# 8.0 Environmental Impacts of Alternatives to License Renewal

This chapter examines the potential environmental impacts associated with denying the renewal of an operating license (OL) (i.e., the no-action alternative); the potential environmental impacts from electric generating sources other than Turkey Point Units 3 and 4; the possibility of purchasing electric power from other sources to replace power generated by Units 3 and 4 and the associated environmental impacts; the potential environmental impacts from a combination of generating and conservation measures; and other generation alternatives that were deemed unsuitable for replacement of power generated by Units 3 and 4. The environmental impacts are evaluated using the U.S. Nuclear Regulatory Commission's (NRC's) three-level standard of significance—SMALL, MODERATE, or LARGE—developed using the Council on Environmental Quality guidelines and set forth in the footnotes to Table B-1 of 10 CFR 51, Subpart A, Appendix B:

SMALL: Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

MODERATE: Environmental effects are sufficient to alter noticeably, but not to destabilize important attributes of the resource.

LARGE: Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

The impact categories evaluated in this chapter are the same as those used in the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS) NUREG-1437, Volumes 1 and 2 (NRC 1996; 1999)<sup>(a)</sup> with the additional impact categories of environmental justice and transportation.

### 8.1 No-Action Alternative

For license renewal, the no-action alternative refers to a scenario in which the NRC would not renew the Turkey Point Units 3 and 4 OLs, and the Florida Power & Light Company (FPL) would then decommission Turkey Point Units 3 and 4 when plant operations cease. Replacement of Turkey Point Units 3 and 4 electricity generation capacity would be met by

(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.

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(1) demand-side management and energy conservation, (2) power purchased from other electricity providers, (3) generating alternatives other than Turkey Point Units 3 and 4, or (4) some combination of these options.

FPL will be required to comply with NRC decommissioning requirements whether or not the OLs are renewed. If the Turkey Point Units 3 and 4 OLs are renewed, decommissioning activities may be postponed for up to an additional 20 years. If the OLs are not renewed, FPL would conduct decommissioning activities according to the requirements in 10 CFR 50.82. The GEIS (NRC 1996; 1999) and the *Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities* (NRC 1988) provide descriptions of decommissioning activities.

The environmental impacts associated with decommissioning under the no-action alternative would be bounded by the discussion of impacts in Chapter 7 of the GEIS, Chapter 7 of this Supplemental Environmental Impact Statement (SEIS), and the *Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities* (NRC 1988). The impacts of decommissioning after 60 years of operation are not expected to be significantly different from those occurring after 40 years of operation.

The environmental impacts for the socioeconomic, historic and archaeological resources, and environmental justice impact categories are summarized in Table 8-1 and discussed in the ensuing paragraphs. Impacts for all other impact categories would be SMALL as shown in Table 9-1.

<u>Socioeconomic</u>: When Turkey Point Units 3 and 4 cease operation, there will be a decrease in employment and tax revenues associated with the closure. These impacts would be concentrated in Miami-Dade County with lesser impacts in Broward and Monroe counties. Most secondary employment impacts and impacts on population would also be concentrated in Miami-Dade County and to a lesser extent in Broward and Monroe counties. Approximately 85 percent of employees who work at Turkey Point Units 3 and 4 live in Miami-Dade County, 7 percent live in Broward County, 7 percent live in Monroe County, and the remainder live in other locations (FPL 2000a). The extent of impacts on Miami-Dade County, particularly the southern portion of the county, will depend on the extent to which economic and population growth projected for South Miami-Dade County materializes (see Section 2.2.8.6).

Most of the tax revenue losses resulting from closure of Turkey Point Units 3 and 4 would occur in Miami-Dade County. In 1998, FPL paid \$10.14 million in property taxes to Miami-Dade County for Turkey Point Units 3 and 4, or about 1.6 percent of all property taxes collected by the county. The no-action alternative would result in the loss of these taxes as well as the loss of plant payrolls 20 years earlier than if the OLs were renewed.

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 Table 8-1.
 Summary of Environmental Impacts of the No-Action Alternative

Impact Category	Impact	Comment
Socioeconomic	SMALL to MODERATE	SMALL-if current growth projections for
27 - A A	· · · · ·	South Miami-Dade County materialize.
· .		MODERATE-decrease in employment,
1		higher-paying jobs, and tax revenues
	-	assuming projected growth projections for
		South Miami-Dade County do not
•	· .	materialize.
Historic and	SMALL	Land occupied by Units 3 and 4 would
Archaeological		likely be retained by FPL
Resources		
<b>Environmental Justice</b>	SMALL to MODERATE	SMALL-if growth projections for South
	-	Miami-Dade County materialize.
		MODERATE-loss of employment
		opportunities if growth projections are not
	••	realized.

There would be some adverse impacts on housing values, the local economy in South Miami-Dade County, and employment if Turkey Point Units 3 and 4 were to cease operations. The local area is still in the process of recovering from the partial closure of the Homestead Air Force Base in 1994 and from the effects of Hurricane Andrew in 1992, both of which have had an adverse effect on employment opportunities and the local housing market.

FPL employees at Turkey Point Units 3 and 4 currently contribute time and money toward community involvement, including schools, churches, charities, and other civic activities. It is likely that with a reduced presence in the community following decommissioning, FPL's community involvement efforts in the region would be lessened.

If the growth forecasts for South Miami-Dade County materialize, the socioeconomic consequences of nonrenewal of the OLs could be partially or entirely offset by the new jobs created by such growth. What is not known are the types of jobs and pay scale of the projected employment increase. If some of the new jobs are skilled, higher-paying jobs, then the impacts of nonrenewal of the Turkey Point Units 3 and 4 OLs could be significantly mitigated and the socioeconomic consequence of closure would be SMALL. If the jobs are less skilled and lower-paying jobs, then the impact of plant closure could be only partially offset and the impacts would be MODERATE. 

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- <u>Historic and Archaeological Resources</u>: The potential for future adverse impacts to known or unrecorded cultural resources at Turkey Point Units 3 and 4 following decommissioning will depend on the future use of the site land. Following decommissioning, land occupied by Units 3 and 4 would likely be retained by FPL. The system of cooling canals would continue to be needed for operation of Turkey Point fossil-fuel Units 1 and 2. Eventual sale or transfer of the land occupied by Units 3 and 4 could result in adverse impacts on these resources if the land-use pattern changes dramatically. The impacts of this alternative on historic and archaeological resources are considered SMALL.
- Environmental Justice for No-Action: Current operations at Turkey Point Units 3 and 4 have no disproportionate impacts on the minority and low-income populations of the surrounding counties, and no environmental pathways have been identified that would cause disproportionate impacts. Closure of Units 3 and 4 would result in decreased employment opportunities and tax revenues in South Miami-Dade County with possible negative and disproportionate impacts on minority or low-income populations. The extent of the impacts would depend on the extent to which projected economic growth for South Miami-Dade County materializes and the extent to which those impacted are able to commute from the south part of the county to jobs elsewhere in the county. If projected growth is not fully realized, then employment opportunities for minority and low-income populations could be disproportionately impacted. Under this scenario, the environmental justice impacts are considered SMALL to MODERATE. Alternatively, if projected growth does materialize, the impacts of closure on minority and low-income populations would be mitigated, regardless of whether the created jobs are low- or high-paying jobs. The environmental justice impacts under this scenario are considered SMALL.

## 8.2 Alternative Energy Sources

This section discusses the environmental impacts associated with alternative sources of electric power to replace the power generated by Turkey Point Units 3 and 4, assuming that the OLs for Units 3 and 4 are not renewed. The following generation alternatives are considered in detail:

- coal-fired generation at the Turkey Point site and an alternate Florida site (Section 8.2.1)
- natural gas-fired generation at the Turkey Point site and an alternate Florida site (Section 8.2.2)
- nuclear generation at the Turkey Point site and an alternate Florida site (Section 8.2.3)
- oil-fired generation at the Turkey Point site (Section 8.2.4).

The alternative of purchasing power from other sources to replace power generated at Turkey Point Units 3 and 4 is discussed in Section 8.2.5. Other power generation alternatives and

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conservation alternatives considered by the staff and found not to be reasonable replacements for Units 3 and 4 are discussed in Section 8.2.6. Section 8.2.7 discusses the environmental impacts of a combination of generation and conservation alternatives. The impacts associated with a combination of alternatives are estimated to be the same as or larger than the environmental consequences of renewal of the OLs for Turkey Point Units 3 and 4. The order of presentation of alternative energy sources in Section 8.2 does not imply which alternative would be most likely to occur or to have the least environmental impacts.

Each year the Energy Information Administration (EIA), a component of the U.S. Department of Energy (DOE), issues an Annual Energy Outlook. The Annual Energy Outlook 2001, was issued in December 2000 (DOE/EIA 2000a). In it, EIA projects that combined-cycle or combustion turbine technology fueled by natural gas is likely to account for approximately 92 percent of new electric generating capacity between the years 2000 and 2020 (DOE/EIA 2000a). Both technologies are designed primarily to supply peak and intermediate capacity, but combined-cycle technology can also be used to meet baseload<sup>(a)</sup> requirements. Coal-fired plants are projected by EIA to account for approximately 6 percent of new capacity during this period. Coal-fired plants are generally used to meet baseload requirements. Renewable energy sources, primarily wind, biomass gasification, and municipal solid waste units, are projected by EIA to account for the remaining 2 percent of capacity additions. EIA's projections are based on the assumption that providers of new generating capacity will seek to minimize cost while meeting applicable environmental requirements. Combined-cycle plants are projected by EIA to have the lowest generation cost in 2005 and 2020, followed by coal-fired plants and then wind generation (DOE/EIA 2000a).

EIA projects that oil-fired plants will account for very little of new generation capacity in the United States during the 2000 to 2020 time period because of higher fuel costs and lower efficiencies (DOE/EIA 2000a). Nevertheless, an oil-fired generating alternative at the Turkey Point site for replacement of power generated by Turkey Point Units 3 and 4 is considered in Section 8.2.4, principally because co-located Turkey Points Units 1 and 2 are oil-fired generation plants and infrastructure to support the oil-fired generation option is already in place at the Turkey Point site.

EIA also projects that new nuclear power plants will not account for any new generation capacity in the United States during the 2000 to 2020 time period because natural gas and coal-fired plants are projected to be more economical (DOE/EIA 2000a). In spite of this projection, a new nuclear plant alternative for replacement of power generated by Turkey Point Units 3 and 4 is considered in Section 8.2.3. Since 1997, the NRC has certified three new standard designs for nuclear power plants under the procedures in 10 CFR 52, Subpart B.

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<sup>(</sup>a) A baseload plant normally operates to supply all or part of the minimum continuous load of a system and consequently produces electricity at an essentially constant rate. Nuclear power plants are commonly used for baseload generation; i.e., these units generally run near full load.

These designs are the U.S. Advanced Boiling Water Reactor (10 CFR 52, Appendix A), the System 80+ Design (40 CFR 52, Appendix B), and the AP600 Design (10 CFR 52, Appendix C). The submission to the NRC of these three applications for certification indicates continuing interest in the possibility of licensing new nuclear power plants. NRC has recently established a New Reactor Licensing Project Office to prepare for and manage future reactor and site licensing applications (NRC 2001).

