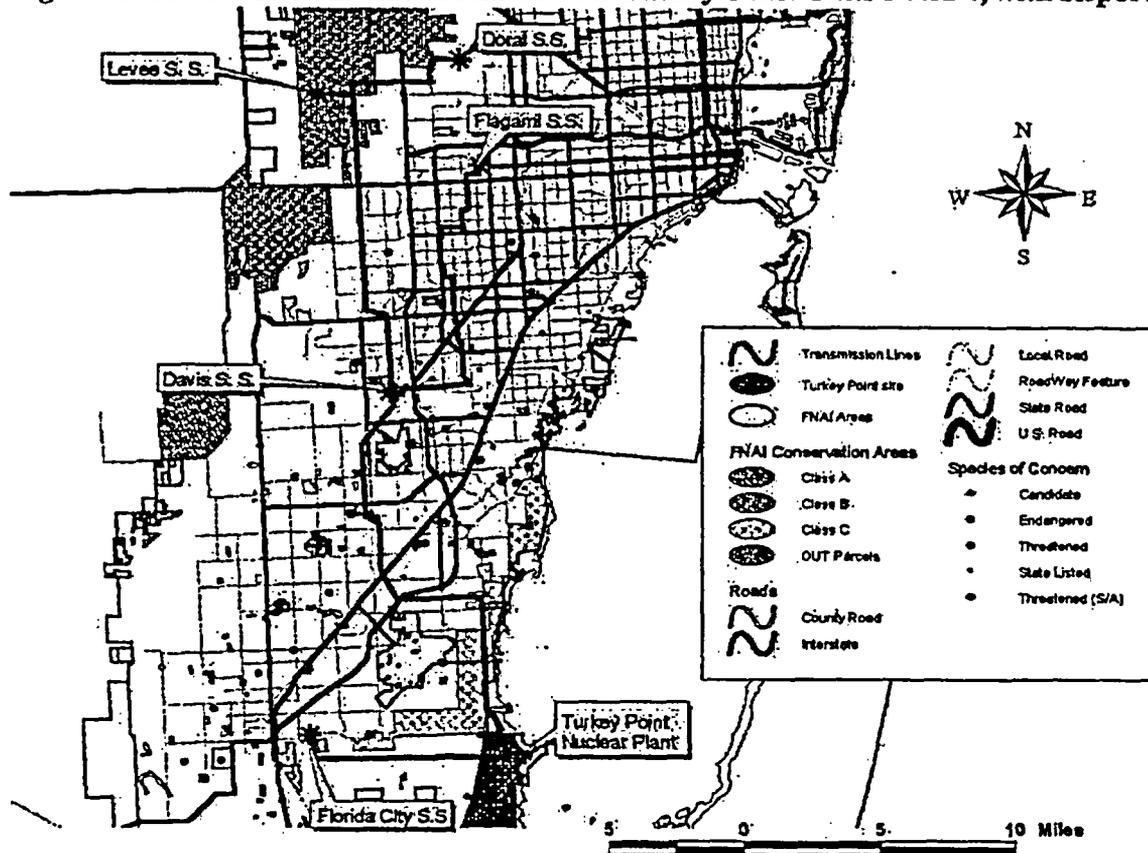
The canals are separated by berms of spoil material dredged when the canals were constructed. These berms are 1 to 5 m (3 to 15 ft) in height and up to 61 m (200 ft) wide. In different areas the berms may be barren, covered with salt tolerant herbs and grasses, or densely covered with Australian pine (*Casuarina equisetifolia*), Brazilian pepper (*Schinus terebinthifolius*), red mangrove (*Rhizophora mangle*), and buttonwood (*Conocarpus erectus*). Woody terrestrial vegetation is removed from the berms by mechanical means on a ten-year cycle to maintain the cooling efficiency of the canals.

Aquatic and marine habitats surrounding the cooling canal system include Biscayne Bay and Card Sound to the east, state drainage canals to the south and west, and the Everglades farther to the west beyond Florida City, Florida, and Homestead, Florida. Several threatened, endangered, and candidate species occur in these surrounding habitats; their distributions are described in the species accounts later in this report.

Prior to site construction, the eastern portion of the site was primarily dominated by red mangrove and the western portion of the site, where the canals are now located, was dominated by sawgrass (*Cladium jamaicensis*), cattails (*Typha* sp.), and dwarf red mangrove, with scattered islands of black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), and buttonwood (AEC 1972). The areas immediately west of the cooling canals are presently

S. S. = substation

Figure 3. Transmission Lines Associated with Turkey Point Units 3 and 4, with Reported



Locations of Endangered, Threatened, and Candidate Species and the Distribution of Some Conservation Areas. (Data from Florida Geographic Data Library, February 2001)

characterized as sawgrass marsh or wet prairie with islands of mangrove and hardwood hammocks (FPL 1995).

The transmission corridors associated with the Turkey Point site occupy approximately 9.3 km² (2295 ac) over a combined distance of approximately 92 km (57 miles) (Figure 3). The transmission lines are in two sets of corridors, the first runs west from the Turkey Point site for approximately 8 km (5 mi) then turns north a short distance to the Florida City substation along Palm Drive approximately 3.2 km (2 mi) east of Florida City. The vegetation along this corridor is primarily sawgrass marsh and wet prairie that has been heavily invaded by Australian pine and Brazilian pepper (FPL 2000). The other transmission corridor runs north from the Turkey Point site, the first 10 km (6.2 mi) through a tidal mangrove community, then primarily through agricultural and otherwise developed lands. Portions of the northern corridors pass through or near remnant patches of pine rockland, which was the dominant community type along the Miami ridge prior to European settlement and subsequent development. Pine rockland habitat is

now extremely rare and harbors several federally listed threatened or endangered plant species (FWS 1999a).

Typical maintenance within the transmission corridors includes tree trimming at mid-span or when exotic species such as Australian pine invade the tower pads or corridor. Herbicides are primarily applied to individual trees or shrubs to prevent re-sprouting, although broadcast applications are used as general weed control in some of the urban or suburban areas. Regular mowing also is used for maintenance of corridors in suburban areas.

3.0 Description of Potential Actions and Effects

This BA has been prepared to evaluate the potential effects of the continued operation and maintenance of Turkey Point Units 3 and 4, the cooling canal system, and the associated electrical power transmission system during the license renewal term of 2012 through 2033. Actions that may affect endangered or threatened species include mowing, trimming, and weed control within the transmission corridors, vegetation management within the cooling canals and on the berms between canals, temperature and effluent effects on the aquatic conditions within the cooling canals, impingement on the intake structure, or entrainment of organisms through the reactor cooling systems.

Minor sources of potential adverse impacts to threatened and endangered species include collision and/or electrocution hazards for the larger birds associated with the transmission lines, effluents from the plant, and power plant effects on the cooling pond temperature regime. Activities that are most likely to result in adverse impacts to endangered or threatened species as a result of continued operation of Turkey Point Units 3 and 4 are vegetation maintenance activities in the cooling pond system and along the transmission line corridors.

The continued effectiveness of the cooling canal system in heat dissipation requires the maintenance of water flow in the canals and air flow above the canals. Several types of rooted marine plants, including widgeon grass (*Ruppia maritima*), shoal grass (*Halodule wrightii*), turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), and stargrass (*Halophila engelmannii*), can grow from the bottom to the top of the water column, impeding water flow. FPL removes rooted marine plants on about a three-year cycle with a barge-mounted machine that moves slowly along the canal system. The barge is mounted on tracks, so that it can also move across the berms. Plants are uprooted by hydraulic means, collected on a rake, ground in a macerator, and discharged back to the canal. Woody vegetation growing on the berms, including exotic species, are pulled up by the roots with a "berm mower," a wide-track bulldozer that pulls a chopping device. Grasses and other herbaceous vegetation then colonize the disturbed areas. Crocodile nesting areas are designated as sanctuaries and are not devegetated. FPL does not use chemicals for vegetation maintenance in the cooling canal system, nor are chemicals or wastes from plant operations or domestic sources discharged to the cooling canal system. The operation of the Turkey Point Units 3 and 4 primarily affects water flow and temperature within the cooling canal system. Water circulation in the cooling canal system is

about 82 m³/s (1.3 million gpm), and current speed is less than 0.46 m/s (1.5 ft/s). Impingement and entrainment of organisms and other material in the intakes of the plants is controlled by trash racks and traveling screens. Large items are collected for disposal, while small items are returned to the discharge side of the canals. Flow and temperature in the canals is maintained by the operation of both the Turkey Point nuclear and fossil fuel units. This, plus the recirculating nature of the system, reduces the chance of cold shock effects should the cooling system of one or more units be inoperable or the nuclear units be closed and decommissioned.

FPL generally follows a low-impact approach to transmission line corridor maintenance. Woody vegetation is left in place unless it gets tall enough to compromise the conductors or impair access along the maintenance roads. At most locations there is an active program to remove weedy trees such as Australian pine, Brazilian pepper, and melaleuca (*Melaleuca quinquenervia*). Removal of taller trees is usually by hand, and often the stumps are treated with herbicides to discourage resprouting. Much of the land in the transmission corridors is currently used for agricultural production, including row, tree, and nursery crops. In the urban and suburban portions of the transmission lines, the corridors may be regularly mowed, and in some areas herbicides are used to control weedy vegetation. FPL utilizes a computer database to prepare management prescriptions for each section of transmission line corridor that incorporate known management concerns and environmental sensitivities.

Some of the larger bird species, such as bald eagles and wood storks, could be adversely affected by collisions and / or electrocution on transmission lines. However, there have been no reported occurrences of eagle or wood stork collisions or electrocutions along the transmission corridors associated with the Turkey Point Units 3 and 4 (FPL personal communication).

