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SUBJECT: Forwards comments on DES re steam generator repair.

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February 19, 1981
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Office of Nuclear Reactor Regulation
Attention: Mr. Darrell G. Eisenhut, Director
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Eisenhut:

Re: Turkey Point Units 3 and 4
Steam Generator Repair
Comments on Draft Environmental Statement

Attached you will find Florida Power & Light Company's comments on the "Draft Environmental Statement related to Steam Generator Repair at Turkey Point Plant Units 3 and 4", December 1980.

We thank you for your attention to this matter.

Very truly yours,


Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/LFR/ah

Attachments

cc: N. A. Coll, Esquire.
J. P. O'Reilly, Director, Region II
Harold F. Reis, Esquire
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FLORIDA POWER & LIGHT COMPANY
COMMENTS ON DRAFT ENVIRONMENTAL STATEMENT (NUREG - 0743)

<u>Page</u>	<u>Paragraph</u>	<u>Statement in DES</u>	<u>Comment on Statement in DES</u>
1-1	3	Revision 7 to the SGRR "changed several items including the method of cutting the steam generator, the preferred proposed disposal option, and the design of the storage facility."	Offsite shipment and onsite storage are equally viable alternatives for disposal of the steam generator lower assemblies. It is recommended that "the preferred proposed disposal option" be modified to "the number of viable disposal options."
1-1	3	"Also, the decision to install full flow condensate demineralizers by FPL and the necessity to assess endangered species required that the environmental evaluation be changed to include the impact of the installation and operation of these demineralizers and the impact of the repair on any endangered species in the vicinity."	The condensate demineralizers have utility independent of the repairs, and will be installed whether or not the repairs are approved. The NRC Staff has concluded that the condensate demineralizers are not within the scope of the repair project. ^{1/} Thus, the NRC is not legally required to include an evaluation of the condensate demineralizers in the environmental impact statement for the repairs. It is recommended that this statement in the DES be modified to state: "Also, the environmental evaluation was extended to include the impact of the installation and operation of the full flow condensate demineralizers and the impact of the repair on any endangered species in the vicinity."
1-1	4	"Since power demands in the FPL system peak in the summer"	In recent years, FPL has experienced peaks in both the winter and the summer, with the summer peak being longer in duration than the winter peak. It is recommended that this statement be modified to state: "Since FPL experiences operating peaks of longer duration in the summer"

^{1/} Updated Safety Evaluation for the Turkey Point Units 3 and 4 Steam Generator Repair (Dec. 17, 1980), § 3.2.4.

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|-----|---|--|---|
| 2-2 | 2 | "the certainty of additional plugging that will result in power derating" | It is recommended that this statement be modified to state: "the probability of additional plugging that could result in power derating". |
| 3-4 | 2 | "A mobile crane will lift the lower assembly onto a transporter that will carry it to the steam generator storage facility on the site." | The SGLA's will not be lifted by a crane onto a transporter, but will be slid on Hillman rollers directly onto the transporter deck. This alternate approach was previously described in the SGRR, Revision 3, Response to Question 6, pg. A-6-1 (April, 1978). |
| 4-2 | 3 | "The lower radiation fields will result in a savings of 900 person-rem per unit." | Revision 7 to the SGRR estimates that 2985 man-rem per unit would be incurred in the pipe cut method and 2084 man-rem per unit for the channel cut approach, or a net savings of approximately 900 man-rem if the channel cut approach is selected over the pipe cut method. In part, this estimated net savings is attributable to elimination of the alignment difficulties associated with the pipe cut method and the lower radiation fields associated with the channel cut approach. See SGRR § 1.0. It is recommended that this statement in the DES be modified to state: "The change to the channel cut approach from the pipe cut method will result in an estimated net savings of approximately 900 person-rem per unit." |
| 4-5 | 1 | "The 2100 person-rem is within the range of doses for one unit a year," | This statement compares different categories of occupational exposures; i.e., annual occupational exposures versus occupational exposures during the repair of a single unit. It is recommended that this statement be modified to state: "The average annual occupational exposures per unit for the Turkey Point plant during the years in which the repair program will be implemented is expected to be within the range of doses presented in Table 4-2." |

4-5 N/A Section 4.1.1.5

The first paragraph of Section 4.1.1.5 (p. 4-4, para. 1) states that the doses incurred during the repairs will be compared with "the projected long-term person-rem reduction resulting from steam generator repair." Section 6.0 of the DES (p. 6-1) concludes that the absolute occupational dose of the proposed repair program is "outweighed by the decrease in the long-term radiological exposure compared to what would be incurred if the facility were to operate without the proposed repair ..." However, Section 4.1.1.5 omits the referenced analysis. It is recommended that such an analysis be included. See, e.g., §4.1.1 of the Turkey Point EIA.