Turkey Point Units 3 and 4 have a combined net summer rating of 1386 megawatts electric (MW[e]). For the coal, natural gas, and oil-fired alternatives, FPL's Environmental Report (ER; FPL 2000a) assumes three standard 400-MW(e) units<sup>(a)</sup> as potential replacements for Units 3 and 4. This approach is followed in this SEIS, although it results in some environmental impacts that are roughly 13 percent lower than if full replacement capacity were constructed. FPL's reasoning is that, although customized unit sizes can be built, use of standardized sizes is more economical. Moreover, using four 400-MW(e) units for the analysis would overestimate environmental impacts and tend to make the fossil alternatives less attractive.

FPL identified three preferred and three additional potential sites in Florida, all with existing FPL generating units, for possible future generation additions in its *Ten Year Power Plant Site Plan* prepared for the Florida Public Service Commission (FPL 2000b). The three preferred sites are: (1) a site 6 km (4 mi) east of Tice in Lee County, (2) property within the city limits of Debary in Volusia County, and (3) a site 11 km (7 mi) northwest of Indiantown in Martin County. The Martin County site is the closest preferred site to Turkey Point. The three additional potential sites are: (1) a site in Brevard County near the city of Port St. Johns, (2) a site in Palm Beach County within the city limits of Riviera Beach, and (3) a site in Broward County at Port Everglades within the city limits of Fort Lauderdale. The potential site in Broward County is the closest of the designated preferred and potential sites to the Turkey Point site. This SEIS has been prepared taking account of these preferred and potential sites, but not being limited to these particular sites.

#### 8.2.1 Coal-Fired Generation

The coal-fired alternative is analyzed for both the Turkey Point site and an alternate site in Florida, such as one of the preferred or potential sites identified by FPL in its *Ten Year Power Plant Site Plan* (FPL 2000b). Construction of three 400-MW(e) units is assumed as discussed in Section 8.2. Construction at an alternate site would necessitate the construction of a new 500-kV transmission line to connect to existing lines to transmit power to FPL's customers in the Miami area. The FPL ER assumes that the new line would be approximately 96 km (60 mi) long (FPL 2000a).

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<sup>(</sup>a) The gas-fired units would have a rating of 416 gross MW and 400 net MW. The coal-fired units would have a rating of 424 gross MW and 400 net MW. The difference between "gross" and "net" is the electricity consumed onsite.

The coal-fired plant would consume approximately 3.6 million metric tons (MT) (4.0 million tons) per year of pulverized bituminous coal with an ash content of approximately 8.2 percent (FPL 2000a). The ER assumes a heat rate<sup>(a)</sup> of 2.8 joules (J) of fuel /J of electricity (9600 Btu/kWh) and a capacity factor<sup>(b)</sup> of 0.9 (FPL 2000a). After combustion, 99.9 percent of the ash would be collected and disposed of at the plant site. In addition, approximately 300,000 MT (329,000 tons) of scrubber sludge would be disposed of at the plant site based on annual calcium hydroxide usage of approximately 169,000 MT (186,000 tons). Calcium hydroxide<sup>(c)</sup> is used in the scrubbing process for control of sulfur dioxide (SO<sub>2</sub>) emissions.

The FPL ER assumes that coal and calcium hydroxide would be delivered by barge to the existing Turkey Point receiving dock. This dock is currently used for oil deliveries for Turkey Point Units 1 and 2. Any barge delivery would require the barges and accompanying vessels to pass through Biscayne National Park and the dredged channel that serves the dock. Such delivery would have an adverse aesthetic impact on park visitors. The park ecology would also be negatively impacted by routine transport and potentially impacted significantly if an accident occurred during transport.

An alternative means of delivery would be by rail. The Florida East Coast Railroad and CSX Transportation Inc. have tracks that serve the Miami area (Florida Department of Transportation 2001). Tracks of the Florida East Coast Railroad are approximately 14 km (9 mi) northwest of the Turkey Point site (NRC 1996). Construction of a rail spur to the Turkey Point site couldoccur in sensitive Everglades wetland areas and have negative ecological impacts both from construction and operation. Rail delivery would be the most likely option for delivering coal to an alternate inland Florida site for the coal plant. Barge delivery is potentially feasible for a coastal site.

For the rail delivery option, coal would likely be delivered by rail trains of approximately 115 cars each. Each open-top rail car holds about 90 MT (100 tons) of coal. Additional rail cars would be needed for lime delivery. In all, approximately 340 trains per year would deliver the coal and lime for the three units. An average of roughly 13 train trips per week on the rail spur would be needed, because for each full train delivery there would be an empty return train.

<sup>(</sup>a) Heat rate is a measure of generating plant thermal efficiency. The value given is in both metric and English units. It is more commonly expressed in British thermal units (Btu) per net kilowatt-hour (kWh). It is computed by dividing the total Btu content of fuel burned for electric generation by the resulting net kWh generation.

<sup>(</sup>b) The capacity factor is the ratio of electricity generated, for the period of time considered, to the energy that could have been generated at continuous full-power operation during the same period.

<sup>(</sup>c) Calcium hydroxide is prepared by reacting lime with water, a process called slaking. Calcium hydroxide is also known as hydrated lime or slaked lime. Calcium oxide (lime) is prepared by heating calcium carbonate (i.e., limestone) in a lime kiln to about 500°C to 600°C, which decomposes the limestone into the oxide and carbon dioxide.

A coal slurry pipeline is another potential alternative for delivering coal. However, such a pipeline would need to cover a great distance to reach a suitable coal-mining area or the coal would need to be transported by alternative means (e.g., rail) to a site closer to the Turkey Point site for introduction into the pipeline. The coal slurry pipeline alternative for delivering coal is not considered a feasible alternative because of the length of the pipeline that would be needed and is not further evaluated in this SEIS.

Unless otherwise indicated, the assumptions and numerical values used in Section 8.2.1 are from the FPL ER (FPL 2000a). The staff reviewed this information and compared it to environmental impact information in the GEIS. Although the OL renewal period is only 20 years, the impact of operating the coal-fired alternative for 40 years is considered (as a reasonable
I projection of the operating life of a coal-fired plant).

#### 8.2.1.1 Closed-Cycle Cooling System

A coal-fired plant located at the Turkey Point site would use the existing canal system as a source of cooling. An alternate site could use either a closed-cycle or a once-through cooling system. FPL did not analyze an alternate site for a coal-fired plant in its ER, but assumed that an alternative natural gas-fired plant at a central Florida location would use a closed-cycle cooling system using mechanical draft cooling towers (FPL 2000a).

The overall impacts of the coal-fired generating system are discussed in the following sections and summarized in Table 8-2. The extent of impacts at an alternate Florida site will depend on the location of the particular site selected.

#### Land Use

The existing facilities and infrastructure at the Turkey Point site would be used to the extent practicable, limiting the amount of new construction that would be required. Specifically, it is assumed that the coal-fired replacement plant alternative would use the cooling canal system, switchyard, offices, and transmission line right-of-way. Much of the land that would be used has been previously disturbed.

The coal-fired generation alternative would necessitate converting roughly an additional 360 ha (900 ac) of the Turkey Point site to industrial use for the plant, coal storage, and ash and scrubber sludge disposal. Additional land-use changes would occur offsite in an undetermined coal-mining area to supply coal for the plant. The GEIS estimated that approximately 8900 ha (22,000 ac) would be affected for mining the coal and disposing of the waste to support a coal plant during its operational life. Partially offsetting this offsite land use would be the elimination of the need for uranium mining to supply fuel for Units 3 and 4. The GEIS estimated that approximately 400 ha (1000 ac) would be affected for mining the uranium and processing it during the operating life of a nuclear power plant.

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# Table 8-2. Summary of Environmental Impacts of Coal-Fired Generation at Turkey Point Site and an Alternate Florida Site Using Closed-Cycle Cooling

		Furkey Point Site	Alte	ernate Florida Site
Impact Category	Impact	Comments	Impact	Comments
Land Use	MODERATE	Uses approximately 570 ha (1400 ac) for plant, waste disposal, and rail spur, addi- tional offsite land impacts for coal and limestone mining.	MODERATE to LARGE	Uses approximately 1770 ha (4300 ac), for plant, offices, parking, transmission line, and rail spur; additional land impacts for coal and lime- stone mining.
Ecology .	MODERATE to LARGE	Uses undeveloped areas at current Turkey Point site, plus rail corridor or barge channel. Barge traffic in Biscayne Bay would adversely affect the marine ecosystem.	MODERATE	Impact depends on loca- tion and ecology of the site, surface water body used for intake and dis- charge, and transmission line route; potential habitat loss and fragmentation; reduced productivity and biological diversity.
Water Use and Quality	SMALL	Uses existing cooling canal system	SMALL to MODERATE	Impact will depend on the volume of water withdrawn and discharged and the characteristics of the sur- face water body.
Air Quality	MODERATE	<ul> <li>Sulfur oxides</li> <li>11,200 MT/yr (12,300 tons/yr)</li> <li>Nitrogen oxides</li> <li>7000 MT/yr (7800 tons/yr)</li> <li>Particulates</li> <li>150 MT/yr (165 tons/yr) of total suspended particulates, including 34 MT/yr (38 tons/yr) of PM<sub>10</sub></li> </ul>	MODERATE	Potentially same impacts as the Turkey Point site, although pollution-control standards may vary.

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	Turkey Point Site		Alternate Florida Site	
Impact Category	Impact	Comments	Impact	Comments
Air Quality (contd)		Carbon monoxide • 900 MT/yr (1000 tons/yr) Small amounts of mercury and other hazardous air pollutants and naturally occurring radioactive materials – mainly uranium and thorium		
Waste	MODERATE	Total waste volume would be approximately 600,000 MT/yr (660,000 tons/yr) of ash and scrubber sludge requiring approximately 138 ha (340 ac) for disposal during the 40-year life of the plant.	MODERATE	Same impacts as Turkey Point site; waste disposal constraints may vary.
Human Health	SMALL	Impacts are uncertain, but considered SMALL in the absence of more quantitative data.	SMALL	Same impact as the Turkey Point site.
Socioeconomics	SMALL to LARGE	During construction, impacts would be MODERATE. Up to 2500 workers during the peak period of the 5-year construc- tion period, followed by reduc- tion from current Turkey Point Units 3 and 4 work force of 960 to 250; tax base preserved. Impacts during operation would be SMALL. Transportation impacts associated with construction workers could be MODERATE to LARGE.	SMALL to LARGE	Construction impacts depend on location, but could be LARGE if plant is located in an area that is more rural than the Turkey Point site. Miami-Dade County would experience loss of tax base and employment, potentially offset by projected economic growth. Transportation impacts associated with construc- tion workers could be MODERATE to LARGE.