4.0 List of Species Potentially Present at or Near the Project Site

There are approximately 23 federally listed endangered or threatened species (Table 1), and an additional 8 species that are currently candidates for federal listing (Table 2) at or near the Turkey Point site and associated transmission lines. The species listed in Tables 1 and 2 were obtained from the U.S. Fish and Wildlife Service (FWS) / Vero Beach web site in January 2001 (FWS 2001a), from the National Marine Fisheries Service (NMFS) website in July 2001 (NMFS 2001a), from the Florida Natural Areas Inventory (FNAI) in February 2001 (FNAI 2001), from the South Florida Multi-Species Recovery Plan (FWS 1999a), from data provided by FPL as part of their license renewal application, and from the data within the Florida Geographic Data Library as of February 2001 (FGDL 2001). Included in Table 1 are all of the Federally listed endangered or threatened species reported to occur within Miami-Dade County, Florida.

Table 1. List of Federal Endangered or Threatened Species Potentially Occurring at or Near the Turkey Point Site or Associated Transmission Lines

Species	Common Name	Federal Status ¹
<i>Crocodylus acutus</i>	American crocodile	E
<i>Alligator mississippiensis</i>	American alligator	T(S/A)
<i>Chelonia mydas</i>	green turtle	E
<i>Dermochelys coriacea</i>	leatherback sea turtle	E
<i>Eretmochelys imbricata</i>	hawksbill sea turtle	E
<i>Caretta caretta</i>	loggerhead sea turtle	T
<i>Drymarchon corais couperi</i>	eastern indigo snake	T
<i>Ammodramus maritimus mirabilis</i>	Cape Sable seaside sparrow	E
<i>Charadrius melodus</i>	piping plover	T
<i>Haliaeetus leucocephalus</i>	bald eagle	T
<i>Mycteria americana</i>	wood stork	E
<i>Rostrhamus sociabilis plumbeus</i>	Everglades snail kite	E
<i>Sterna dougallii dougallii</i>	roseate tern	T
<i>Felis concolor coryi</i>	Florida panther	E
<i>Trichechus manatus</i>	West Indian manatee	E
<i>Heraclides aristodemus ponceanus</i>	Schaus swallowtail butterfly	E
<i>Amorpha herbacea var crenulata</i>	crenulate leadplant	E
<i>Chamaesyce deltoidea adhaerens</i> and <i>C. deltoidea deltoidea</i>	deltoid spurge	E
<i>Chamaesyce garberi</i>	Garber's spurge	T
<i>Galactia smallii</i>	Small's milk pea	E
<i>Halophila johnsonii</i>	Johnson's seagrass	T
<i>Jacquemontia reclinata</i>	beach jacquemontia	E
<i>Polygala smallii</i>	tiny polygala	E

¹ Status codes: E = endangered, T = threatened, T(S/A) = Threatened due to similarity of appearance.

Table 2. List of Federal Candidate Species Potentially Occurring at or Near the Turkey Point Site or Associated Transmission Lines

Species	Common Name	Federal Status ¹
<i>Rivulus marmoratus</i>	mangrove rivulus	C
<i>Pristis pectinata</i>	small-toothed sawfish	C
<i>Argythamnia blodgettii</i>	Blodgett's wild-mercury	C
<i>Brickellia eupatorioides</i> var <i>floridana</i> (= <i>B. mosieri</i>)	Florida thoroughwort brickell-bush	C
<i>Chamaesyce deltoidea pinetorum</i>	pinelands spurge	C
<i>Digitaria pauciflora</i>	few-flowered crabgrass	C
<i>Linum carteri</i> var <i>carteri</i>	Carter's small-flowered flax	C
<i>Linum arenicola</i>	sand flax	C

¹ Status codes: C = federal candidate species.

Several of the species listed in Table 1 have had Critical Habitat designated by the FWS or NMFS near the Turkey Point site or within Miami-Dade County. These species include:

- American crocodile critical habitat includes all land and water south of a line from Turkey Point to Christmas Point on Elliot Key (FWS 1999a).
- Everglades snail kite has critical habitat designated north and west of the Turkey Point site and associated lines (FWS 1999a).
- Cape Sable seaside sparrow critical habitat is west of the Turkey Point Site, primarily within the Everglades National Park just west of Homestead, Fl (FWS 1999a).
- Piping plover critical winter areas are not located within Miami-Dade County, but have been designated within Monroe County, the Florida Keys, and in Palm Beach County north of the project areas (FWS 2000).
- West Indian manatee critical habitat includes Biscayne Bay, Card Sound and connecting waters south from the northern tip of Key Largo and adjacent Miami-Dade County on the mainland (FWS 2001b). This area includes the state drainage canals immediately south of the cooling canal system.
- Johnson's seagrass critical habitat includes the northern-most portions of Biscayne Bay (NMFS 2001b).

5.0 Inventories and Surveys

FPL commissioned a survey of the transmission corridors associated with Turkey Point Units 3 and 4 during the Spring of 2001 (Cotleur and Hearing 2001). The biologists mapped the vegetation types throughout the corridors, and surveyed all portions of the corridors to a degree commensurate with the likelihood of habitation by species of concern. For instance, areas currently used as orchards were given cursory surveys focusing on wildlife species, whereas areas with natural vegetation were surveyed using pedestrian transects spaced at 1.5 m (5 ft) to 4.5 m (15 ft) intervals.

The only federally listed species observed during these field surveys was a single wood stork that was observed standing in an access road near Biscayne Bay National Park. No federally listed plant species were observed during the surveys, but several plant species listed as endangered, threatened, or commercially exploited by the Florida Fish and Wildlife Conservation Commission / Florida Department of Agriculture (FFWCC 1997) were observed.

6.0 Individual Species Descriptions and Assessments

In the following sections, the potential effect of continued operations of Turkey Point Units 3 and 4 and associated transmission lines is evaluated for each of the species listed in Table 1. Each section provides a brief description of the species, its life history, present distribution and status, and threats to continued existence. Turkey Point Units 3 and 4 are then evaluated in regard to these data to derive effects conclusions for each species. Most of the life history, distribution, status, and trend information is based on information provided in the South Florida Multi-Species Recovery Plan (FWS 1999a), and unless otherwise specifically stated, it can be assumed that the recovery plan is the implied reference for the information presented.

6.1 American Crocodile (*Crocodylus americanus*)

The American crocodile is one of two crocodylians native to the United States, the other being the American alligator (see Section 6.2 for a discussion of that species). Its range includes coastal areas of the Americas from northern South America to south Florida. In Florida, its historic range was from Key West north to Lake Worth on the east coast and Tampa Bay on the west coast. Currently, the population is limited to Miami-Dade, Monroe, Collier, and Lee Counties. The American crocodile is a coastal species, preferring mangrove habitats, bays, creeks, and swamps. Crocodiles move seasonally between preferred nesting, non-nesting, and wintering habitats. Nesting occurs on sandy shorelines or marl creek banks, including the berms of the Turkey Point cooling canal system. Although primarily an estuarine species, crocodiles require access to freshwater, whether these are low salinity ponds, creek effluents, rainwater pools, or rainwater lenses. Holes, undercut banks, and the roots of mangroves and other trees provide protection for both adults and juveniles, and deep water areas adjacent to nesting and resting habitats are important for adults. Individuals of the species are mobile, moving seasonally between preferred habitats. In the non-nesting season and winter, crocodiles may move inland. Crocodiles eat a wide variety of food items, including crabs, fish, birds, small mammals, and other crocodylians.

Historically, human threats to the American crocodile have included hunting, land development and urbanization, and human activity. Habitats have been reduced and fragmented, and water quality and water flows have been altered. Crocodiles are killed by vehicles as animals cross roadways. Human recreational activities in coastal and estuarine areas can disturb crocodile behavior, including nesting. In Florida, nest defense by females is variable, but parental assistance is necessary for successful hatching. Females do not care for the young after hatching. Important factors in nest failure are desiccation, predation, and flooding. Sources of natural mortality include severe weather, such as tropical storms and hurricanes, lack of freshwater, predation, and low temperatures. Young crocodiles are eaten by birds, crabs, fish, and other crocodiles. From perhaps 1000 to 2000 individuals in the early 20th century, populations declined to about 100 to 400 non-hatchlings by the 1960s and 1970s. In the last 25 years, populations have increased to about 500 to 1000 individuals. The number of observed nests has also increased in recent years to about 50 (FWS 1999a, ESandE, Inc 2000).

The American crocodile was first observed in the Turkey Point cooling canal system in 1978, four years after completion of the canals. Preferred habitats are adjacent to the interceptor ditch in the south and southwestern portion of the system, where nests, juveniles, and adults are found. Crocodiles move freely into and out of the Turkey Point cooling canal system. During 1999 and 2000, 15 and 17 nests, respectively, were recorded. These nests produced about 300 young (FPL, personal communication). The resident adult population is on the order of 30 to 40 individuals. Likely food sources for crocodiles in the canal system are small fish, crabs, wading birds, and other crocodiles. The crocodile population in the cooling canal system is relatively undisturbed, since the area is closed to the public and activities are limited to canal maintenance and crocodile research.

Several features of the cooling canal system provide good crocodile habitat. These include warm temperatures during the winter, relative isolation from human activity, and preferred nesting habitat (raised banks above the high water line near deeper water). Although the water of the canal system is hypersaline, fresh water collects in small depressions on the berms between the canals. The freshwater pools on the berms are important juvenile rearing habitats (FPL, personal communication).

FPL has prepared an ecological risk assessment for the crocodile in the cooling canal system (ESandE, Inc. 2000). That study concluded that the Turkey Point population is growing and reproducing successfully. Hypersalinity does not adversely affect the growth of hatchlings. Potential chemicals of concern are not elevated above concentrations in reference populations in other areas. Operation of the Turkey Point plant is contributing to the increase in the American crocodile in Florida. A substantial portion of crocodile nesting occurs in the Turkey Point cooling canal system, where about 15 nests are recorded annually. Numbers of nests increase at a rate of about 1 per year. These nests produce about 300 hatchlings, or more than 50% of known hatchling production in the region (ESandS, Inc. 2000). Crocodiles from the Turkey Point canal system emigrate to other areas; tagged juveniles from the Turkey Point canal system have been recaptured on Key Largo.