4-8 2 "FPL will use some experienced personnel from the Surry Unit 2 steam generator removal and replacement."

Change to read: "Persons employed by FPL participated in and/or reviewed and observed the Surry Units 1 & 2 steam generator removal and replacement."

4-10 2 "Since the effluent releases from the steam generator repair are less than those estimated in the FES for normal operation of one unit, and even allowing for a 50% increase in population in the past 10 years, the population dose from the repair effort should be less than about 9 person-rem to the total body."

"Since the effluent releases from the steam generator repair for each unit are less than those estimated in the FES for normal operation of one unit, and even allowing for a 50% increase in population in the past 10 years, the population dose from the repair effort should be less than about 9 person-rem to the total body."

4-12 1 "The activity contained in the steam generators at the time of shipment is about 1500 curies. This is about four times the annual average of 340 curies (1975-77) or 430 curies (1973-79) but small compared to the 9,100 curies projected in table 5 of CFR Part 51."

This statement might be reworded as follows:

Upon removal from the containment, each steam generator will contain approximately 250 curies. Thus, about 750 curies of contained activity per unit will be attributable to the steam generators. This is about twice the FPL annual average of activity contained in solid waste per unit of 340 curies (1975-77) or 430 curies (1973-79) but small compared to the annual

4-12	4	"This dose would decrease by a factor of about 2 every five years because of the decay of Co-60."	9,100 curies projected in table S-3 of 10 CFR Part 51.
			The rate of decrease in the dose rate would actually be far greater during the first year or two of storage due to the rapid decay of short-lived isotopes. <u>See</u> SGRR, Fig. A. 46-1. It is recommended that this statement be modified to state: "This dose rate would decrease rapidly during the first year or two of storage due to the decay of short-lived isotopes, and thereafter would decrease by a factor of about 2 every five years because of the decay of Co-60."
4-13	2	"Over the life of the plant, the proposed steam generator repair project will result in a net dollar savings of at least \$500,000,000 compared with the cost of continued operation of the existing steam generators, with an optimistic assumed scenario of tube plugging and derating."	The net dollar savings should be revised to be consistent with the result of the calculation of the estimated net savings due to the repairs. (see comment below for p. 4-13 to 4-14, paragraph 6 and p. 4-14, paragraphs 1 and 2).
4-13	2	"The cost of purchasing and installing the steam generator lower assemblies and associated activities is estimated at about \$119,000,000 for the two units."	The cost of the repairs has been revised to reflect beginning the repairs in October 1981 and October 1982. The sentence should be revised to read: "The cost of purchasing and installing the steam generator lower assemblies, disposing of the removed lower assemblies, and associated activities is estimated at about \$136,000,000 for the two units."
4-13	3	"A full-flow condensate polishing demineralizing system will be installed during the repair program."	It is recommended that this statement be modified to state: "A full-flow condensate polishing demineralizing system will be installed consistent with procurement lead times and planned unit outages." <u>See</u>

letter from Robert E. Uhrig to Darrel G. Eisenhut (May 27, 1980).

4-13 3 "The estimated cost of the condensate polishing system is \$3,000,000 for both units."

The cost of installation of the system is \$3,000,000; the total cost is \$9,000,000. The sentence should be revised to read: "The estimated cost of the condensate polishing system is \$9,000,000 for both units."

4-13 4 "The estimate for replacement power during the outage for repair is about \$145,000,000".

This estimate includes replacement power costs for only one unit. In accordance with comments below for p. 4-13, paragraph 5, the replacement power cost for each repair outage is calculated by multiplying the number of days in each outage assignable to the repair (207 days) by the estimated power replacement cost per day for that unit at the time of the outage (Unit 4: \$756,000 per day; Unit 3: \$809,000 per day). The resulting costs of \$156,000,000 for Unit 4 and \$167,000,000 for Unit 3 are added to give the total power replacement costs for both repair outages of \$323,000,000. This sentence should be revised to read: "The estimate for replacement power during the two outages for repair is about \$323,000,000".

4-13 4 "The total project cost is therefore about \$270,000,000".