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Turkey Point Site		Alternate Florida Site		
Impact Category	Impact	Comments	Impact	Comments
Socioeconomics (contd)		For rail transportation of coal and lime, the impact is consid- ered MODERATE to LARGE. For barge transportation, the impact is considered SMALL.		For rail transportation of coal and lime, the impact is considered MODERATE to LARGE. For barge trans- portation, the impact is considered SMALL.
Aesthetics	LARGE	LARGE aesthetic impact due to impact of plant units and stacks on environmentally sensitive Biscayne National Park. Barge transportation of coal and lime would have a MODERATE aesthetic impact. Noise impact would be MODERATE given the environ- mental sensitivity of Biscayne National Park.	MODERATE to LARGE	Greatest impact is from the new transmission line that would be needed.
Historic and Archeological Resources	SMALL	Some construction would affect previously developed parts of Turkey Point site; cultural resource inventory should minimize any impacts on undeveloped lands.	SMALL	Alternate location would necessitate cultural resource studies
Environmental Justice	SMALL to MODERATE	Impacts on minority and low- income communities should be similar to those experienced by the population as a whole. Some impacts on housing may occur during construction; loss of 710 operating jobs could reduce employment prospects for minority and low-income populations. Impacts could be offset by projected economic growth and the ability of affected workers to commute to other jobs.	SMALL to MODERATE	Impacts will vary depending on population distribution and makeup at the site.
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If coal is delivered by rail, an additional approximately 70 ha (160 ac) would be needed for a rail spur.

The waste would be disposed of onsite, accounting for approximately 138 ha (340 ac) of land area over the 40-year plant life.

The impact of a coal-fired generating unit on land use at the existing Turkey Point site is best characterized as MODERATE. The impact would definitely be greater than the OL renewal alternative.

Construction of the coal-fired generation alternative at an alternate Florida site could impact up to 700 ha (1700 ac) (NRC 1996). An additional 1000 ha (2500 ac) would be needed for a transmission line to connect to existing lines to transmit power to FPL customers in the Miami area. Up to 70 ha (160 ac) could also be needed for a rail spur for coal and lime delivery, assuming that the alternate site location is within 16 km (10 mi) of the nearest railway connection. Depending particularly on transmission line and rail line routing, this alternative would result in MODERATE to LARGE land-use impacts.

#### Ecology

Locating a coal-fired plant at the Turkey Point site would alter ecological resources because of the need to convert roughly 360 ha (900 ac) of land to industrial use (plant, coal storage, ash and scrubber sludge disposal). However, some of this land would have been previously disturbed.

Ecological impacts associated with transporting coal and lime to the Turkey Point site would be significant. The rail option would involve constructing a rail spur with a minimum length of 14 km (9 mi). Construction of at least a portion of the spur through ecologically sensitive wetlands would likely be needed. The barge delivery option would have negative ecological implications for waters included within Biscayne National Park. Written scoping comments submitted by the National Park Service (included in Appendix A) state that barges delivering oil for Turkey Point Units 1 and 2 have run aground within Biscayne National Park numerous times. The comments state that each trip adversely impacts water quality by churning up the bottom of Biscayne Bay and creating a turbidity plume that lasts long after the barge has passed. Turbidity limits the photosynthesis of the phytoplanktonic and seagrass communities that are essential for a healthy marine ecosystem. The comments also point out that the thrust from the tugboat may disrupt seagrass recovery by ripping it from the bottom along with other attached vegetation.

Siting a coal-fired plant at Turkey Point would have a MODERATE to LARGE ecological impact that would be greater than renewal of the Unit 3 and 4 OLs.

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At an alternate site, the coal-fired generation alternative would introduce construction impacts and new incremental operational impacts. Even assuming siting at a previously disturbed area, the impacts would alter the ecology. Impacts could include wildlife habitat loss, reduced productivity, habitat fragmentation, and a local reduction in biological diversity. Use of cooling makeup water from a nearby surface water body could have adverse aquatic resource impacts. Construction and maintenance of the transmission line would have ecological impacts. Overall, the ecological impacts at an alternate site would be MODERATE to LARGE.

#### Water Use and Quality

The coal-fired generation alternative at the Turkey Point site is assumed to use the existing cooling canal system, which would minimize incremental water-use and quality impacts. Surface-water impacts are expected to remain SMALL; the impacts would be sufficiently minor that they would not noticeably alter any important attribute of the resource.

It is assumed that a coal-fired plant located at Turkey Point would obtain potable, process, and fire-protection water from the Miami-Dade County public water system similar to the current practice for Turkey Point Units 3 and 4 (see Section 2.2.2).

Alternate sites would likely use a closed-cycle cooling system with cooling towers. For alternate sites, the impact on the surface water would depend on the volume of water needed for makeup water, the discharge volume, and the characteristics of the receiving body of water. Intake from and discharge to any surface body of water would be regulated by the State of Florida. The impacts would be SMALL to MODERATE.

No groundwater is currently used for operation of Turkey Point Units 3 and 4. It is unlikely that groundwater would be used for an alternative coal-fired plant sited at Turkey Point site. Use of groundwater for a coal-fired plant sited at an alternate site is a possibility. Any groundwater withdrawal would require a permit from the local permitting authority.

#### Air Quality

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The air-quality impacts of coal-fired generation vary considerably from those of nuclear generation due to emissions of sulfur oxides  $(SO_x)$ , nitrogen oxides  $(NO_x)$ , particulates, carbon monoxide, hazardous air pollutants such as mercury, and naturally occurring radioactive materials.

A new coal-fired generating plant located in southern Florida would likely need a prevention of significant deterioration (PSD) permit and an operating permit under the Clean Air Act. The plant would need to comply with the new source performance standards for such plants

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set forth in 40 CFR 60, Subpart Da. The standards establish limits for particulate matter and opacity (40 CFR 60.42a), SO<sub>2</sub> (40 CFR 60.43a), and NO<sub>x</sub> (40 CFR 60.44a).

Section 169A of the Clean Air Act (42 USC 7491) establishes a national goal of preventing future and remedying existing impairment of visibility in mandatory Class I Federal areas when impairment results from man-made air pollution. Everglades National Park is a Class I area where visibility is an important value (40 CFR 81.407). Any new fossil power plant in southern Florida has the potential to affect visibility in the Everglades National Park. The U.S. Environmental Protection Agency (EPA) has various regulatory requirements for visibility protection in 40 CFR 51, Subpart P, including a specific requirement for review of any new major stationary source in an area designated as attainment or unclassified under the Clean Air Act. All of south-central Florida is classified as attainment or unclassified for criteria pollutants, except that Broward and Miami-Dade counties are maintenance areas for ozone (40 CFR 81.310). EPA issued a new regional haze rule in 1999 (64 FR 35714; July 1,1999 [EPA 1999]). The rule specifies that for each mandatory Class I Federal area located within a State, the State must establish goals that provide for reasonable progress towards achieving natural visibility conditions. The reasonable progress goals must provide for an improvement in visibility for the most-impaired days over the period of the implementation plan and ensure no degradation in visibility for the least-impaired days over the same period [40 CFR 51.308(d)(1)].

Impacts for particular pollutants are as follows:

<u>Sulfur oxides emissions</u>. FPL states in its ER that an alternative coal-fired plant located at the Turkey Point site would use spray-drying technology (dry scrubber) for flue gas desulfurization rather than a wet scrubber (FPL 2000a). Lime/limestone would be used for the flue gas desulfurization (FPL 2000a). FPL notes that the saline groundwater at the Turkey Point site would be incompatible with the chemistry of a flue gas desulfurization scrubbing process and the higher corrosivity of the saline groundwater would increase the construction, operation, and maintenance costs.

A new coal-fired power plant would be subject to the requirements in Title IV of the Clean Air Act. Title IV was enacted to reduce emissions of  $SO_2$  and  $NO_x$ , the two principal precursors of acid rain, by restricting emissions of these pollutants from power plants. Title IV caps aggregate annual power plant  $SO_2$  emissions and imposes controls on  $SO_2$ emissions through a system of marketable allowances. EPA issues one allowance for each ton of  $SO_2$  that a unit is allowed to emit. New units do not receive allowances, but are required to have allowances to cover their  $SO_2$  emissions. Owners of new units must therefore acquire allowances from owners of other power plants by purchase or reduce  $SO_2$ emissions at other power plants they own. Allowances can be banked for use in future years. Thus, a new coal-fired power plant would not add to net regional  $SO_2$  emissions, although it might do so locally. Regardless,  $SO_2$  emissions would be greater for the coal alternative than the OL renewal alternative.

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FPL estimates that by using the best available control technology for SO<sub>x</sub> emissions, the total annual stack emissions would be approximately 11,200 MT (12,300 tons) of SO<sub>x</sub> (FPL 2000a).

<u>Nitrogen oxides emissions</u>. Section 407 of the Clean Air Act establishes technology-based emission limitations for  $NO_x$  emissions. The market-based allowance system used for  $SO_2$  emissions is not used for  $NO_x$  emissions. A new coal-fired power plant would be subject to the new source performance standards for such plants in 40 CFR 60.44a(d)(1). This regulation, issued on September 16, 1998 (63 FR 49453 [EPA 1998]), limits the discharge of any gases that contain nitrogen oxides (expressed as  $NO_2$ ) in excess of 200 ng/J of gross energy output (1.6 lb/MWh), based on a 30-day rolling average.

FPL estimates that using the best available control technology, the total annual  $NO_x$  emissions for a new coal-fired power plant would be approximately 7000 MT (7800 tons). This level of  $NO_x$  emissions would be greater than the OL renewal alternative.

<u>Particulate emissions</u>. FPL estimates that the total annual stack emissions would include 150 MT (165 tons) of filterable total suspended particulates. The 150 MT would include 34 MT (38 tons) of particulate matter having an aerodynamic diameter less than or equal to 10  $\mu$ m (PM<sub>10</sub>) (40 CFR 50.6). Fabric filters or electrostatic precipitators would be used for control. In addition, coal-handling equipment would introduce fugitive particulate emissions. Particulate emissions would be greater under the coal alternative than the OL renewal alternative.

During the construction of a coal-fired plant, fugitive dust would be generated. In addition, exhaust emissions would come from vehicles and motorized equipment used during the construction process.

<u>Carbon monoxide emissions</u>. FPL estimates that the total carbon monoxide emissions would be approximately 900 MT (1000 tons) per year. This level of emissions is greater than the OL renewal alternative.

<u>Hazardous air pollutants including mercury</u>. In December 2000, EPA issued regulatory findings on emissions of hazardous air pollutants from electric utility steam generating units (EPA 2000). EPA determined that coal- and oil-fired electric utility steam-generating units are significant emitters of hazardous air pollutants. Coal-fired power plants were found by EPA to emit arsenic, beryllium, cadmium, chromium, dioxins, hydrogen chloride, hydrogen fluoride, lead, manganese, and mercury (EPA 2000). EPA concluded that mercury is the hazardous air pollutant of greatest concern. EPA found that (1) there is a link between coal consumption and mercury emissions; (2) electric utility steam-generating units are the largest domestic source of mercury emissions; and (3) certain segments of the U.S. population (e.g., the developing fetus and subsistence fish-eating populations) are believed to be at potential risk of adverse health effects due to mercury exposures resulting from

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consumption of contaminated fish (EPA 2000). Accordingly, EPA added coal- and oil-fired electric utility steam-generating units to the list of source categories under Section 112(c) of the Clean Air Act for which emission standards for hazardous air pollutants will be issued (EPA 2000).