FPL has obtained state permits for research and carcass salvage. Since 1983, FPL has managed the site to protect crocodiles, including

- constraints on vehicular traffic at night and during critical periods of the nesting season
- constraints on road maintenance and construction at night and during critical periods of the nesting season
- coordination of canal dredging and maintenance with the Environmental Department
- marking and avoidance of disturbance of nest site sanctuaries
- training requirements for personnel handling hatchlings
- population monitoring programs.

Actions of continued operation that could affect the American crocodile population in the cooling canal system include:

- continued closure of the canals to access by the public (beneficial effect),
- research and monitoring activities (small adverse effect resulting in beneficial management practices)
- continued vegetation control, including exotic control (beneficial effect),
- continued maintenance of perched freshwater ponds on the berms (beneficial effect)
- hypersalinity of the canal water (offset by maintenance of freshwater pond - no effect).

Crocodiles are protected from impingement in the intakes of the nuclear units by two factors: the slow speed of water movement in the canals (less than 0.5 m/s [1.5 ft/s]) and the location of preferred crocodile habitat at the opposite end of the canal system from the nuclear and fossil units. Occasionally (four instances in 1998-2000), crocodile carcasses have been removed from the returning cooling water by the trash racks at the intake screens. The conditions of the carcasses indicate that the animals were dead prior to arrival at the intakes (FPL, personal communication).

Continued operation of the Turkey Point Units 3 and 4 for an additional 20 years beyond the current operating license period would continue to provide the habitat conditions in the cooling canal system that support a reproducing population of American crocodiles. Based on the information provided above, it is concluded that continued operation of Turkey Point Units 3 and 4 IS LIKELY TO HAVE A BENEFICIAL EFFECT on the American crocodiles during the license renewal term.

6.2 American Alligator (*Alligator mississippiensis*)

The American alligator is one of two native crocodylians in the United States, the other being the American crocodile (see Section 6.1 for a species account). Alligators inhabit rivers, swamps,

estuaries, lakes, and marshes; they may co-occur with the American crocodile in estuarine areas. The distribution of the American alligator extends from North Carolina to Texas. Alligators declined from over hunting and habitat destruction to the point that they were listed as endangered in 1967. Subsequent protection of the species has resulted in recovery of the population to the extent that it was delisted in 1987. However, the American alligator is considered threatened due to similarity of appearance to the American crocodile, which is listed as endangered.

Alligators are not found in the Turkey Point cooling canal system. Their distribution is limited to freshwater habitats to the west and south of the Turkey Point site, and in freshwater habitats crossed by the transmission line system. No individuals or nests of alligators were observed during a Spring 2001 survey of transmission line corridors. Individuals or nests may occasionally be disturbed by infrequent vegetation control measures in localized areas where transmission lines cross drainage canals.

Based on these considerations, it is concluded that the continued operation of Turkey Point Units 3 and 4 and the associated transmission lines during the license renewal period IS NOT LIKELY TO ADVERSELY AFFECT the American alligator.

6.3 Eastern Indigo Snake (*Drymarchon corais couperi*)

The eastern indigo snake is a large, dark colored, non-venomous snake that is widely distributed throughout Florida and southern Georgia; historically, it also inhabited much of the coastal plain of Alabama and Mississippi. The largest endemic population is centered in the sand hills of northern Florida and southern Georgia. In the northern populations, the distribution is closely linked with that of the gopher tortoise. The gopher tortoise burrows provide thermal refugia and help the snakes prevent dessication. In southern Florida, the more stable thermal regime reduces the snake's dependence on thermal refugia. In wetter habitats that lack gopher tortoises, indigo snakes may take shelter in hollowed root channels, hollow logs, or the burrows of other animals such as rodents, armadillos, and land crabs.

Indigo snakes appear to use a wide variety of habitat types in southern Florida. They are especially common in pine flatwoods, pine rocklands, and tropical hardwood hammocks, but they can be found in almost any type of undeveloped area. Home range size in south central Florida averages about 74 ha (183 ac) for males and about 19 ha (47 ac) for females. Indigo snakes will consume almost anything that they can overpower, including lizards, frogs, fish, other snakes, turtles, juvenile gopher tortoises, young alligators, birds, and small mammals. Juvenile indigo snakes prey primarily on invertebrates.

When the indigo snake was first listed as threatened by the FWS, the principal threats were considered to be over-collection for the pet industry and gassing of gopher tortoise burrows during the collection of rattlesnakes. Effective enforcement of protection laws has greatly reduced these threats. The development and alteration of vast portions of the available habitat is

now the leading threat to the indigo snake. The optimal quantity and distribution of land required to maintain viable populations is not known at this time, although some models suggest that preserves must be at least 4000 ha (9880 ac) to ensure survival of small populations.

Eastern indigo snakes are not common on the Turkey Point site, but they are resident in the area and are infrequently sighted. No indigo snakes or signs of snakes were observed during the surveys of the transmission line corridors, although FPL personnel reported that they are occasionally observed within the corridors. NRC staff and contractors observed a specimen of the Eastern indigo snake on the Turkey Point site during the December 2000 site visit. FPL maintains a handling permit issued by the Florida Fish and Wildlife Conservation Commission (WX01041) that allows them to move individuals out of danger when necessary. In addition, site personnel and contractor personnel (including transmission line and corridor maintenance personnel and sub-contractors) are required to attend training classes prior to starting work. Procedures are in place to ensure that indigo snakes are not harassed or killed during the course of routine activities, and any dead indigo snakes that are found are reported.

Based on these considerations, it is concluded that the continued operation of Turkey Point Units 3 and 4 and the associated transmission lines during the license renewal period IS NOT LIKELY TO ADVERSELY AFFECT the eastern indigo snake.

6.4 Schaus Swallowtail Butterfly (*Heraclides [=Papilio] aristodemus ponceanus*)

The Schaus swallowtail butterfly is a large, blackish-brown swallowtail with dull yellow contrasting markings. The adult wing span is approximately 8.6 to 9.5 cm (3.4 to 3.7 in).

This species occurs exclusively in subtropical dry forests known as hardwood hammocks. Suitable habitat can include areas that have been previously cleared, but have since regrown. Larger patches of hardwood hammock are now found only in the Upper Keys in Miami-Dade and Monroe Counties. Optimal habitat tends to be of higher elevation (3.0 m (10 ft) to 4.6 m (15 ft) above sea level), away from tidal waters, and has a mature overstory of trees such as gumbo-limbo (*Bursera simaruba*), pigeon plum (*Coccoloba diversifolia*), black ironwood (*Krugiodendron ferrum*), West Indian mahogany (*Swietenia mahagoni*), and wild tamarind (*Lysiloma latisiliquum*). The primary food plants for larvae are the torchwood (*Amyris elemifera*) and wild lime (*Zanthoxylum fagara*). The minimum patch size needed to successfully sustain a population is not known, but viable wild populations have been documented within areas as small as 4 ha (10 ac).

Schaus swallowtail historically was found in hardwood hammocks from south Miami to Lower Matecumbe Key. Presently, it is found in the Florida Keys from Elliot Key in southern Biscayne Bay, and in the Keys south and west to Lower Matecumbe Key in the Middle Keys. The species is currently known from 13 locations on the mainland and Upper and Middle Keys following

Appendix E

reintroduction efforts performed between 1995 and 1997. One of the release sites was on the Charles Deering Estate near south Miami; the rest were scattered in the Keys between northern Key Largo and Point Charles.

The species was originally described based on specimens collected in the south Miami area in the late 1800's, but wild specimens have not been collected on the mainland since 1924. Currently, it is most common on Elliot Key and other Keys within Biscayne National Park, and at a few sites on northern Key Largo. Between 1985 and 1990, the population on Elliot Key fluctuated between approximately 600 and 1000 annually, and 50 to 100 individuals were normally found on each of four other Keys within Biscayne National Park. Hurricane Andrew in 1992 temporarily reduced the number of individuals to approximately 58 in Biscayne National Park, but the population appears to have rebounded to at least 600. After the introduction performed between 1995 and 1997, the total number of individuals in the wild is at least 1200.

Schaus swallowtail was initially listed as threatened in 1976 because of population declines due to destruction of hardwood hammock habitat, mosquito control practices, and over-harvesting by collectors. It was reclassified as endangered in 1984 because of dramatic population and range reductions. The principal threats continue to be loss of habitat due to residential and commercial conversion, and introduction of pesticides, with some loss due to road kills, extreme climatic conditions, predation, parasites, and continued collection pressure.

Other than the Spring 2001 transmission corridor surveys, there have been no known surveys for the Schaus swallowtail butterfly in the vicinity of the Turkey Point site or associated transmission lines. The species was not observed during the 2001 survey, and the species is highly unlikely to occur within the project areas because the lack of tropical hardwood hammock habitat. Therefore, it is concluded that the continued operation of Turkey Point Units 3 and 4 and associated transmission lines during the license renewal term will have NO EFFECT on the Schaus Swallowtail butterfly.

6.5 Wood Stork (*Mycteria americana*)

The wood stork is a large (wingspan approx. 1.6 m (5.3 ft)), long-legged wading bird with a black featherless head. It is the only species within the stork family (Ciconiidae) in North America. Wood storks nest from Northern Argentina, through central America, Mexico, Cuba, and the southeast U.S. Currently, nesting sites in the United States are restricted to Florida, Georgia, and South Carolina. Wood storks nest in many south Florida counties, including Miami-Dade, Broward, and Monroe counties, but the nearest known nesting site to the Turkey Point site or transmission lines is in the Everglades National Park, at least 15 km (9 mi) from the transmission lines. Wood storks often nest communally with other wading birds such as white ibis, tri-colored herons, and snowy egrets. Bald cypress (*Taxodium distichum*) and red mangrove are the preferred trees for breeding colonies.