Consistent with comments for p. 4-13, paragraph 5 below, and paragraph 2 above, the total project cost is the sum of the cost of purchasing and installing the new steam generators and disposing of the old steam generators (\$136,000,000) plus the cost for replacement power for both units (\$323,000,000), for a total project cost of \$459,000,000. If the condensate polishing demineralizer costs were to be added, the total cost would increase by \$9,000,000.

4-13

5

"The cost of replacement power during the outage is based on the FPL estimate of \$535,000/day/unit and an outage duration of 270 days per unit".

- a) Updated estimates of replacement power costs for the Unit 4 outage in 1981-1982 are \$756,000 per day, and for the Unit 3 outage in 1982-1983 are \$809,000 per day.
- b) The steam generator repairs are scheduled to occur at the times of scheduled refueling outages for Units 4 and 3. Roughly, one refueling outage might require 63 days. Each steam generator repair outage, including refueling activities, (which will occur concurrently) will require a total of 270 days, or an additional 207 days beyond the scheduled refueling outage. Therefore it is proper to only assign 207 days of replacement power costs to the steam generator repair for each unit.

This sentence should be replaced with the following: "The steam generator repair, which will occur at the time of a scheduled refueling outage, will last a total of 270 days for each unit. Refueling approximately requires outages of 63 days. Since refueling activities will occur concurrently with repair activities, the repair will require 207 additional days of outage. Therefore, the cost of replacement power during the outages is based on the FPL estimates of \$756,000 per day during the Unit 4 repair outage, and \$809,000 per day during the Unit 3 repair outage, times 207 days for each unit."

4-13

5

"The FPL estimate of \$535,000/day/unit based on differential fuel costs is reasonable in view of the fact that the replacement power would be provided by oil and

This sentence should be updated as follows: "The FPL estimates of \$756,000/day (Unit 4) and \$809,000/day (Unit 3) are reasonable because the replacement power would be provided by oil.

gas-fired units which FPL would press into service (690,000 kW x 24 hrs/day x a fuel differential cost of about 0.038/kW* x 0.85% capacity factor = \$535,000/day/unit)".

and gas-fired units which FPL would press into service (664,000 kW average unit generation x 24 hrs/day x fuel differential costs of about 0.0558 \$/kwh* (Unit 4) or 0.0597 \$/kwh** (Unit 3) x 0.85 capacity factor = \$756,000/day (Unit 4) or \$809,000/day (Unit 3))".

* Based on 1981-1982 projected fuel cost differential.

** Based on 1982-1983 projected fuel cost differential.

4-13 to 4-14 6
and
4-14. 1, 2

(Calculation of estimated net savings due to the repairs)

This calculation should be revised to reflect the above comments regarding Page 4-13. Moreover, to calculate fuel savings over a 10 year period, a capacity factor of 0.70 should be used, instead of 0.85, to account for refueling outages.

4-15 2

"An area approximately 2 acres in size located along the south side and inside the site compound (Figure 4.2) will serve as the Steam Generator Storage Compound (SGSC) where the existing steam generators may be kept in permanent storage after removal."

The Steam Generator Storage Compound (SGSC) building is not 2 acres in size; it is located in an area of about 2 acres. See FPL Response to Question 9, letter of September 24, 1980, Uhrig to Varga (L-80-318). The sentence should be revised to read: "An area approximately 2 acres in size located along the south side and inside the site compound (Figure 4.2) will serve as the site for the Steam Generator Storage Compound (SGSC) where the existing steam generators may be kept in long-term storage after removal."

4-15 2

"The SGSC will be at elevation 17.5' (present elevation +5') with side slopes of 1:3. Fill required to bring this area up to grade will be obtained from onsite spoils piles created during canal construction."

Filling and grading of the area has been completed with no observed adverse impact. It is recommended that this statement be modified to state: "The SGSC will be at elevation 17.5' with side slopes of 1:3. Fill required to bring this area up to 17.5' was obtained from onsite spoils piles