<u>Uranium and thorium</u>. Coal contains uranium and thorium. Uranium concentrations are generally in the range of 1 to 10 parts per million. Thorium concentrations are generally about 2.5 times greater than uranium concentrations (Gabbard 1993). One estimate is that a typical coal-fired plant released roughly 4.7 MT (5.2 tons) of uranium and 11.6 MT (12.8 tons) of thorium in 1982 (Gabbard 1993). The population dose equivalent from the uranium and thorium releases and daughter products produced by the decay of these isotopes has been calculated to be significantly higher than that from nuclear power plants (Gabbard 1993).

<u>Summary</u>. The GEIS analysis did not quantify emissions from coal-fired power plants, but implied that air impacts would be substantial. The GEIS also mentioned global warming from unregulated carbon dioxide emissions and acid rain from  $SO_x$  and  $NO_x$  emissions as potential impacts. Adverse human health effects from coal combustion such as cancer and emphysema have been associated with the products of coal combustion. The appropriate characterization of air impacts from coal-fired generation would be MODERATE. The impacts would be clearly noticeable, but would not destabilize air quality.

Siting a coal-fired generation plant at a site other than Turkey Point would not significantly change air-quality impacts, although it could result in installing more or less stringent pollution-control equipment to meet applicable local requirements. Therefore, the impacts would be MODERATE.

#### Waste

Coal combustion generates waste in the form of ash, and equipment for controlling air pollution generates additional ash and scrubber sludge. Three 400-MW(e) coal-fired plants would generate approximately 600,000 MT (660,000 tons) of this waste annually for 40 years. The waste would be disposed of onsite, accounting for approximately 138 ha (340 ac) of land area over the 40-year plant life. Waste impacts to groundwater and surface water could extend beyond the operating life of the plant if leachate and runoff from the waste storage area occurs. Disposal of the waste could noticeably affect land use and groundwater quality, but with appropriate management and monitoring, it would not destabilize any resources. After closure of the waste site and revegetation, the land could be available for other uses. For these reasons, the appropriate characterization of impacts from waste generated from burning coal is MODERATE; the impacts would be clearly noticeable, but would not destabilize any important resource.

Construction-related debris would be generated during construction activities.

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Siting the facility at a site other than Turkey Point would not alter waste generation, although other sites might have more constraints on disposal locations. Therefore, the impacts would be MODERATE.

#### Human Health

Coal-fired power generation introduces worker risks from fuel and limestone mining, and worker and public risks from fuel and lime/limestone transportation and inhalation of stackemissions. Emission impacts can be widespread and health risks difficult to quantify. The coal alternative also introduces the risk of coal-pile fires and attendant inhalation risks.

The GEIS analysis noted that there could be human health impacts (cancer and emphysema) from inhalation of toxins and particulates, but did not identify the significance of these impacts. In addition, the discharges of uranium and thorium from coal-fired plants can potentially produce radiological doses in excess of those arising from nuclear power plant operations (Gabbard 1993).

Regulatory agencies, including EPA and State agencies, set air emission standards and requirements based on human health impacts. These agencies also impose site-specific emission limits as needed to protect human health. As discussed above, EPA has recently concluded that certain segments of the U.S. population (e.g., the developing fetus and subsistence fish-eating populations) are believed to be at potential risk of adverse health effects due to mercury exposures from sources such as coal-fired power plants. However, in the absence of more quantitative data, human health impacts from radiological doses and inhaling toxins and particulates generated by burning coal are characterized as SMALL.

#### Socioeconomics

Construction of the coal-fired alternative would take approximately 5 years. It is assumed that construction would take place while Turkey Point Units 3 and 4 continue operation and would be completed by the time Units 3 and 4 permanently cease operations. The work force would be expected to vary between 1200 and 2500 workers during the 5-year construction period (NRC 1996; 1999). These workers would be in addition to the approximately 960 workers employed at Units 3 and 4. During construction, the surrounding communities would experience demands on housing and public services that could have MODERATE impacts. These impacts would be tempered by construction workers commuting to the site from other parts of Miami-Dade County or from other counties. After construction, the communities would be impacted by the loss of the construction jobs, although this loss would be possibly offset by other growth currently being projected for South Miami-Dade County.

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If the coal-fired replacement plant were constructed at the Turkey Point site and Units 3 and 4 were decommissioned, there would be a loss of approximately 710 permanent highpaying jobs (960 for two nuclear units down to 250 for the coal-fired plant), with a commensurate reduction in demand on socioeconomic resources and contribution to the regional economy. However, as discussed previously, projected economic growth in South Miami-Dade County could temper or offset the projected loss of jobs from the closure of Units 3 and 4. The coal-fired plants would provide a new tax base to offset the loss of tax base associated with the decommissioning of the nuclear units. For all of these reasons, the appropriate characterization of nontransportation socioeconomic impacts for a coal-fired plant constructed at the Turkey Point site would be SMALL to MODERATE; the socioeconomic impacts would be noticeable, but would be unlikely to destabilize the area.

During the 5-year construction period of replacement coal-fired units, up to 2500 construction workers would be working at the site in addition to the 960 workers at Units 3 and 4. The addition of these workers could place significant traffic loads on existing highways, particularly those leading to the Turkey Point site from Florida City. Such impacts would be MODERATE to LARGE.

For transportation related to commuting of plant operating personnel, the impacts are considered SMALL. The maximum number of plant operating personnel would be approximately 250. The current Turkey Point Units 3 and 4 work force is approximately 960. Therefore, traffic impacts associated with plant personnel commuting to a coal-fired plant would be expected to be SMALL compared to the current impacts from Turkey Point Units 3 and 4 operations.

For rail transportation related to coal and lime delivery to the Turkey Point site, the impacts are considered MODERATE to LARGE. Approximately 340 trains per year would be needed to deliver the coal and lime for the three coal-fired units. A total of 13 train trips is expected per week, or nearly 2 trips per day, because for each full train delivery there would be an empty train. On several days per week, there could be three trains per day using the rail spur to the Turkey Point site. Barge delivery of coal and lime would have SMALL socioeconomic impacts.

Construction of a replacement coal-fired power plant at an alternate Florida site would relocate some socioeconomic impacts, but would not eliminate them. The communities around Turkey Point would still experience the impact of Turkey Point Units 3 and 4 operational job loss (although potentially tempered by projected economic growth), and the communities around the new site would have to absorb the impacts of a large, temporary work force (up to 2500 workers at the peak of construction) and a permanent work force of approximately 250 workers. The GEIS indicated that socioeconomic impacts at a rural site would be larger than at an urban site, because more of the peak construction work force would need to move to the area to work. The Turkey Point site is within commuting distance of the Miami metropolitan area and is therefore not considered a rural site.

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Alternate sites in Florida would need to be analyzed on a case-by-case basis. Socioeconomic impacts at a rural site could be LARGE. Transportation-related impacts associated with commuting construction workers at an alternate Florida site are site dependent, but could be MODERATE to LARGE. Transportation impacts related to commuting of plant operating personnel would also be site dependent, but can be characterized as SMALL to MODERATE.

At an alternate Florida site, coal and lime would likely be delivered by rail, although barge delivery is feasible for a coastal location. Transportation impacts would depend upon the site location. Socioeconomic impacts associated with rail transportation would likely be MODERATE to LARGE. Barge delivery of coal and lime would likely have SMALL socioeconomic impacts.

#### Aesthetics

If sited at Turkey Point, the three coal-fired power plant units could be as much as 60 m (200 ft) tall and be visible in daylight hours over many miles. The three exhaust stacks would be somewhere in the range of 120 to 185 m (400 to 600 ft) high. Given the low elevation at the site and of the surrounding land, the stacks would be highly visible in daylight hours for distances up to 16 km (10 mi). The units and associated stacks would also be visible at night because of outside lighting. The National Park Service states in its scoping comments (see Appendix E) that the Turkey Point Plant can be seen at night as far east as the park's barrier islands, which are 11 km (7 mi) offshore. The visual impact of a new coal-fired plant could be mitigated by landscaping and color selection for buildings that is consistent with the environment. The visual impact at night could be mitigated by reduced use of lighting and appropriate use of shielding.

The aesthetic impact of the replacement coal-fired units on visitors to Biscayne National Park would be significant. Given the environmental sensitivity of the park and the associated expectations of visitors to national parks, the addition of the coal-fired units and the associated exhaust stacks would likely have a LARGE aesthetic impact.

If coal and lime for a new coal-fired plant were delivered by barge to the Turkey Point site, the tugboat and barges would pass through Biscayne National Park. Given the environmental sensitivity of the park and the associated expectations of visitors to national parks, there would likely be a MODERATE aesthetic impact on visitors to the park associated with such traffic. During construction of the plant, it is also possible that equipment would be delivered by barge and thereby pass through the park.

Coal-fired generation would introduce mechanical sources of noise that would be audible offsite, especially within Biscayne National Park. Sources contributing to total noise produced by plant operation are classified as continuous or intermittent. Continuous sources include the mechanical equipment associated with normal plant operations.

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Intermittent sources include the equipment related to coal handling, solid-waste disposal, transportation related to coal and lime delivery, use of outside loudspeakers, and the commuting of plant employees. The incremental noise impacts of a coal-fired plant compared to existing Turkey Point Units 3 and 4 operations are considered to be MODERATE. Impacts would be most significant for visitors to Biscayne National Park.

Noise impacts associated with rail delivery of coal and lime to a plant at Turkey Point would be most significant for residents living in the vicinity of the facility and along the rail route. Although noise from passing trains significantly raises noise levels near the rail corridor, the short duration of the noise reduces the impact. Nevertheless, given the frequency of train transport and the many residents likely to be within hearing distance of the rail route, the impacts of noise on residents in the vicinity of the facility and the rail line is considered MODERATE.

Noise associated with barge transportation of coal and lime would be audible to visitors to Biscayne National Park. Given the environmental sensitivity of the park and the associated expectations of visitors to national parks, there would likely be a MODERATE noise impact on visitors to the park associated with such traffic.

At an alternate Florida site, there would be an aesthetic impact from the buildings, exhaust stacks, cooling towers, and the plume associated with the cooling towers. There would be a significant aesthetic impact associated with construction of a new 96-km (60-mi) transmission line to connect to other lines to enable delivery of electricity to the Miami area. Noise and light from the plant would be detectable offsite. Aesthetic impacts at the plant site would be mitigated if the plant were located in an industrial area adjacent to other power plants. Overall the aesthetic impacts associated with locating at an alternate site can be categorized as MODERATE to LARGE. The greatest contributor to this categorization is the aesthetic impact of the new transmission line.

#### Historic and Archaeological Resources

At the Turkey Point site or an alternate site, a cultural resource inventory would likely be needed for any onsite property that has not been previously surveyed. Other lands, if any, that are acquired to support the plant would also likely need an inventory of field cultural resources, identification and recording of extant historic and archaeological resources, and possible mitigation of adverse effects from subsequent ground-disturbing actions related to physical expansion of the plant site.

Prior to construction at the Turkey Point site or an alternate Florida site, studies would likely be needed to identify, evaluate, and address mitigation of the potential impacts of new plant construction on cultural resources. The studies would likely be needed for all areas of potential disturbance at the proposed plant site and along associated corridors where new construction would occur (e.g., roads, transmission corridors, rail lines, or other rights-of-

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way). Historic and archaeological resource impacts can generally be effectively managed and as such are considered SMALL.