Wood storks rely on an unusual feeding behavior called tactolocation, in which they hold their mouth open under water. When they feel a fish, they quickly snap shut their bill to catch the fish. They will often stir the water with their feet to startle prey. Because of this feeding behavior, they require foraging areas with relatively high prey density. The natural hydrological regime in south Florida involves seasonal flooding of large flat areas followed by a drying period, which concentrates fish into smaller pools that can be exploited by wood storks.

Wood stork populations have shrunk considerably since the 1930's throughout the species range. Data suggest that the Florida population once included 15,000 to 25,000 breeding pairs and upward of at least 100,000 individuals, whereas more recent data from the early 1990's suggested only about 4000 to 7000 pairs. The data also indicate that the population in southern Florida has substantially declined since the 1960's, whereas the population in northern Florida, Georgia, and South Carolina has increased. The greatest current threat to wood storks in south Florida is the massive changes to the natural hydrological regime that have occurred throughout the everglades. During wet years, current water management practices prevent the formation of shallow pools that concentrate fish, and during dry years, freshwater sloughs are over-drained, and freshwater flows into estuaries are reduced, limiting fish production potential.

Wood storks are regular winter visitors in the vicinity of the Turkey Point site and portions of the transmission system. Although storks are observed in and around the cooling canal system, there are limited opportunities for wood stork foraging because the forage fish density is relatively low and the water stays at relatively constant levels; therefore, there is no mechanism to concentrate the fish into smaller pools. There are more suitable foraging areas near the transmission corridors north of the Turkey Point site, and numerous sightings between Turkey Point and Chapman Field Park have been reported (USAF 2000). The observations indicate that wood storks tend to forage along the mangrove fringe, in freshwater wetlands, and along roadside ditches. Nearly all wood stork sightings in the vicinity of Turkey Point are during the winter. One wood stork was observed during the Spring 2001 transmission corridor survey.

There have been no reported incidents of wood stork collisions with the transmission lines associated with Turkey Point Units 3 and 4. FPL has reported wood stork collisions with lower voltage distribution lines in Palm Beach County that are not associated with Turkey Point Units 3 and 4. These occurred in areas where the transmission lines were built near roosting areas with an associated higher concentration of storks and high number of stork flights beneath, over, through, or near the conductors and towers. FPL modified those lines to minimize the adverse impacts. FPL has a process in place for identification and reporting of bird collisions, which includes annual staff training (FPL, personal communication).

Based on the available information, it is concluded that the continued operation of Turkey Point Units 3 and 4 and the continued operation and maintenance of the associated transmission corridors during the license renewal term IS NOT LIKELY TO ADVERSELY AFFECT the continued existence of wood storks.

6.6 Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is a large raptor that occurs throughout North America. Some of the eagles observed in Florida are believed to migrate north during the Spring and summer, but many that breed in southeast Florida and the Everglades apparently reside in the area year round. Bald eagles are usually water dependent, and are typically found near estuaries, large lakes, reservoirs, major rivers, and along sea coasts. In Florida, bald eagles usually nest within 2.5 km (1.5 mi) of open water where they can forage. Pines and bald cypress are the most common tree species used for nests, although in Florida Bay and the Everglades many of the nests are in black and red mangroves. Nesting in south Florida typically occurs between late October and March. Fish and small water fowl are the most common prey.

The population of bald eagles in Florida has shown a steady increase over the last 25 to 30 years, growing from less than 100 successful nests in 1973 and 1974 to over 600 in 1995. This population increase has also been documented in most other parts of the species range, leading the FWS to propose complete delisting of the species (FWS 1999b).

In south Florida, the primary threats to the bald eagle include loss of habitat due to continued development and land use alterations, and other human interactions. Nesting eagles can be highly sensitive to human disturbance, and nest sites are often abandoned if the level of human activity is too high. Environmental contaminants contributed significantly to the rapid decline in the nation-wide eagle population that was observed between the 1940's and 1960's.

Bald eagles are occasionally observed at the Turkey Point site and the surrounding areas (AEC 1972; Connell Metcalf and Eddy, Undated). Nesting was reported in the vicinity of the cooling canal system prior to Hurricane Andrew in 1992 (NRC 1980). It is unlikely that bald eagles can successfully forage in the cooling canals because of low prey density. Nesting presently occurs in the Arsenicker Keys at the south end of Biscayne National Park, and in Barnes Sound south of the Turkey Point site. The Arsenicker Keys nesting site is approximately 3 to 5 km (1.9 to 3.1 mi) east of the Turkey Point cooling canals. Eagles are also regularly reported from the vicinity of Black Point, approximately 12 km (7.5 mi) north of the Turkey Point site and 3 km (1.9 mi) from the transmission lines, but no nesting has been documented in that area (USAF 2000). No bald eagles were observed during the Spring 2001 transmission corridor survey. There has been no reported occurrences of bald eagle collisions or electrocutions along the transmission corridors associated with Turkey Point Units 3 and 4 (FPL, personal communication).

Based on this information it is concluded that the continued operation of Turkey Point Units 3 and 4 and the continued operation and maintenance of the associated transmission lines IS NOT LIKELY TO ADVERSELY AFFECT bald eagles during the licence renewal term.

6.7 Cape Sable Seaside Sparrow (*Ammodramus maritimus mirabilis*)

Cape Sable seaside sparrows are medium-size, non-migratory sparrows found only in extreme southern Florida. They are presently found in Miami-Dade and Monroe counties, restricted to areas of marl prairies east and west of Shark River Slough and flanking Taylor Slough. The species feeds primarily on soft-bodied insects, spiders, marine worms, and shrimp, as well as grass and sedge seeds. The species nests from February through early August, primarily during the Spring months when the marl prairies tend to be dry.

The preferred nesting habitat appears to be a mixed marl prairie that often includes muhly grass (*Muhlenbergia filipes*). These areas tend to have short hydroperiods, and contain moderately dense, clumped grasses, with open space that permits ground movement by the sparrows. The Cape Sable seaside sparrow tends to avoid dense sawgrass communities, spike rush marshes, and long-hydroperiod wetlands with tall, dense vegetation, as well as sites supporting woody vegetation. Maintenance of suitable habitat may depend on periodic fires to reduce the amount of woody vegetation and to prevent excessive build-up of dead plant material.

Critical habitat was designated for the Cape Sable seaside sparrow in 1977, and includes areas located approximately 8 km (5 mi) northwest and 8 km (5 mi) west to southwest of the town of Homestead.

The overall population size has diminished in recent years. In 1981, the total population was estimated at 6656 individuals; in 1992, the number was approximately 6576. Since that time, the total number has dropped dramatically, to as low as approximately 2500 in 1996. In 1998, the total population was estimated at 3056 individuals. Much of the decline has occurred in the western population (west of Shark River Slough), which has decreased by over 90% since 1992. The primary cause of the decline appears to be water management practices within the Everglades.

Cape Sable seaside sparrows are not known to occur in the vicinity of the Turkey Point site or near the associated transmission lines (USAF 2000). The species was not observed during the Spring 2001 transmission corridor surveys. Also, the species was not observed during field studies supporting the Homestead Airforce Base Disposal EIS (USAF 2000). There are few areas near the project site that contain suitable marl prairie habitat, with most undeveloped areas being occupied by woody vegetation or denser sawgrass marshes. Cape Sable seaside sparrows may be sighted occasionally in the vicinity of the plant or transmission lines, but this would likely be lone, transient individuals. This species is not known to fly long distances, typically no more than 5 to 7 km (3 to 4 mi) during the non-breeding season. The longer flights normally end at the edge of the short-hydroperiod marl prairie habitats, and it has been suggested that deep water and forested areas are barriers to long-range movements.

Based on the lack of suitable habitat in the project vicinity and the lack of observations of the bird near the project vicinity, it is determined that the continued operation of Turkey Point Units

3 and 4 and the continued operation and maintenance of the associated transmission lines during the license renewal term will have NO EFFECT on the Cape Sable seaside sparrow.

6.8 Everglades Snail Kite (*Rostrhamus sociabilis plumbeus*)

The Everglades snail kite is medium-size hawk with a wing span of about 109 to 116 cm (43 to 46 in). The species feeds almost entirely on apple snails (*Pomacea paludosa*), and the kite has a slender, decurved bill that facilitates the extraction of the snails from their shells. The Florida subspecies (*R. sociabilis plumbeus*) is also found in Cuba and northwestern Honduras. Other subspecies range from Mexico to as far south as Argentina and Peru. The Florida population of snail kites is considered to be a single population with considerable changes in population density over time for a particular location.

The current distribution of the Everglades snail kite in Florida is limited to six large freshwater systems: the upper St. John's drainage, Kissimmee Valley, Lake Okeechobee, Loxahatchee Slough, the Everglades, and Big Cypress basin. Habitat consists of freshwater marshes and the shallow, vegetated edges of lakes. These habitats occur in the humid, tropical portions of the Florida Peninsula and are characterized as palustrine-emergent, long-hydroperiod wetlands. Foraging habitat is normally relatively low profile marsh (vegetation height < 3 m (10 ft) above water level) with a matrix of shallow, clean; clear, open water. The snail kite forages by sight; therefore, it requires clear water, and dense woody overgrowth or dense floating vegetation reduces the ability of snail kites to locate apple snails. Nesting and roosting almost always occurs over water, usually in willow (*Salix* sp.) cypress, or other native trees and shrubs, but can also occur in exotic species such as Melaleuca and Brazilian pepper. Nesting also can occur in herbaceous vegetation such as sawgrass, cattails, bulrush, and reeds.