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| 4-15 | 3 | "Filling the SGSC to grade may result in some slight increase in turbidity in the East Canal and Loch Rosetta for a brief period after rainfall during the construction phase; however, this is expected to be minor and temporary in nature." | created during canal construction. Grading of the area has been completed. No significant adverse environmental impacts from filling or grading have been observed." |
| 4-15 | 4 | "The use of dredge spoils located on the banks of the cooling canal system for fill may result in increased turbidity in the canal system in the vicinity of the activity for a short period after rainfall; however, this also is expected to be minor and temporary in nature." | Filling and grading of the area has been completed with no observed adverse impact. This sentence can be eliminated. |
| 4-15 | 7 | "The bringing of the SGSC up to grade will result in (1) some slight increase in turbidity in the cooling system after rainfall in the vicinity of the plant and the source of the fill material, (2) increased constructional noise, (3) increased dust due to vehicular traffic. Each of these potential impacts are expected to be minor, temporary, and to a great extent controllable by the use of standard erosion abatement methods, inspections, and the use of sprinkler trucks to minimize dust. Due to the limited use of the site compound by organisms known to inhabit the Turkey Point site, the rather small area of the | Filling and grading of the area has been completed with no observed adverse impact. This sentence can be eliminated. |
| | | | Filling and grading of the area has been completed with no observed adverse impact. This sentence can be eliminated. |

compound in relation to the entire Turkey Point site that will be affected by such activities and the presence of an abundance of nearby suitable habitat, no detrimental effect on any species is expected."

4-17 3 "Laundry waste water is and will be discharged without processing."

This statement is not accurate. It is recommended that it be replaced with the following: "It is expected that the activity of the laundry waste water will be sufficiently low that it may be discharged without processing. However, the laundry waste water will be sampled prior to discharge and processed if necessary to meet Technical Specifications".

4-17 5 "4.3.2 Operational Impacts
Included in the steam generator repair program is the installation of the full-flow condensate polishing demineralizer. This system will become operational once the repair has been completed and the units begin to operate."

For the reasons set forth in previous comments relating to the condensate demineralizers, it is recommended that these two sentences be modified as follows:

"4.3.2 Operational Impacts

Operation of the full-flow condensate polishing demineralizers has also been evaluated. This system will be installed and become operational consistent with procurement lead times and planned outages."

4-17 5 "The function of this system is to demineralize the entire volume of condensate water prior to its reentry into the steam generators."

It is recommended that this statement be replaced with the following sentence from § 2.2 of the SER: "The system's function is to purify the condensate by filtration and demineralization to assure high quality feedwater to the steam generators."

4-19 1 "It is concluded that changes in the operational characteristics of the station due to the steam generator repair will not have an adverse or detectable impact on species known to inhabit the Turkey Point cooling canal system."

See above comments. It is recommended that this sentence be modified to state: "It is concluded that changes in the operational characteristics of the station due to the steam generator repair or the condensate demineralizers will not have an adverse or detectable impact on species known to inhabit the Turkey Point cooling canal system."

4-19	4	"Furthermore, it was concluded that no destruction or modification of designated critical habitat to the detriment of the American crocodile <u>Crocodylus acutus</u> will occur due to this action."	It is recommended that this statement be modified in conformance with the language of Section 7 of the Endangered Species Act to state: "Furthermore, it was concluded that no destruction or adverse modification of the designated critical habitat of the American crocodile (<u>Crocodylus acutus</u>) will result from this action."
5-2	2	"chemical decontamination"	FPL has not decided upon either chemical or grit blast decontamination. It is recommended that this phrase be modified to eliminate "chemical".
5-5	4	"compared to onsite storage"	It is recommended that this phrase be modified to state: "compared to immediate intact shipment or to onsite storage."
5-5	5	"preferred method of disposal"	Change to "viable method of disposal"
5-6	3	Line 4 "state"	Local, state, and federal approvals may be required. It is recommended that "state" be changed to "regulatory".
A-1	3	"Each SGLA weighs about 173 tons."	It is recommended that this phrase be modified to state: "Each SGLA weighs about 173 tons without cover plates and plugs, or 186 tons with cover plates and plugs."
A-3	4	"4.7 per vehicle mile in 1970 to 3.2 per vehicle mile in 1977."	This statement probably contains a typographical error and FPL assumes that it should state: "4.7 per million vehicle mile in 1970 to 3.2 per million vehicle mile in 1977."
A-9	1, 2	Section 3.3.4	This section is not entirely consistent with the analysis at page 4-19 of the DES. It is recommended that this section be rewritten to be consistent with the last paragraph on page 4-19 followed by the paragraphs on page 4-20.

A-9

4

"Consequently, sinking accidents on the Bay or River may involve breaching of one but not both of the containment envelopes provided by the shipping cask and the SGLA shell, cover plates, and junction welds."

It is recommended that this statement be modified to state: "Since the depth of the Bay and the River is less than 90 feet, and since the impact of the cask upon the bottom of the Bay or River might breach the cask but not the SGLA, sinking accidents in the Bay or River would not result in the release of any radioactivity."