#### Environmental Justice

No environmental pathways or locations have been identified that would result in disproportionately high and adverse environmental impacts on minority and low-income populations if a replacement coal-fired plant were built at the Turkey Point site. Some impacts on housing availability and prices during construction might occur, and this could disproportionately affect the minority and low-income populations. Closure of Turkey Point Units 3 and 4 would result in a decrease in employment of approximately 710 operating employees, possibly offset by projected growth in the South Miami-Dade County area. Following construction, it is possible that the ability of local government to maintain social services could be reduced at the same time as diminished economic conditions reduce employment prospects for minority or low-income populations. Overall, impacts would be SMALL to MODERATE, and would depend on the extent to which projected economic growth is realized and the ability of minority or low-income populations to commute to other jobs outside the South Miami-Dade County area.

Impacts at other sites would depend upon the site chosen and the nearby population distribution, but are likely to also be SMALL to MODERATE.

#### 8.2.1.2 Once-Through Cooling System

This section discusses the environmental impacts of constructing a coal-fired generation system at an alternate Florida site using once-through cooling. The impacts (SMALL, MODERATE, or LARGE) of this option are the same as the impacts for a coal-fired plant using the closed-cycle system. However, there are minor environmental differences between the closed-cycle and once-through cooling systems. Table 8.3 summarizes the incremental differences.

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# 8.2.2 Natural Gas-Fired Generation

FPL concluded in its ER that the Turkey Point site would not be a reasonable site for location of a natural gas-fired generating unit. The basis for this determination was the consideration that such a plant would likely necessitate the construction of approximately 240 km (150 mi) of pipeline, a portion of which would pass through ecologically sensitive Everglades habitat. FPL I suggested in its ER that a site near the center of the State would be a more suitable location (FPL 2000a). Nevertheless, the environmental impacts of the natural gas-fired alternative are examined in this section for both the Turkey Point site and an alternate Florida site. For the Turkey Point site, it is assumed that the plant would use the existing cooling canal system.

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	Change in Impacts from
Impact Category	Closed-Cycle Cooling System
Land Use	Impacts may be less (e.g., through elimination of cooling towers) or greater (e.g., if a reservoir is required).
Ecology	Impact would depend on ecology at the site. Possible impacts associated with entrainment of fish and shellfish in early life stages, impinge- ment of fish and shellfish, and heat shock.
Surface Water Use and Quality	Increased water withdrawal leading to possible water-use conflicts; thermal load higher than with closed-cycle cooling
Groundwater Use and Quality	No change
Air Quality	No change
Waste	No change
Human Health	No change
Socioeconomics	No change
Aesthetics	Elimination of cooling towers
Historic and Archaeological Resources	No change
Environmental Justice	No change

Table 8-3.Summary of Environmental Impacts of Coal-Fired Generation at an AlternateFlorida Site with Once-Through Cooling System

The Turkey Point site is currently served by a 61-cm (24-in) diameter natural gas pipeline. However, gas availability has been a problem, and Turkey Point Units 1 and 2 are principally fired with oil, with natural gas as a backup when available.

If a new natural gas-fired plant were built in southern Florida to replace Turkey Point Units 3 and 4, a new 500-kV transmission line would need to be constructed to connect to existing lines to transmit power to FPL's customers in the Miami area. The FPL ER assumes that the new line would be approximately 96 km (60 mi) long (FPL 2000a). Location of a new gas-fired generating plant anywhere in southern Florida could also necessitate the construction or upgrade of a natural gas pipeline from the plant to a supply point where a firm supply of gas would be available. The FPL ER assumes that Mobile Bay, Alabama, would be the closest supply point. Additionally, the ER assumes that such a pipeline, to the center of the State,

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would be approximately 800 km (500 mi) long and be located adjacent to existing highways. For delivery to the Turkey Point site, the pipeline originating in Mobile would either need to be extended to the Turkey Point site or be tied in to the existing gas pipeline serving the Turkey Point site. For the natural gas-fired alternative at the Turkey Point site, it is assumed that construction of a new pipeline to the Turkey Point site would be needed and that the distance would be approximately 20 percent longer than construction to the center of Florida. A second potential source of natural gas is liquefied natural gas (LNG) imported to the Elba Island facility in Georgia. The Elba Island facility is expected to be reactivated in 2003 (DOE/EIA 2000a). LNG imported to the Elba Island facility would need to be vaporized and transported to a Florida location via pipeline. A third potential source of natural gas is the proposed pipeline from Grand Bahama Island to Port Everglades. Port Everglades is a deepwater port principally located in Hollywood, Florida. Hollywood is approximately 72 km (45 mi) north of the Turkey Point site. The Federal Energy Regulatory Commission (FERC) has recently announced that it will prepare an EIS for the proposed pipeline (FERC 2001). A fourth potential source of natural gas is the Gulfstream Natural Gas System. This system, currently under construction, will deliver natural gas from Mobile, Alabama, across the Gulf of Mexico and terminate in Palm Beach County, Florida (Gulfstream Natural Gas System 2001). Delivery of natural gas is scheduled to commence in June 2002.

It is assumed that a replacement natural gas-fired plant would use combined-cycle technology (FPL 2000a). In the combined-cycle unit, hot combustion gases in a combustion turbine rotate the turbine to generate electricity. Waste combustion heat from the combustion turbine is routed through a heat-recovery boiler to make steam to generate additional electricity.

The following additional assumptions are made for the natural gas-fired plants (FPL 2000a):

 three 400-MW units, each consisting of two 150-MW combustion turbines and a 100-MW heat recovery boiler

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- natural gas with an average heating value of 37 MJ/m<sup>3</sup> (1000 Btu/ft<sup>3</sup>) as the primary fuel
- use of low-sulfur No. 2 fuel oil as backup fuel
- heat rate of 2 J fuel/J electricity (6,800 Btu/kWh)
- capacity factor of 0.9.

Unless otherwise indicated, the assumptions and numerical values used in Section 8.2.2 are from the FPL ER (FPL 2000a). The staff reviewed this information and compared it to environmental impact information in the GEIS. Although the OL renewal period is only 20 years, the impact of operating the natural gas-fired alternative for 40 years is considered (as a reasonable projection of the operating life of a natural gas-fired plant).

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#### 8.2.2.1 Closed-Cycle Cooling System

The overall impacts of the natural gas-generating system are discussed in the following sections and summarized in Table 8-4. The extent of impacts at an alternate Florida site will depend on the location of the particular site selected.

#### Land Use

For siting at Turkey Point, existing facilities and infrastructure would be used to the extent practicable, limiting the amount of new construction that would be required. Specifically, it is assumed that the natural gas-fired replacement plant alternative would use the cooling canal system, switchyard, offices, and transmission line right-of-way. Much of the land that would be used has been previously disturbed. At Turkey Point, it is assumed that approximately 14 ha (35 ac) would be needed for the plant and associated infrastructure. There would be an additional impact of up to approximately 4050 ha (10,000 ac) for construction and/or upgrade of a gas pipeline from Mobile Bay, Alabama. Significantly less land would be impacted if gas were to be available from the Gulfstream Natural Gas System or the proposed pipeline from Grand Bahama Island to Port Everglades.

For construction at an alternate site, it is assumed that 20 ha (50 ac) would be needed for the plant and associated infrastructure (NRC 1996). In addition, approximately 1000 ha (2500 ac) would be impacted for construction of a transmission line, assuming a 96-km (60-mi) line. Approximately 3640 ha (9000 ac) could potentially be disturbed during construction and/or upgrade of an underground pipeline from Mobile Bay, Alabama. Significantly less land would be impacted if gas were to be available from the Gulfstream Natural Gas System or the proposed pipeline from Grand Bahama Island to Port Everglades. Additional land would be required for natural gas wells and collection stations. Partially offsetting these offsite land requirements would be the elimination of the need for uranium mining to supply fuel for Units 3 and 4. The GEIS (NRC 1996;1999) estimated that approximately 400 ha (1000 ac) would be affected for mining the uranium and processing it during the operating life of a nuclear power plant. Overall, land-use impacts would be MODERATE to LARGE.

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At the Turkey Point site, there would be ecological impacts to land use for siting of the gasfired plant. There would also be substantial ecological impacts associated with bringing a new underground gas pipeline to the Turkey Point site, especially because the pipeline would likely have to be routed through sensitive Everglades habitat. Ecological impacts at an alternate site would depend on the nature of the land converted for the plant and transmission line. If a natural gas-fired plant were located at an alternate Florida site, there is a reasonable likelihood that the plant would be located adjacent to an existing power plant on

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 Table 8-4.
 Summary of Environmental Impacts of Natural Gas-Fired Generation at Turkey Point Site and an Alternate Florida Site Using Closed-Cycle Cooling

		Furkey Point Site	Alte	rnate Florida Site
Impact		•	••	<b>A</b>
		Comments		
Land Use	LARGE	offices, roads, and parking areas. Additional impact of up to approximately 4050 ha (10,000 ac) for construction and/or upgrade of an underground gas pipeline.	to LARGE	20 ha (50 ac) for power- block, offices, roads, and parking areas. Approxi- mately 1000 ha (2500 ac) for transmission line. Addi- tional impact of up to 3600 ha (9000 ac) for construc- tion and/or upgrade of an underground gas pipeline.
Ecology	MODERATE to LARGE	Uses undeveloped areas at current Turkey Point site, plus gas pipeline through sensitive Everglades habitat.	MODERATE to LARGE	Impact depends on loca- tion and ecology of the site, surface water body used for intake and dis- charge, and transmission and pipeline routes; poten- tial habitat loss and frag- mentation; reduced pro- ductivity and biological diversity. Likely plant sites already have power generation facilities.
Water Use and Quality	SMALL	Uses existing cooling canal system	SMALL to MODERATE	Impact depends on volume of water withdrawal and discharge and characteris- tics of surface water body.
Air Quality	MODERATE	Sulfur oxides • 13.6 MT/yr (15 tons/yr) Nitrogen oxides • 200 MT/yr (221 tons/yr) Carbon monoxide • 191 MT/yr (211 tons/yr) PM <sub>10</sub> particulates • 439 MT/yr (484 tons/yr) Some hazardous air pollutants	MODERATE	Same emissions as Turkey Point site
Waste	SMALL	Small amount of ash produced	SMALL	Same waste produced as if produced at the Turkey Point site

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	Turkey Point Site		Alternate Florida Site	
Impact				
Category	Impact	Comments	Impact	Comments
Human Health	SMALL	Impacts considered to be minor.	SMALL	Impacts considered to be minor
Socioeconomics	SMALL to MODERATE	During construction, impacts would be MODERATE. Up to 1200 additional workers during the peak of the 3-year construction period, followed by reduction from current Turkey Point Units 3 and 4 work force of 960 to 150; tax base preserved. Impacts during operation would be SMALL. Transportation impacts associated with construction workers would be MODERATE.	SMALL to MODERATE	During construction, impacts would be MODERATE. Up to 1200 additional workers during the peak of the 3-year construction period. Miami-Dade County would experience loss of tax base and employment, poten- tially offset by projected economic growth. Transportation impacts associated with construc- tion workers would be MODERATE.
Aesthetics	MODERATE	MODERATE aesthetic impact due to impact of plant units and stacks on environmentally sensitive Biscayne National Park.	MODERATE to LARGE	Greatest impact would be from the new transmission line that would be needed.
Historic and Archeological Resources	SMALL	Any potential impacts can likely be effectively managed.	SMALL	Same as Turkey Point; any potential impacts can likely be effectively managed.
Environmental Justice	SMALL to MODERATE	Impacts on minority and low- income communities should be similar to those experienced by the population as a whole. Some impacts on housing may occur during construction; loss of 810 operating jobs at Turkey Point Plant could reduce employment prospects for minority and low-income popu- lations. Impacts could be offset by projected economic growth and the ability of affected workers to commute to other jobs.	SMALL to MODERATE	Impacts vary depending on population distribution and makeup at site.