The snail kite nearly went extinct during the 1960's; only 10 birds were found in 1965. Therefore, it was included in the first group of species protected under the Endangered Species Act in 1967. The total number of birds has increased since the late 1960's with nearly 1000 identified during 1994 surveys. Critical habitat for the Everglades snail kite was designated in 1977. Designated areas include the Western shores of Lake Okeechobee, and much of the area to the west of the highly developed corridor from West Palm Beach to south Miami. In Miami-Dade County, designated critical habitat is restricted to areas west of the L-67 canal system, approximately 32 to 48 km (20 to 30 mi) west of downtown Miami.

The primary threat to the Everglades snail kite is loss of habitat due to increased drainage and land development. Drainage of freshwater marshes reduces the suitable habitat for the apple snails that, in turn, limits the populations of snail kites. Other threats include increased infestation of habitat areas with exotic plant species such as water hyacinth (*Eichornia crassipes*), which reduce the ability of the kites to find prey.

Everglades snail kites have not been observed in the vicinity of the Turkey Point site or associated transmission lines, although the presence of occasional transient individuals is

possible. The species was not observed during the Spring 2001 transmission corridor surveys. The species is not known to regularly inhabit locations east of the Miami Ridge. It was not observed during field investigations supporting the Homestead Air Force Base EIS (USAF 2000), nor has it been observed in Biscayne National Park (BNP 1998). The snail kite is not likely to utilize the Turkey Point cooling ponds because the hypersaline conditions are not conducive to apple snail, which requires freshwater.

Based on the currently available information, it is determined that the continued operation of Turkey Point Units 3 and 4 and the continued operation and maintenance of the associated transmission lines during the license renewal term will have NO EFFECT on the Everglades snail kite.

6.9 Piping Plover (*Charadrius melodus*)

The piping plover is a small, migratory shorebird that winters along the Atlantic and gulf coasts of Florida. There are three main breeding populations of piping plovers in North America -- along the northeast Atlantic coast, the Great Lakes, and riverine systems in the northern Great Plains. All three breeding populations winter in Florida.

Critical wintering habitat for piping plovers in Florida was proposed in July 2000 (FWS 2000). Designated areas in extreme southern Florida include several sites from the vicinity of Fort Myers south to Marco Island on the Gulf coast, a small site near St. Lucie Inlet on the Atlantic coast approximately 193 km (120 mi) north of the Turkey Point site, and a number of sites in the Florida Keys from the Marquesas Keys in Key West National Wildlife Refuge to Lower Matecumbe Key, as well as Sandy Key and Carl Ross Key in Florida Bay.

While wintering, piping plovers appear to prefer land forms that provide tidal flats for foraging and open beaches for roosting in close proximity of each other. They feed primarily on marine, freshwater, and terrestrial invertebrates.

Although the Turkey Point site is located very near to the shore of Biscayne Bay, the plant has very little, if any, effect on the shoreline, tidal flats, or near shore waters. There are no activities related to relicensing that occur on the shoreline or in the waters of Biscayne Bay; therefore, it is unlikely that plant operations will effect any foraging or roosting areas. Piping plovers have not been reported from the Turkey Point vicinity, and have been reported only four times from Biscayne National Park (BNP 1998). Plovers were not observed during the Spring 2001 transmission corridor survey.

Based on these considerations, it is determined that the continued operation of Turkey Point Units 3 and 4 and the operation and maintenance of the transmission lines will have NO EFFECT on the continued survival of piping plovers during the license renewal term.

6.10 Roseate Tern (*Sterna dougallii dougallii*)

The roseate tern is an exclusively coastal, medium-size marine water-bird with a slender body and a forked tail. In North America, the subspecies consists of two distinct breeding populations: one in the northeast U.S. and Nova Scotia, and the other centered in the Caribbean. The species nests colonially on open sandy beaches isolated from human disturbance, although a variety of substrates may be used. In Florida, roseate terns typically nest on isolated islands, rubble islets, dredge-spoil, and the occasional rooftop; they rarely breed on larger islands. Roseate terns normally forage in the near shore surf for small, schooling marine fish.

The Caribbean population of roseate terns breeds from Florida through the West Indies to islands off the coasts of Central and South America, often in mixed colonies with least terns. There have been no thorough compilations of the size of the Caribbean population since the early 1980s. In the early 1990s, there were approximately 350 to 370 breeding pairs in Florida, mostly in the Lower Keys. The primary threats include predation by a number of other birds, feral cats, snakes, and black rats; destruction of nests by storms or tidal flooding; human interference during nesting; and habitat alteration and destruction. In some areas the eggs are gathered as food by humans.

Although the Turkey Point site is located very near to the shore of Biscayne Bay, the plant has very little, if any effect on the shoreline or near shore waters. There are no activities related to relicensing that occur on the shoreline or in the waters of Biscayne Bay; therefore, it is unlikely that plant operations will affect any natural nesting or foraging areas. However, it is possible that individuals will occasionally fly over or near the cooling canal system. Roseate terns were not observed during the Spring 2001 transmission corridor survey.

Based on this information, it is determined that the continued operation of Turkey Point Units 3 and 4 and associated transmission lines will have NO EFFECT on the continued existence of the roseate tern during the license renewal term.

6.11 Florida Panther (*Felis concolor coryi*)

The Florida panther is a large cat, typically reaching a total length of approximately 2.15 m (7 ft) and weighing approximately 50 to 65 kg (110 to 143 lb). Although this species once ranged throughout the southeastern U.S., there are only approximately 30 to 50 adults surviving in the wild. Because of this, the Florida Panther is considered one of the most endangered large mammals in the world. It is one of approximately 27 to 30 subspecies of mountain lion or puma (*Felis concolor*).

Florida panthers utilize a variety of habitat types, but appear to prefer the use of mixed swamp forest, hammock forests, and pine flatwoods over wetlands and disturbed habitats. The primary prey species are white tailed deer (*Odocoileus virginianus*), wild hogs (*Sus scrofa*), and to some extent, raccoons (*Procyon lotor*) and armadillos (*Dasypus novemcinctus*).

The only known, reproducing population is located in the Big Cypress Swamp / Everglades physiographic region of south Florida, with the breeding population centered in Collier, Hendry, and Miami-Dade Counties. Radio-collared panthers have been tracked throughout much of south Florida. Some of the collared individuals have been tracked as recently as the late 1980s or early 1990s in the undeveloped areas immediately west of the Turkey Point site (USAF 2000).

Principal threats to the Florida panther include habitat loss and fragmentation, human-related disturbances and mortality, disease, and genetic degradation due to the extremely small population size. Panthers tend to avoid developed roadways, and usually do not establish home ranges that are bisected by highways. Maternal dens are usually located at least 1 km (0.6 mi) or more from highways. Vehicle collisions are the most often documented cause of mortality for Florida panthers, although the relative significance of highway deaths compared to other sources of mortality is not known.

Florida panthers are extremely rare in the vicinity of the Turkey Point site and transmission lines, primarily because of limited amounts of the preferred forest and flatwood habitats and a preponderance of swamp and wetland habitats. Radio-collared individuals have been detected in the general vicinity (USAF 2000) but not on the Turkey Point site itself. No scat, tracks, or other signs were observed during the Spring 2001 transmission corridor survey. There have been unconfirmed sightings within various FPL transmission corridors by maintenance workers (FPL personal communication), but it is not known if any of these were within transmission corridors associated with Units 3 and 4. There is no indication that usage of the Turkey Point area by Florida panthers would be different if the nuclear facilities were not present, and the local roads probably represent a greater hazard to those panthers that may rarely venture into the area. Therefore, it is determined the continued operation of Turkey Point Units 3 and 4 and the continued operation and maintenance of the associated transmission lines during the license renewal term will have NO EFFECT on the Florida panther.

6.12 West Indian Manatee (*Trichechus manatus*)

The West Indian manatee is a large aquatic mammal that inhabits both fresh and saltwater environments. Adults average 3 m (10 ft) long and weigh up to 450 kg (1000 lb). They locomote with large, rounded, horizontally-flattened tails and, although appearing sluggish, they are strong swimmers. Manatees are vegetarians, consuming aquatic and marine algae and higher plants. They are social and communicate with sounds audible to human ears. A female may give birth to one offspring about every three years. Approximately 1800 manatees live in Florida. In south Florida, manatees are found in the canals, bays, tidal channels, harbors, shallow bays, and coastal waters. In northern Florida and southern Georgia, they are found in warm water outfalls. Individuals may move north of that range during warm weather. In the winter, some individuals move to Springs seeking warmer water. Manatees are sensitive to the cold, and may be killed by cold weather. Other sources of mortality include injuries from collisions with water craft, adverse weather, loss of habitat, and periodic red tides.

In the vicinity of the Turkey Point site, manatees are found in Biscayne Bay, in the boat basin adjacent to the fossil units at the Turkey Point site, and in the Florida State drainage canals to the south of the Turkey Point cooling canal system. Manatees are not found in the Turkey Point cooling canal system.

There are no aspects of operation of Turkey Point Units 3 and 4 that would affect manatees. The nuclear units do not receive or deliver goods by barge through Biscayne Bay. Barge traffic to and from the Turkey Point site is associated with operation of the fossil units. Turkey Point Units 3 and 4 do not discharge any effluent or heated water to waters where manatees are found.

Based on these considerations, it is concluded that the continued operation of Turkey Point Units 3 and 4 and the associated transmission lines during the license renewal period will have NO EFFECT on the West Indian manatee.

6.13 Sea Turtles

Five species of sea turtles are found in Florida waters: the green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempii*), loggerhead sea turtle (*Caretta caretta*), and leatherback sea turtle (*Dermochelys coriacea*).

The green sea turtle is a large sea turtle, reaching 1 m (3 ft) in length and over 135 kg (300 lb) in weight. They can be found on oceanic beaches during nesting, in the convergence zones of pelagic habitats, and in shallow coastal waters with abundant sea grass and algae. In Florida they nest on ocean beaches on the east coast. Although the highest numbers of nests are found north of Miami, nests have been observed in Miami-Dade County and Monroe County.

The hawksbill sea turtle is a small to medium-size sea turtle. It is rare in Florida. Nesting has been reported from Broward, Miami-Dade, Martin, Monroe, Palm Beach and Volusia counties. Nesting has been reported on Soldier Key, a mangrove island in the northern portion of Biscayne Bay National Park. Hawksbill sea turtles forage in pelagic convergence zones and on coral reefs, although they are also known from mangrove habitats. Their main diet in oceanic habitats is sargassum and other floating organic material; in coastal waters their main diet item is sponges.

Kemp's ridley sea turtle is one of the smallest sea turtles. The major population of this turtle is in the Gulf of Mexico. Nearly the entire population nests on one location in Mexico; rarely it nests in Florida in Pinellas, Lee, and Volusia Counties. However, juveniles and adults have been found along the eastern coast. In pelagic areas, the major food item is sargassum; however, in shallow areas they feed on crabs.

The loggerhead sea turtle is the most common sea turtle in south Florida. It is found in temperate and tropical waters worldwide. It is known to nest in all Florida coastal counties, but particularly in the counties north of Miami-Dade. Primary prey items include a variety of invertebrates such as gastropods, pelecypods, decapods, and cephalopods.

The leatherback sea turtle is the largest sea turtle. It is found in the Atlantic, Pacific, and Indian Oceans. The species is the most pelagic of all species and migrates widely. In Florida it nests on the east coast south to Miami-Dade County. The distribution of juveniles is unknown. Leatherback sea turtles feed on pelagic jellyfish and salp and siphonophore colonies.

Sea turtles are threatened by development of beach habitats, by human disturbance, predation on nests and hatchlings by terrestrial animals, predation on juveniles and adults by fish, by entanglement in fishing nets, collisions with water craft, ingesting undigestable trash, and poaching. Lighting, beach nourishment, beach armoring, human presence, and exotic vegetation can all interfere with nesting.

Sea turtles are found in waters of Biscayne Bay and Card Sound, and all five species could be found there. Sea turtles could potentially be found in the boat basin used to deliver oil to the fossil units. This basin is not part of the operations of the nuclear units. Sea turtles are not known to nest on the shoreline of Biscayne Bay adjacent to the Turkey Point site. The canal system is not suitable habitat for nesting. No sea turtles have been observed or captured from the canal system.

Based on these considerations, it is concluded that the continued operation of Turkey Point Units 3 and 4 and the associated transmission lines during the license renewal period will have NO EFFECT on any species of sea turtles.

6.14 Johnson's Seagrass (*Halophila johnsonii*)

Johnson's seagrass is a small seagrass that grows in shallow estuaries and lagoons. It is known only from the southeastern coast of Florida from Sebastian Inlet to Virginia Key in northern Biscayne Bay. This seagrass has a greater depth range than other seagrasses and has a high tolerance for low light levels and fluctuating salinity. However, storms, erosion, and siltation are threats. Other threats are dredging, prop scouring and anchor mooring, shading, and altered water quality. The limited distribution increases the risk of extinction from chance events.

The Turkey Point site is south of the known distribution for this species. Surveys of the cooling canal system soon after their construction did not identify this species among the seagrasses present.

Based on these considerations, it is concluded that the continued operation of Turkey Point Units 3 and 4 and the associated transmission lines during the license renewal period will have NO EFFECT on Johnson's seagrass.

6.15 Crenulate Leadplant (*Amorpha herbacea* var. *crenulata*)

The crenulate leadplant is a perennial, deciduous shrub in the pea family. It is rhizomatous and grows to a height of approximately 1.5 m (4.9 ft). The species is endemic to Miami-Dade

County, with a historic distribution covering about 155 km² (60 mi²). The current range covers less than 52 km² (20 mi²), and is primarily in the vicinity of Coral Gables and Kendall, Florida.

Crenulate leadplant grows in areas that were historically associated with seasonally hydrated soils and frequent burning, including wet pinelands, transverse glades, and the edges of hammocks. It primarily occurs in poorly-drained Opalocka sands within the Miami pine rocklands, and in wet prairies with Opalocka-rock outcrop complex soils. The species grows in open sun to partial shade.

Crenulate leadplant is currently known from eight locations, including four sites owned by the Miami-Dade County Parks Department. The other sites are in an assortment of settings but do not appear to be well protected or actively managed. All the known populations are located at least 5 km (3 mi) east of the transmission corridor between the Davis and Flagami substations.

As with most of the Miami ridge endemic plant species, the major threat to the crenulate leadplant is the loss of habitat due to urban expansion. At least 98% of the historic pine rockland habitat has been converted to other uses. The small fragments that remain are highly susceptible to weedy species encroachment and are difficult to manage appropriately. The crenulate leadplant, like most of the other pine rockland plant species, relies on a regular burning cycle of from 3 to 15 years to minimize overstory canopy coverage and to control organic litter buildup.

All the known populations of crenulate leadplant and the entire presumed historical distribution are located at least 5 km (3.1 mi) to the east of the northern portions of the transmission lines associated with Turkey Point Units 3 and 4. Therefore, it appears unlikely that the crenulate leadplant will occur at the Turkey Point site or within the transmission corridors. This species was not observed within the corridors during the Spring 2001 surveys. Based on the present and historical distribution, and the lack of observations within or near the transmission corridors, it is determined that the continued operation and maintenance of Turkey Point Units 3 and 4 and associated transmission lines during the license renewal term will have NO EFFECT on the continued existence of the crenulate leadplant.

6.16 Deltoid spurge (*Chamaesyce deltoidea deltoidea* and *C. deltoidea adhaerens*)

The deltoid spurge is a small, prostrate to decumbent herb that forms mats over exposed limestone. There are three subspecies of deltoid spurge of regulatory interest in the vicinity of the Turkey Point site. The subspecies *C. deltoidea deltoidea* and *C. deltoidea adhaerens* were included within the original 1985 federal listing. The *C. deltoidea pinetorum* subspecies is currently a candidate for federal listing.

Deltoid spurge normally occurs in areas with little or no organic litter accumulation, over exposed limestone, and with an open shrub canopy. It can be found at the edges of sand pockets, growing on both the oolite limestone and in the sand, sometimes in association with the endangered tiny polygala. The *C. deltoidea adhaerens* occurs in fine, reddish sandy loam over

limestone. Dense colonies of deltoid spurge can also be found in pinelands that have undergone mechanical disturbance such as scraping. The plants can develop in areas with little or no topsoil and where productivity is low. These disturbed areas often have very little shrub canopy, allowing for high light levels and low organic litter accumulation.

Chamaesyce deltoidea deltoidea is known from at least 19 sites, all generally north of the Goulds area south of Miami. Historically, it was known from as far north as the center of the city of Miami. *C. deltoidea adhaerens* is known from approximately 12 sites in the Redland form of pine rocklands southwest of Goulds. The *Chamaesyce deltoidea pinetorum* appears to occur even farther southwest, from the Homestead / Florida City, Florida, vicinity to Long Pine Key in Everglades National Park.

As with all of the endangered or threatened plant species endemic to the Miami ridge pine rocklands, the major threat to the deltoid spurge is the loss of suitable habitat due to the conversion of the remaining habitat fragments to agriculture, residential, or commercial development. The remaining habitat fragments are mostly very small and highly susceptible to invasion by aggressive, weedy exotic species such as Burma-reed (*Neyraudia reynaudiana*), Brazilian pepper, and others. Most of the rare pine rockland species appear to depend on a regular fire regime with a burn frequency of from 3 to 15 years to minimize the development of a thick wood overstory and to minimize organic litter accumulation.

There are known populations of both the *C. deltoidea deltoidea* and *C. deltoidea adhaerens* subspecies within 1.5 km (1 mi) of the transmission corridors associated with Turkey Point Units 3 and 4, and there are potential habitat areas within or adjacent to the corridors at several locations. However, neither of the listed subspecies of *C. deltoidea* were observed during the surveys of the transmission corridors performed during the Spring of 2001. Therefore, it is concluded that the continued operation of Turkey Point Units 3 and 4 and continued operation and maintenance of the associate transmission lines is **NOT LIKELY TO ADVERSELY AFFECT** the continued existence of the deltoid spurge.

6.17 Garber's Spurge (*Chamaesyce garberi*)

Garber's spurge is a prostrate, short-lived perennial herb that is restricted to Miami-Dade and Monroe counties. It has been found in pine rocklands, coastal flats and grasslands, and beach ridges. Some local populations are relatively large but they are disjunct and widely separated. Garber's spurge requires open sunny areas, and appears to rely on periodic fires to maintain habitat suitability. It tends to occur at low elevations on thin soils, either Pamlico sands or directly on limestone. In pine rocklands it may grow out of crevices in oolitic limestone.

Garber's spurge is most abundant on Cape Sable, and it probably occurs in small populations throughout the Keys. Larger populations have been reported from Long Pine Key in Everglades National Park and Big Pine Key. Historically, it also occurred in pine rocklands near Perrine,

south of Miami, and a population was found in that area following a fire on the Charles Deering Estate, but that population appears to be decreasing.

The primary threats to Garber's spurge are loss of suitable habitat and invasion of exotic species. Most of the pine rockland habitat in Miami-Dade County has been converted to agricultural, residential, or commercial uses. Much of the remaining potential habitat areas have been heavily invaded by exotic species. The Cape Sable populations have been seriously threatened by invasive species.

Most of the known populations of Garber's spurge are located well to the south and southwest of the Turkey Point site and transmission lines. It could occur along certain portions of the transmission corridors, but most of the suitable substrates are currently used for agriculture. Garber's spurge was not observed during the Spring 2001 surveys of the transmission line corridors.