### Table 8-4. (contd)

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previously disturbed land, which would tend to mitigate impacts. Construction of the transmission line and construction and/or upgrading of the gas pipeline to serve the plant would be expected to have temporary ecological impacts. Ecological impacts to the plant site and utility easements could include impacts on threatened or endangered species, wildlife habitat loss and reduced productivity, habitat fragmentation, and a local reduction in biological diversity. At an alternate site, the cooling makeup water intake and discharge could have aquatic resource impacts. Overall, the ecological impacts are considered MODERATE to LARGE.

#### Water Use and Quality

Each of the gas-fired units would include a heat-recovery boiler from which steam would turn an electric generator. Steam would be condensed and circulated back to the boiler for reuse. A natural gas-fired plant sited at Turkey Point is assumed to use the existing cooling canal system. No groundwater is currently used for operation of Turkey Point Units 3 and 4. It is unlikely that groundwater would be used for an alternative natural gas-fired plant sited at Turkey Point. Water-use and quality impacts at Turkey Point would be SMALL.

A natural gas-fired plant at an alternate Florida site is assumed to use a closed-cycle cooling system with mechanical draft cooling towers. It is assumed that surface water would be used for cooling makeup water and discharge. Intake and discharge would involve relatively small quantities of water compared to the coal alternative. Intake from and discharge to any surface body of water would be regulated by the State of Florida.

Water-quality impacts from sedimentation during construction were characterized in the GEIS as SMALL. The GEIS also noted that operational water-quality impacts would be similar to, or less than, those from other generating technologies.

Use of groundwater for a natural gas-fired plant sited at an alternate site is a possibility. Any groundwater withdrawal would require a permit from the local permitting authority. Impacts on surface water would depend on the volume and other characteristics of the source water budget. Overall, water-use and -quality impacts at an alternate Florida site are considered SMALL to MODERATE.

#### Air Quality

Natural gas is a relatively clean-burning fuel. The gas-fired alternative would release similar types of emissions, but in lesser quantities than the coal-fired alternative.

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A new gas-fired generating plant located in south-central Florida would likely need a PSD permit and an operating permit under the Clean Air Act. A new combined-cycle natural gas power plant would also be subject to the new source performance standards for such units

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at 40 CFR 60, Subparts Da and GG. These regulations establish emission limits for particulates, opacity,  $SO_2$ , and  $NO_x$ .

Section 169A of the Clean Air Act (42 USC 7491) establishes a national goal of preventing future and remedying existing impairment of visibility in mandatory Class I Federal areas when impairment results from man-made air pollution. Everglades National Park is a Class I area where visibility is an important value (40 CFR 81.407). Any new fossil power plant in southern Florida has the potential to affect visibility in Everglades National Park. EPA has various regulatory requirements for visibility protection in 40 CFR 51, Subpart P, including a specific requirement for review of any new major stationary source in an area designated attainment or unclassified under the Clean Air Act. EPA issued a new regional haze rule in 1999 (64 FR 35714; July 1,1999 [EPA 1999]). The rule specifies that for each mandatory Class I Federal area located within a State, the State must establish goals that provide for reasonable progress towards achieving natural visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least-impaired days over the same period [40 CFR 51.308(d)(1)].

FPL projects the following emissions for the natural gas-fired alternative (FPL 2000a):

Sulfur oxides - 13.6 MT/yr (15 tons/yr) Nitrogen oxides - 200 MT/yr (221 tons/yr) Carbon monoxide - 191 MT/yr (211 tons/yr) PM<sub>10</sub> particulates - 439 MT/yr (484 tons/yr)

A natural gas-fired plant would also have unregulated carbon dioxide emissions that could contribute to global warming.

In December 2000, EPA issued regulatory findings on emissions of hazardous air pollutants from electric utility steam-generating units (EPA 2000). Natural gas-fired power plants were found by EPA to emit arsenic, formaldehyde, and nickel (EPA 2000). Unlike coal and oil-fired plants, EPA did not determine that regulation of emissions of hazardous air pollutants from natural gas-fired power plants should be regulated under Section 112 of the Clean Air Act.

Construction activities would result in temporary fugitive dust. Exhaust emissions would also come from vehicles and motorized equipment used during the construction process.

The preceding emissions would likely be the same at Turkey Point or at an alternate Florida site. Impacts from the above emissions would be clearly noticeable, but would not be sufficient to destabilize air resources as a whole. The overall air-quality impact for a new natural gas-generating plant sited at Turkey Point or at an alternate Florida site is considered MODERATE.

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• Waste

There will be small amounts of solid-waste products (i.e., ash) from burning natural gas fuel. The GEIS concluded that waste generation from gas-fired technology would be minimal. Gas firing results in very few combustion by-products because of the clean nature of the fuel. Waste generation at a gas-fired plant would be largely limited to typical office wastes. Waste-generation impacts would be so minor that they would not noticeably alter any important resource attribute. Construction-related debris would be generated during construction activities. Overall, the waste impacts would be SMALL for a natural gas-fired plant sited at Turkey Point or at an alternate Florida site.

#### Human Health

Table 8-2 of the GEIS identifies cancer and emphysema as potential health risks from gasfired plants. The risk may be attributable to  $NO_x$  emissions that contribute to ozone formation, which in turn contribute to health risks.  $NO_x$  emissions from the plant would be regulated by the Florida Department of Environmental Protection (FDEP). Human health effects would not be detectable or would be sufficiently minor that they would neither destabilize nor noticeably alter any important attribute of the resource. Overall, the impacts on human health of the natural gas-fired alternative sited at Turkey Point or at an alternate Florida site are considered SMALL.

#### Socioeconomics

A 3-year construction period is assumed. Peak employment would be approximately 1200 workers (NRC 1996; 1999). It is assumed that construction would take place while Units 3 and 4 continue operation and would be completed by the time they permanently cease operations. During construction, the communities surrounding the Turkey Point site would experience demands on housing and public services that could have MODERATE impacts. These impacts would be tempered by construction workers commuting to the site from other parts of Miami-Dade County or from other counties. After construction, the communities would be impacted by the loss of jobs. The current Turkey Point Units 3 and 4 work force (960 workers) would decline through a decommissioning period to a minimal maintenance size. The gas-fired plant would introduce a replacement tax base at Turkey Point or an alternate Florida site and approximately 150 new permanent jobs. For siting at an alternate Florida site, impacts in South Miami-Dade County resulting from decommissioning of Units 3 and 4 may be offset by economic growth projected to occur in the county.

The GEIS (NRC 1996; 1999) concluded that socioeconomic impacts from constructing a natural gas-fired plant would not be very noticeable and that the small operational work force would have the lowest socioeconomic impacts of any nonrenewable technology. Compared to the coal-fired and nuclear alternatives, the smaller size of the construction

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work force, the shorter construction time frame, and the smaller size of the operations work force would mitigate socioeconomic impacts. For these reasons, the socioeconomic impacts associated with construction and operation of a natural gas-fired power plant would be SMALL to MODERATE for siting at Turkey Point or at an alternate Florida site. Depending on other growth in the area, socioeconomic effects could be noticed, but they would not destabilize any important socioeconomic attribute.

Transportation impacts associated with construction and operating personnel commuting to the plant site would depend on the population density and transportation infrastructure in the vicinity of the site. The impacts can be classified as MODERATE for siting at Turkey Point or at an alternate Florida site.

Overall, socioeconomic impacts resulting from construction of a natural gas-fired plant at Turkey Point or an alternate Florida site and from decommissioning of Turkey Point Units 3 and 4 would be SMALL to MODERATE.

#### Aesthetics

The turbine buildings (approximately 30 m [100 ft] tall) and exhaust stacks (approximately 38 m [125 ft] tall) would be visible during daylight hours from offsite. The gas pipeline compressors would also be visible. Noise and light from the plant would be detectable offsite. No travel through Biscayne National Park would be needed to support plant operations. During construction, some plant equipment might be delivered by barge and thereby pass through the park. At the Turkey Point site, these impacts would result in a MODERATE aesthetic impact given the environmental sensitivity of Biscayne National Park and the expectations of visitors to national parks.

At an alternate Florida site, the buildings, cooling towers, cooling tower plumes, and the associated transmission line and gas pipeline compressors would be visible offsite. The visual impact of a new 96-km (60-mi) transmission line would be especially significant. Aesthetic impacts would be mitigated if the plant were located in an industrial area adjacent to other power plants. Overall, the aesthetic impacts associated with an alternate Florida site are categorized as MODERATE to LARGE. The greatest contributor to this categorization is the aesthetic impact of the new transmission line.

#### Historic and Archaeological

At both Turkey Point and an alternate Florida site, a cultural resource inventory would likely be needed for any onsite property that has not been previously surveyed. Other lands, if any, that are acquired to support the plant would also likely need an inventory of field cultural resources, identification and recording of extant historic and archaeological

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resources, and possible mitigation of adverse effects from subsequent ground-disturbing actions related to physical expansion of the plant site.

Prior to construction at Turkey Point or an alternate Florida site, studies would likely be needed to identify, evaluate, and address mitigation of the potential impacts of new plant construction on cultural resources. The studies would likely be needed for all areas of potential disturbance at the proposed plant site and along associated corridors where new construction would occur (e.g., roads, transmission and pipeline corridors, or other rights-of-way). Impacts to cultural resources can be effectively managed under current laws and regulations and kept SMALL.

#### Environmental Justice

No environmental pathways or locations have been identified that would result in disproportionately high and adverse environmental impacts on minority and low-income populations if a replacement natural gas-fired plant were built at the Turkey Point site. Some impacts on housing availability and prices during construction might occur, and this could disproportionately affect minority and low-income populations. Closure of Turkey Point Units 3 and 4 would result in a decrease in employment of approximately 810 operating employees, possibly offset by general growth in the South Miami-Dade County area. Following construction, it is possible that the ability of local government to maintain social services could be reduced at the same time as diminished economic conditions reduce employment prospects for minority or low-income populations. Overall, impacts are expected to be SMALL to MODERATE. Projected economic growth in South Miami-Dade County and the ability of minority and low-income populations to commute to other jobs outside the South Miami-Dade County area could mitigate any adverse effects.

Impacts at an alternate Florida site would depend upon the site chosen and the nearby population distribution, but are likely to also be SMALL to MODERATE.