Considering that this species was not observed during the recent site surveys, and that there are no known populations in the near vicinity of the Turkey Point site or associated transmission lines, it is determined that the continued operation and maintenance of Turkey Point Units 3 and 4 and associated transmission lines will have NO EFFECT on the continued existence of the Garber's spurge.

6.18 Tiny Polygala (*Polygala smallii*)

Tiny polygala is a short-lived herbaceous species, often completing its life cycle within one year. It forms small rosettes and grows no more than 8 cm (3.1 in) tall. Once thought to be endemic to Broward and Miami-Dade Counties, it is now known from at least 11 sites from Miami to St. Lucie County. All of the known sites are located within 9.7 km (6 mi) of the Atlantic coast. Tiny polygala is found in pine rocklands, open sand pine scrub, slash pine, high pine, and well drained coastal spoil. Regardless of the general vegetation community type, it requires high light levels and open sand, with little to no organic litter accumulation.

In Miami-Dade County, tiny polygala occupy sand deposits within pine rocklands that are primarily in the central to southern portion of the county. The sand deposits are interspersed throughout the Opalocka rock outcrop soil complex. Plants were not found in sands less than 2 cm (0.8 in) deep or in areas with more than 2.5 cm (1 in) of organic litter.

Populations reported within Miami-Dade County include the Charles Deering Estate, the Ludlam Pineland tract (including a non-Turkey Point associated transmission corridor), Ned Glenn Preserve (where it co-occurs with Small's milkpea (*Galactia smallii*)), and in Pine Shore Park (IRC 2001 - website database). The Pine Shore Park population is located approximately 0.5 km (0.3 mi) north of the Turkey Point transmission corridors, approximately 2.5 km (1.5 mi) east of the Davis substation.

Principal threats to tiny polygala include habitat loss due to urban expansion, fire suppression, and exotic species infestations. Most of the historic habitat for tiny polygala has been lost to development, leaving small, isolated habitat fragments. These small areas are difficult to manage because they are easily invaded by weedy species, and it is difficult to maintain natural fire cycles. Many of the habitat fragments are in the midst of residential areas where regular burning can be difficult and / or highly unpopular.

If tiny polygala occurs within the Turkey Point transmission corridors, it appears to be most likely in the general vicinity of the Davis substation and potentially in other areas along the line between Davis and the Flagami substation. However, no individuals were observed during the Spring 2001 field survey of the transmission corridors.

Based on these considerations, including the existence of known populations relatively close to the transmission corridors, it is determined that the continued operation and maintenance of Turkey Point Units 3 and 4 and associated transmission lines is **NOT LIKELY TO ADVERSELY AFFECT** the continued existence of the tiny polygala.

6.19 Small's milkpea (*Galactia smallii*).

Small's milkpea is a prostrate, leguminous vine that may cover an area of up to 4 m (13 ft) in diameter. This species is primarily known from the Redland form of pine rocklands in Miami-Dade County. The Redland pine rocklands extend from Long Pine Key on the south to approximately SW 216 Street in the vicinity of Cutler Ridge. The distribution of Small's milkpea appears to be correlated with soil depth and color, and it prefers areas with relatively low shrub cover. It does not occur in sites with high amounts of exotic plant cover such as Australian pine and Burma reed (*Neyraudia reynaudiana*).

When this species was originally listed as endangered in 1985, there were only two known populations, both located near Homestead, Florida. Since the initial listing, several additional populations have been located, including three remnant pine rockland stands on the former Homestead Airforce Base (USAF 2000), Pine Island -- approximately 0.8 km (0.5 mi) south of the intersection of the Turkey Point transmission lines and the Homestead extension of the Florida Turnpike, and the Goulds rocklands -- approximately 2.1 km (1.3 mi) east of the transmission lines between Homestead and Cutler Ridge. Most of the publicly owned populations are actively managed by the Miami-Dade County Park and Recreation Department. Small numbers of Small's milkpea have also been reported on privately owned rockland fragments. Most of these small sites have not been well managed and are invaded by exotic vegetation that threatens the continued existence of the milkpea on these sites.

The greatest threats to Small's milkpea are habitat destruction and invasion of exotic species. Over 98% of the original pine rockland communities have been converted to agricultural, residential, or commercial uses. Much of the remaining rockland habitat is highly susceptible to invasion by aggressive exotic species such as Australian pine and Burma reed. Pine rockland

communities also require periodic fires to minimize organic buildup, and to reduce overstory canopy cover.

The Turkey Point transmission system intersects the known distribution of Small's milkpea in the area between the former Homestead Air Force Base and Cutler Ridge. Most of the land within the transmission corridors in this area is currently used for row crops, citrus plantations, and plant nurseries. It is possible that there are small, isolated remnants of suitable habitat within the corridors. However, no individuals were observed during the Spring 2001 field surveys of the transmission line corridors.

Based on the available information, it is determined that the continued operation and maintenance of Turkey Point Units 3 and 4 and associated transmission lines is **NOT LIKELY TO ADVERSELY AFFECT** the continued existence of Small's milkpea.

6.20 Beach Jacquemontia (*Jacquemontia reclinata*)

The beach jacquemontia is a small vine that is endemic to the coastal barrier islands of southern Florida. The vines tend to be relatively short (~1 m [3 ft]), but are woody at the base and may twine over other plants. The beach jacquemontia inhabits coastal strand or open areas in maritime hammock communities. They are typically found on the crest and lee sides of stable sand dunes, though they can colonize other areas after disturbances such as tropical storms. They are often found in association with sea grape (*Coccoloba uvifera*) as well as more weedy species such as Madagascar periwinkle (*Catharanthus roseus*) and sand spurs (*Cenchrus* sp.).

Beach jacquemontia is distributed in a number of very small populations on the coastal barrier islands from Palm Beach County south to Miami-Dade County, at least as far south as Key Biscayne. There is very little of the land area on these barrier islands that has not been developed for residential or commercial purposes. Almost all of the known populations are on public land, and even those are under threat due to development and maintenance of parks and recreation areas. Most of the known populations have fewer than 50 individuals.

There are no known populations of the beach jacquemontia near the Turkey Point site or the associated transmission corridors. The species presumably could occur on the barrier islands or keys further south in Biscayne Bay, but there is no suitable coastal strand habitat or sand dunes along the shoreline of Biscayne Bay at the Turkey Point site, and the transmission system is well removed from the shoreline. Therefore, it is determined that the continued operation of Turkey Point Units 3 and 4 and the continued operation and maintenance of the associated transmission system during the license renewal term will have **NO EFFECT** on the continued existence of the beach jacquemontia.

6.21 Candidate Plant Species

There are a number of plant species in the vicinity of the Turkey Point plant or associated transmission lines that are currently listed as candidates for protection under the Endangered Species Act. These species include Blodgett's wild-mercury (*Argythamnia blodgettii*), Florida thoroughwort brickell-bush (*Brickellia eupatorioides* var *floridana* [= *B. mosieri*]), few-flowered crabgrass (*Digitaria pauciflora*), Carter's small-flowered flax (*Linum carteri* var *carteri*), sand flax (*Linum arenicola*), and the pineland spurge (*Chamaesyce deltoidea pinetorum*).

All the candidate species are dependent on the pine rockland habitat, although two will also occur in other habitat types - Blodgett's wild-mercury can also be found in tropical hardwood hammocks, and the few-flowered crabgrass can be found in seepage swamps or freshwater marshes. Therefore, these species are subject to the same primary threats that threaten the fully listed pine rockland species. These threats are loss of habitat due to urbanization, alterations of ecosystem process such as the natural fire regime, and the encroachment of aggressive exotic plant species.

None of the species currently candidates for protection under the Endangered Species Act were observed within the transmission line corridors during the Spring 2001 field survey. However, most have been reported to occur within between 0.5 and 5 km (0.3 and 3.1 mi) of the transmission lines. None of these species has been reported from the Turkey Point site. Therefore, it is concluded that the continued operation and maintenance of Turkey Point Units 3 and 4 and associated transmission lines will either have NO EFFECT or IS NOT LIKELY TO ADVERSELY AFFECT the continued existence of these species, and will not have an effect on potential future listing actions for these species.

6.22 Candidate Fish Species

Two candidate species, the mangrove rivulus (*Rivulus marmoratus*) and the small-toothed sawfish (*Pristis pectinata*) are candidates for listing. The mangrove rivulus is found in mangrove habitats and may be present adjacent to the plant site or along the transmission corridors. The small-toothed sawfish is present in Biscayne Bay.

Mangrove rivulus is a small killifish that lives in holes and under debris in mangrove habitats and marine marshes. It is widely distributed but locally rare. This species is notable in part because it is the only self-fertilizing vertebrate. Local populations consist of homozygous clones. Major risks to the species are from habitat alternation and impoundment of marshes for mosquito control. Preferred habitat for the species are the stagnant water of crab holes and pools where competition from other fishes is not present (NMFS 2001a). Parts of Biscayne Bay adjacent to the Turkey Point site may be suitable habitat, but the species has not been collected in surveys of the plant site. Activities associated with plant operations include maintenance of a short segment of transmission corridor in mangrove habitat. Individuals of the species may be disturbed by occasional vegetation control in mangrove habitats.

Appendix E

The small-toothed sawfish, a large (up to 7.6 m [25 ft]) shark-like ray with a long saw-toothed rostrum, occurs in coastal and estuarine waters. The saw is used to locate, disturb, and capture prey, primarily crustaceans and fish. The small-toothed sawfish matures slowly (10 years), and has a low reproductive rate. The species incubates its eggs internally and bears 15-20 live young. At one time common in Biscayne Bay, populations of this species have been decimated by fishing, by habitat degradation, and from by-catch in commercial fishing. This fish is now mostly found in remote areas of Florida Bay and the Keys. This species is not present in the Turkey Point cooling canal system.

Based in this information, it is concluded that the continued operation and maintenance of Turkey Point Units 3 and 4 and associated transmission lines will either have NO EFFECT or IS NOT LIKELY TO ADVERSELY AFFECT the continued existence of these species, and will not have an effect on potential future listing actions for these species.

7.0 Management Actions

Based on the data evaluated, it is concluded that no additional management actions are needed to protect the threatened and endangered species in the vicinity of Turkey Point Units 3 and 4. However, it is acknowledged that the licensee should continue its current management and monitoring efforts, and other activities including:

- continuation of monitoring and research on the American crocodile breeding population in the cooling canal system
- maintenance of handling permits for the crocodile, American alligator, and eastern indigo snake
- continuation and enforcement of corporate policies and training for reporting occurrences of endangered or threatened species, including bird collisions or electrocutions, at the plant site and along the transmission corridors.

8.0 Summary of Conclusions

Table 4 provides a summary of the determinations regarding the potential effects of continued operation and maintenance of Turkey Point Units 3 and 4 and the associated transmission lines on endangered and threatened species.

Table 4. Conclusions Regarding Potential Effects of the Turkey Point Units 3 and 4 on Federal Endangered or Threatened Species

Species	Common Name	Conclusion
<i>Crocodylus acutus</i>	American crocodile	Likely beneficial effect
<i>Alligator mississippiensis</i>	American alligator	Not likely to adversely affect
<i>Chelonia mydas</i>	green turtle	No effect
<i>Dermochelys coriacea</i>	leatherback sea turtle	No effect
<i>Eretmochelys imbricata</i>	hawksbill sea turtle	No effect
<i>Caretta caretta</i>	loggerhead sea turtle	No effect
<i>Drymarchon corais couperi</i>	eastern indigo snake	Not likely to adversely affect
<i>Ammodramus maritimus mirabilis</i>	Cape Sable seaside sparrow	No effect
<i>Charadrius melodus</i>	piping plover	No effect
<i>Haliaeetus leucocephalus</i>	bald eagle	Not likely to adversely affect
<i>Mycteria americana</i>	wood stork	Not likely to adversely affect
<i>Rostrhamus sociabilis plumbeus</i>	Everglades snail kite	No effect
<i>Sterna dougallii dougallii</i>	roseate tern	No effect
<i>Felis concolor coryi</i>	Florida panther	No effect
<i>Trichechus manatus</i>	West Indian manatee	Not likely to adversely affect
<i>Heraclides aristodemus</i>	Schaus swallowtail	No effect
<i>Amorpha herbacea var crenulata</i>	crenulate leadplant	No effect
<i>Chamaesyce deltoidea adhaerens</i> and <i>C. deltoidea deltoidea</i>	deltoid spurge	Not likely to adversely affect
<i>Chamaesyce garberi</i>	Garber's spurge	No effect
<i>Galactia smallii</i>	Small's milk pea	Not likely to adversely affect
<i>Halophila johnsonii</i>	Johnson's seagrass	No effect
<i>Jacquemontia reclinata</i>	beach jacquemontia	No effect
<i>Polygala smallii</i>	tiny polygala	Not likely to adversely affect

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Appendix F

GEIS Environmental Issues Not Applicable to Turkey Point Units 3 and 4

Appendix F

GEIS Environmental Issues Not Applicable to Turkey Point Units 3 and 4

The following table lists those environmental issues listed in the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS)* (NRC 1996; 1999)^(a) and 10 CFR Part 51, Subpart A, Appendix B, Table B-1, that are not applicable to Turkey Point Units 3 and 4 because of plant or site characteristics.

ISSUE—10 CFR Part 51, Subpart A, Appendix B, Table B-1	Category	GEIS Sections	Comment
SURFACE WATER QUALITY, HYDROLOGY, AND USE (FOR ALL PLANTS)			
Altered current patterns at intake and discharge structures	1	4.2.1.2.1 4.3.2.2 4.4.2	Turkey Point Units 3 and 4 do not withdraw or discharge water to an open body of water.
Altered salinity gradients	1	4.2.1.2.2 4.4.2.2	The Turkey Point Units 3 and 4 cooling system does not discharge to an estuary.
Altered thermal stratification of lakes	1	4.2.1.2.2 4.4.2.2	Turkey Point Units 3 and 4 do not discharge into a lake.
Temperature effects on sediment transport capacity	1	4.2.1.2.3 4.4.2.2	Turkey Point Units 3 and 4 do not discharge cooling water to an open body of water.
Water-use conflicts (plants with once-through cooling systems)	1	4.2.1.3	Turkey Point Units 3 and 4 do not use a once-through cooling system.

(a) The GEIS was originally issued in 1996. Addendum 1 to the GEIS was issued in 1999. Hereafter, all references to the "GEIS" include the GEIS and its Addendum 1.

ISSUE—10 CFR Part 51, Subpart A, Appendix B, Table B-1	Category	GEIS Sections	Comment
Water-use conflicts (plants with cooling ponds or cooling towers using makeup water from a small river with low flow)	2	4.3.2.1 4.4.2.1	The Turkey Point Units 3 and 4 cooling system does not use makeup water from a small river with low flow.
AQUATIC ECOLOGY (FOR ALL PLANTS)			
Thermal plume barrier to migrating fish	1	4.2.2.1.6 4.4.3	Turkey Point Units 3 and 4 do not discharge cooling water to a body of water accessible to migrating fish.
Distribution of aquatic organisms	1	4.2.2.1.6 4.4.3	Turkey Point Units 3 and 4 do not discharge cooling water to an open body of water.
Premature emergence of aquatic insects	1	4.2.2.1.7 4.4.3	Cooling system is hypersaline and without insects.
Stimulation of nuisance organisms	1	4.2.2.1.1 1 4.4.3	Cooling system is hypersaline and without such organisms.
AQUATIC ECOLOGY (FOR PLANTS WITH COOLING TOWER BASED HEAT DISSIPATION SYSTEMS)			
Entrainment of fish and shellfish in early life stages	1	4.3.3	This issue is related to heat-dissipation systems that are not installed at Turkey Point Units 3 and 4.
Impingement of fish and shellfish	1	4.3.3	This issue is related to heat-dissipation systems that are not installed at Turkey Point Units 3 and 4.
Heat shock	1	4.3.3	This issue is related to heat-dissipation systems that are not installed at Turkey Point Units 3 and 4.

ISSUE—10 CFR Part 51, Subpart A, Appendix B, Table B-1	Category	GEIS Sections	Comment
GROUNDWATER USE AND QUALITY			
Groundwater-use conflicts (potable and service water, and dewatering; plants that use >100 gpm)	2	4.8.1.1 4.8.2.1	Turkey Point Units 3 and 4 use <100 gpm of groundwater.
Groundwater-use conflicts (plants using cooling towers withdrawing makeup water from a small river)	2	4.8.1.3 4.4.2.1	This issue is related to heat-dissipation systems that are not installed at Turkey Point Units 3 and 4.
Groundwater-use conflicts (Ranney wells)	2	4.8.1.4	Turkey Point Units 3 and 4 do not have or use Ranney wells.
Groundwater quality degradation (Ranney wells)	1	4.8.2.2	Turkey Point Units 3 and 4 do not have or use Ranney wells.
Groundwater quality degradation (cooling ponds at inland sites)	2	4.8.3	Turkey Point Units 3 and 4 are not located at an inland site.
TERRESTRIAL RESOURCES			
Cooling tower impacts on crops and ornamental vegetation	1	4.3.4	This issue is related to a heat-dissipation system that is not installed at Turkey Point Units 3 and 4.
Cooling tower impacts on native plants	1	4.3.5.1	This issue is related to a heat-dissipation system that is not installed at Turkey Point Units 3 and 4.
Bird collisions with cooling towers	1	4.3.5.2	This issue is related to a heat-dissipation system that is not installed at Turkey Point Units 3 and 4.

F.1 References

10 CFR 51. Code of Federal Regulations, *Title 10, Energy, Part 51*, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

U.S. Nuclear Regulatory Commission (NRC). 1996. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*. NUREG-1437, Volumes 1 and 2, Washington, D.C.

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Docket Numbers 50-250, 50-251

11. ABSTRACT (200 words or less)

This supplemental environmental impact statement (SEIS) has been prepared in response to an application submitted to the NRC by the Florida Power & Light Company (FPL) to renew the operating licenses for Turkey Point, Units 3 and 4, for an additional 20 years under 10 CFR Part 54. This SEIS includes the staff's analysis that considers and weighs the environmental effects of the proposed action, the environmental effects of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse effects. It also includes the staff's recommendation regarding the proposed action.

The NRC staff recommends that the Commission determine that the adverse environmental impacts of license renewal for Turkey Point, Units 3 and 4, are not so great that preserving the option of license renewal for energy-planning decisionmakers would be unreasonable. This recommendation is based on (1) the analysis and findings in the GEIS; (2) the Environmental Report submitted by FPL; (3) consultation with Federal, State, and local agencies; (4) the staff's own independent review; and (5) the staff's consideration of public comments.

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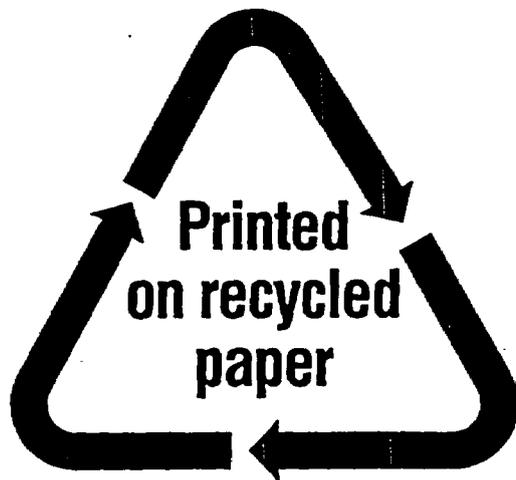
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