#### 8.2.2.2 Once-Through Cooling System

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This section discusses the environmental impacts of constructing a natural gas-fired generation system at an alternate Florida location using once-through cooling. The impacts (SMALL, MODERATE, or LARGE) of this option are the same as the impacts for a natural gas-fired plant using the closed-cycle system. However, there are minor environmental differences between the closed-cycle and once-through cooling systems. Table 8.5 summarizes the incremental differences.

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	Change in Impacts from
Impact Category	Closed-Cycle Cooling System
Land Use	Impacts may be less (e.g., through elimination of cooling towers) or greater (e.g., if a reservoir is required).
Ecology	Impact would depend on ecology at the site. Potential impacts associated with entrainment of fish and shellfish in early life stages, impingement of fish and shellfish, and heat shock.
Surface Water Use and Quality	Increased water withdrawal leading to possible water-use conflicts, thermal load higher than with closed-cycle cooling
Groundwater Use and Quality	No change
Air Quality	No change
Waste	No change
Human Health	No change
Socioeconomics	No change
Aesthetics	Elimination of cooling towers
Historic and Archaeological Resources	No change
Environmental Justice	No change

# Table 8-5. Summary of Environmental Impacts of Natural Gas-Fired Generation at an Alternate Florida Site with Once-Through Cooling

#### 8.2.3 Nuclear Power Generation

Since 1997 the NRC has certified three new standard designs for nuclear power plants under the procedures at 10 CFR 52, Subpart B. These designs are the 1300-MW U.S. Advanced Boiling Water Reactor (10 CFR 52, Appendix A), the 1300-MW System 80+ Design (10 CFR 52, Appendix B), and the 600-MW AP600 Design (10 CFR 52, Appendix C). All of these plants are light-water reactors. Although no applications for a construction permit or a combined license based on these certified designs have been submitted to NRC, the submission of the design certification applications indicates continuing interest in the possibility of licensing new nuclear power plants. In addition, recent volatility in prices of natural gas and electricity have made new nuclear power plant construction more attractive from a cost standpoint. Consequently, construction of a new nuclear power plant at the Turkey Point site

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using the existing cooling canal system and at an alternate Florida site using both closed- and open-cycle cooling are considered in this section. It is assumed that the new nuclear plant would have a 40-year lifetime. Consideration of a new nuclear generating plant to replace Units 3 and 4 was not included in the FPL ER.

The NRC has summarized environmental data associated with the uranium fuel cycle in Table S-3 of 10 CFR 51.51. The impacts shown in Table S-3 are representative of the impacts that would be associated with a replacement nuclear power plant built to one of the certified designs, sited at Turkey Point or an alternate Florida site. The impacts shown in Table S-3 are for a 1000-MW(e) reactor and would need to be adjusted to reflect replacement of Units 3 and 4, which have a capacity of 1386 MW(e). The environmental impacts associated with transporting fuel and waste to and from a light-water-cooled nuclear power reactor are summarized in Table S-4 of 10 CFR 51.52. The summary of NRC's findings on National Environmental Policy Act (NEPA) issues for license renewal of nuclear power plants in Table B-1 of 10 CFR 51 Subpart A, Appendix B, is also relevant for consideration of environmental impacts associated with the operation of a replacement nuclear power plant. Additional environmental impact information for a replacement nuclear power plant using closed-cycle cooling is presented in Section 8.2.3.1 and using open-cycle cooling in Section 8.2.3.2.

#### 8.2.3.1 Closed-Cycle Cooling System

The overall impacts of the nuclear generating system are discussed in the following sections. The impacts are summarized in Table 8-6. The extent of impacts at an alternate Florida site will depend on the location of the particular site selected.

#### Land Use

The existing facilities and infrastructure at the Turkey Point site would be used to the extent practicable, limiting the amount of new construction that would be required. A replacement nuclear power plant at the Turkey Point site would alter approximately 200 ha (500 ac) of land to industrial use (NRC 1996). It is assumed that a replacement nuclear power plant would use the existing cooling canal system, switchyard, offices, and transmission line right-of-way. Much of the land that would be used has been previously disturbed. There would be no net change in land needed for uranium mining because land needed for the new nuclear plant would offset land needed to supply uranium for fuel for Units 3 and 4.

The impact of a replacement nuclear generating plant on land use at the existing Turkey Point site is best characterized as MODERATE. The impact would be greater than the OL renewal alternative.

Land-use requirements at an alternate Florida site would be approximately 200 to 400 ha (500 to 1000 ac) plus the possible need for a transmission line to connect to existing lines to

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 Table 8-6.
 Summary of Environmental Impacts of New Nuclear Power Generation at the
 Turkey Point Site and an Alternate Florida Site Using Closed-Cycle Cooling

		Turkey Point Site	All	ternate Florida Site
Impact	• •	<b>-</b> .		<b>•</b> .
Category	Impact	Comments	Impact	Comments
Land Use	MODERATE	Requires approximately 200 ha (500 ac) for the plant	MODERATE to LARGE	Requires approximately 200 to 400 ha (500 to 1000 ac) plus land for transmission line (1000 ha [2500 ac] assuming a 96 km [60 mi] line)
Ecology	MODERATE	Uses undeveloped areas at current Turkey Point site	MODERATE to LARGE	Impact depends on location and ecology of the site, surface water body used for intake and discharge, and transmission line route; potential habitat loss and fragmentation; reduced productivity and biological diversity.
Water Use and Quality	SMALL	Uses existing cooling canal system	SMALL to MODERATE	Impact will depend on the volume of water withdrawn and discharged and the characteristics of the surface water body.
Air Quality	SMALL	Fugitive emissions and emissions from vehicles and equipment during construction. Small amount of emissions from diesel generators and possibly other sources during operation.	SMALL	Same impacts as Turkey Point site
Waste	SMALL	Waste impacts for an operating nuclear power plant are set out in 10 CFR 51, Appendix B, Table B-1. Debris would be generated and removed during construction.	SMALL	Same impacts as Turkey Point site
Human Health	SMALL	Human health impacts for an operating nuclear power plant are set out in 10 CFR 51, Appendix B, Table B-1.	SMALL	Same impacts as Turkey Point site

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Table 8-6. (contd)

· · · · · · · · · · · · · · · · · · ·	·	Turkey Point Site A	Iternate Florida Site
Impact			
Category	Impact	Comments Impact	Comments
Socioeconomics	SMALL to	During construction, impacts SMALL to	Construction impacts depend
	LARGE	would be MODERATE. Up to LARGE	on location. Impacts at a
		2500 workers during peak	rural location could be
		period of the 6-year construc-	LARGE. Miami-Dade County
		tion period. Operating work	would experience loss of tax
		force assumed to be similar to	base and employment.
	· · ·	Units 3 and 4; tax base	possibly offset by economic
	· · ·	preserved. Impacts during	growth. Transportation
	•	operation would be SMALL.	impacts of construction
		Transportation impacts	workers could be
	,	associated with construction	MODERATE to LARGE.
		workers could be MODERATE	Transportation impacts of
		to LARGE. Transportation	commuting plant personnel
		impacts of commuting plant	could be SMALL to
		personnel would be SMALL	MODERATE
Aesthetics	SMALL	No exhaust stacks or cooling MODERATE	Greatest impact is from the
		towers would be needed. to LARGE	new transmission line that
		Daytime visual impact could be	would be needed.
		mitigated by landscaping and	
	· ·	appropriate color selection for	•
		buildings. Visual impact at	
		night could be mitigated by	
		reduced use of lighting and	
		appropriate shielding. Noise	
		impacts would be relatively	
		small and could be mitigated.	. •
		There would be no travel	
		through Biscayne National	· · ·
		Park.	
Historic and	SMALL	Any potential impacts can likely SMALL	Any potential impacts can
Archeological		be effectively managed.	likely be effectively managed.
Resources			
	CMALL		
Environmental	SMALL	impacts on minority and low- SMALL to	Impacts will vary depending
Justice		income communities should be MODERATE	on population distribution and
		similar to those experienced by	makeup at the site. Impacts
Å	-	the population as a whole.	to minority and low-income
	:	Some impacts on nousing may	Dede County accession of white
		occur during construction.	Dade County associated WIIN
•			Lipite 2 and 4 april 10
			Coms 3 and 4 could be
		• • •	Significant, but could also be
			miligated by projected
		and the second second second second second	economic growin for the
<u> </u>		·	area.

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transmit power to FPL's customers in the Miami area. Assuming a 96-km (60-mi) transmission line, an additional 1000 ha (2500 ac) would be needed. In addition, it may be necessary to construct a rail spur to an alternate site to bring in equipment during construction. Depending particularly on transmission line routing, siting a new nuclear plant at an alternate Florida site would result in MODERATE to LARGE land-use impacts.

#### Ecology

Locating a replacement nuclear power plant at the Turkey Point site would alter ecological resources because of the need to convert roughly 200 to 400 ha (500 to 1000 ac) of land to industrial use. Some of this land, however, would have been previously disturbed.

Siting at Turkey Point would have a MODERATE ecological impact that would be greater than renewal of the Unit 3 and 4 OLs.

At an alternate site, there would be construction impacts and new incremental operational impacts. Even assuming siting at a previously disturbed area, the impacts would alter the ecology. Impacts could include wildlife habitat loss, reduced productivity, habitat fragmentation, and a local reduction in biological diversity. Use of cooling makeup water from a nearby surface water body could adversely impact aquatic resources. Construction and maintenance of the transmission line would have ecological impacts. Overall, the ecological impacts at an alternate site would be MODERATE to LARGE.

#### Water Use and Quality

The replacement nuclear plant alternative at the Turkey Point site is assumed to use the existing cooling canal system, which would minimize incremental water-use and -quality impacts. Surface-water impacts are expected to remain SMALL; the impacts would be sufficiently minor that they would not noticeably alter any important attribute of the resource.

It is assumed that a new nuclear power plant located at Turkey Point would obtain potable, process, and fire-protection water from the Miami-Dade County public water system similar to the current practice for Turkey Point Units 3 and 4 (see Section 2.2.2).

Cooling towers would likely be used at alternate sites. For alternate sites, the impact on the surface water would depend on the volume of water needed for makeup water, the discharge volume, and the characteristics of the receiving body of water. Intake from and discharge to any surface body of water would be regulated by the State of Florida. The impacts would be SMALL to MODERATE.

No groundwater is currently used for operation of Turkey Point Units 3 and 4. It is unlikely that groundwater would be used for an alternative nuclear power plant sited at Turkey Point.

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Use of groundwater for a nuclear power plant sited at an alternate site is a possibility. Any groundwater withdrawal would require a permit from the local permitting authority.

#### Air Quality

Construction of a new nuclear plant sited at Turkey Point or an alternate site would result in fugitive emissions during the construction process. Exhaust emissions would also come from vehicles and motorized equipment used during the construction process. An operating nuclear plant would have minor air emissions associated with diesel generators. Emissions would be regulated by the FDEP. Overall, emissions and associated impacts are considered SMALL.

Waste 🗠

The waste impacts associated with operation of a nuclear power plant are set out in Table B-1 of 10 CFR 51, Subpart A, Appendix B. Construction-related debris would be generated during construction activities and removed to an appropriate disposal site. Overall, waste impacts are considered SMALL.

Siting the replacement nuclear power plant at a site other than Turkey Point would not alter waste generation. Therefore, the impacts would be SMALL.

Human Health

Human health impacts for an operating nuclear power plant are set out in 10 CFR 51 Subpart A, Appendix B, Table B-1. Overall, human health impacts are considered SMALL.

Siting the replacement nuclear power plant at a site other than Turkey Point would not alter human health impacts. Therefore, the impacts would be SMALL.

Socioeconomics

The construction period and the peak work force associated with new nuclear power plant construction are currently unquantified (NRC 1996). In the absence of quantified data, a construction period of 6 years and a peak work force of 2500 is assumed. It is assumed that construction would take place while the existing nuclear units continue operation and would be completed by the time Turkey Point Units 3 and 4 permanently cease operations. During construction, the communities surrounding the Turkey Point site would experience demands on housing and public services that could have MODERATE impacts. These impacts would be tempered by construction workers commuting to the site from other parts of Miami-Dade County or from other counties. After construction, the communities would be

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impacted by the loss of the construction jobs, although this loss would be possibly offset by other growth currently being projected for South Miami-Dade County.

The replacement nuclear unit(s) are assumed to have an operating work force comparable to the 960 workers currently working at Turkey Point Units 3 and 4. The replacement nuclear unit(s) would provide a new tax base to offset the loss of tax base associated with decommissioning of Turkey Point Units 3 and 4. For all of these reasons, the appropriate characterization of nontransportation socioeconomic impacts for replacement nuclear units constructed at Turkey Point would be SMALL to MODERATE; the socioeconomic impacts would be noticeable, but would be unlikely to destabilize the area.

During the 6-year construction period, up to 2500 construction workers would be working at the Turkey Point site in addition to the 960 workers at Units 3 and 4. The addition of the construction workers could place significant traffic loads on existing highways, particularly those leading to the Turkey Point site from Florida City. Such impacts would be MODERATE to LARGE. Transportation impacts related to commuting of plant operating personnel would be similar to current impacts associated with operation of Units 3 and 4 and are considered SMALL.

Construction of a replacement nuclear power plant at an alternate Florida site would relocate some socioeconomic impacts, but would not eliminate them. The communities around the Turkey Point site would still experience the impact of Turkey Point Units 3 and 4 operational job loss (although potentially tempered by projected economic growth), and the communities around the new site would have to absorb the impacts of a large, temporary work force (up to 2500 workers at the peak of construction) and a permanent work force of approximately 960 workers. The GEIS (NRC 1996; 1999) indicated that socioeconomic impacts at a rural site would be larger than at an urban site because more of the peak construction work force would need to move to the area to work. The Turkey Point site is within commuting distance of the Miami metropolitan area and is therefore not considered a rural site. Alternate sites in Florida would need to be analyzed on a case-by-case basis. Socioeconomic impacts at a rural site could be LARGE. Transportation-related impacts associated with commuting workers at an alternate Florida site are site dependent, but could be MODERATE to LARGE. Transportation impacts related to commuting of plant operating personnel would also be site dependent, but can be characterized as SMALL to MODERATE.

# Aesthetics

The containment buildings for a replacement nuclear power plant sited at Turkey Point and other associated buildings would likely be visible in daylight hours over many miles. The replacement nuclear units would also likely be visible at night because of outside lighting.

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The National Park Service states in its scoping comments (see Appendix E) that the Turkey Point Plant can be seen at night as far east as the park's barrier islands, which are 11 km (7 mi) offshore. Visual impacts could be mitigated by landscaping and selecting a color for buildings that is consistent with the environment. Visual impact at night could be mitigated by reduced use of lighting and appropriate use of shielding. No exhaust stacks would be needed. No cooling towers would be needed assuming use of the existing cooling canal system.

A replacement nuclear plant sited at Turkey Point would be visible from Biscayne National Park. However, the visual impact can be kept SMALL. No travel through the park would be needed to support plant operations. During construction, some plant equipment might be delivered by barge and thereby pass through the park.

Noise from operation of a replacement nuclear power plant would potentially be audible by visitors to Biscayne National Park in calm wind conditions or when the wind is blowing in the direction of the park. Mitigation measures, such as reduced or no use of outside loud-speakers, can be employed to reduce noise level and keep the impact SMALL.

At an alternate Florida site, there would be an aesthetic impact from the buildings, cooling towers, and the plume associated with the cooling towers. There would also be a significant aesthetic impact associated with construction of a new 96-km (60-mi) transmission line to connect to other lines to enable delivery of electricity to the Miami area. Noise and light from the plant would be detectable offsite. The impact of noise and light would be mitigated if the plant is located in an industrial area adjacent to other power plants. Overall, the aesthetic impacts associated with locating at an alternative site can be categorized as MODERATE to LARGE. The greatest contributor to this categorization is the aesthetic impact of the new transmission line.

Historic and Archaeological Resources

At both Turkey Point and an alternate Florida site, a cultural resource inventory would likely be needed for any onsite property that has not been previously surveyed. Other lands, if any, that are acquired to support the plant would also likely need an inventory of field cultural resources, identification and recording of extant historic and archaeological resources, and possible mitigation of adverse effects from subsequent ground-disturbing actions related to physical expansion of the plant site.

Prior to construction at Turkey Point or another site, studies would likely be needed to identify, evaluate, and address mitigation of the potential impacts of new plant construction on cultural resources. The studies would likely be needed for all areas of potential disturbance at the proposed plant site and along associated corridors where new construction would occur (e.g., roads, transmission corridors, rail lines, or other rights-of-

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way). Historic and archaeological resource impacts can generally be effectively managed and as such are considered SMALL.

# Environmental Justice

No environmental pathways or locations have been identified that would result in disproportionately high and adverse environmental impacts on minority and low-income populations if a replacement nuclear plant were built at the Turkey Point site. Some impacts on housing availability and prices during construction might occur, and this could disproportionately affect the minority and low-income populations. After completion of construction, it is possible that the ability of the local government to maintain social services could be reduced at the same time as diminished economic conditions reduce employment prospects for the minority and low-income populations. Overall, impacts are expected to be SMALL. Projected economic growth in South Miami-Dade County and the ability of minority and lowincome populations to commute to other jobs outside the South Miami-Dade County area could mitigate any adverse effects.

Impacts at other sites would depend on the site chosen and the nearby population distribution, but are likely to be SMALL to MODERATE. Impacts to minority and low-income residents of South Miami-Dade County associated with closure of Turkey Point Units 3 and 4 could be significant, but could also be mitigated by projected economic growth for the area.

# 8.2.3.2 Once-Through Cooling System

This section discusses the environmental impacts of constructing a nuclear power plant at an alternate Florida site using once-through cooling. The impacts (SMALL, MODERATE, or LARGE) of this option are the same as the impacts for a nuclear power plant using the closed-cycle system. However, there are minor environmental differences between the closed-cycle and once-through cooling systems. Table 8.7 summarizes the incremental differences.

# 8.2.4 Oil-Fired Generation

ElA projects that oil-fired plants will account for very little of the new generation capacity in the United States during the 2000 to 2020 time period because of higher fuel costs and lower efficiencies (DOE/EIA 2000a). Nevertheless, an oil-fired generating alternative at the Turkey Point site for replacement of power generated by Turkey Point Units 3 and 4 is considered in this section principally because co-located Turkey Point Units 1 and 2 are oil-fired generation plants and the infrastructure to support the oil-fired generation option is already in place at the Turkey Point site. It is assumed that an oil-fired plant sited at Turkey Point would use the existing cooling canal system. Oil-fired generation at an alternate Florida site is not considered

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Table 8-7. Sun	nmary of Environme	ental Impacts of a	New Nuclear	Power Plant Sited at an
Alte	rnate Florida Site w	ith Once-Through	Cooling	

Impact Category	Change in Impacts from Closed-Cycle Cooling System				
Land Use	Impacts may be less (e.g., through elimination of cooling towers) or greater (e.g., if a reservoir is required). Impacts would depend on ecology at the site. Possible impacts associated with entrainment of fish and shellfish in early life stages, impingement of fish and shellfish, and heat shock.				
Ecology					
Surface Water Use and Quality	Increased water withdrawal leading to possible water-use conflicts, thermal load higher than with closed-cycle cooling				
Groundwater Use and Quality	No change				
Air Quality	No change				
Groundwater Use and Quality	No change				
Air Quality	No change				
Waste	No change				
Human Health	No change				
Socioeconomics	No change				
Aesthetics	Elimination of cooling towers				
Historic and Archaeological Resources	No change				
Environmental Justice	No change				

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I in this SEIS because of the EIA projection that little, if any, new oil-fired generation capacity will be constructed in the 2000 to 2020 time period.

Unit 1 at Turkey Point began commercial operation in 1967 and has a net summer capability of 410 MW. Unit 2 began commercial operation in 1968 and has a net summer capability of
400 MW (DOE/EIA 2000d, Table 20). Both units are fueled by Number 6 fuel oil as the primary fuel with natural gas as the alternate fuel.

The following additional assumptions are made for the replacement oil-fired plants (FPL 2000a):

- three 400-MW tangentially fired units
- use of Number 6 fuel oil
- heat rate of 2.9 J fuel/J electricity (9800 Btu/kWh)
- capacity factor of 0.9.

Unless otherwise indicated, the assumptions and numerical values used in Section 8.2.4 are from the FPL ER (FPL 2000a). The staff reviewed this information and compared it to environmental impact information in the GEIS. Although the OL renewal period is only 20 years, the impact of operating the oil-fired alternative for 40 years is considered (as a reasonable projection of the operating life of a oil-fired plant).

The overall environmental impacts of the oil-fired generating system are discussed in the following sections and summarized in Table 8-8.

# 8.2.4.1 Land Use

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The existing facilities and infrastructure at the Turkey Point site would be used to the extent practicable, limiting the amount of new construction that would be required. Specifically, it is assumed that the oil-fired alternatives would use the cooling canal system, switchyard, offices, and transmission line right-of-way. Much of the land that would be used has been previously disturbed.

The oil-fired generation alternative would necessitate converting roughly an additional 50 ha (120 ac) of the Turkey Point site to industrial use for the plant and associated facilities including oil storage tanks. Additional land-use changes would occur offsite in an undetermined area to supply oil for the plant. The GEIS estimated that approximately 650 ha (1600 ac) would be affected for oil wells and support facilities to support an oil-fired plant during its operational life (NRC 1996). Partially offsetting this offsite land use would be the elimination of the need for uranium mining to supply fuel for Units 3 and 4. The GEIS (NRC 1996; 1999) estimated that

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# Table 8-8. Summary of Environmental Impacts Associated with New Oil-Fired Generation Plants at Turkey Point Site Assuming Use of Existing Cooling Canal System

Impact Category	Impact	Comments				
Land Use	SMALL to MODERATE	102 ha (250 ac) for powerblock, oil storage, waste storage, offices, roads, and parking areas. Additional land impacts for oil wells and support facilities.				
Ecology	MODERATE to LARGE	Uses undeveloped areas at current Turkey Point site plus barge channel. Impacts to Biscayne National Park from barge transport of oil could be significant.				
Water Use and Quality	SMALL	Uses existing cooling canal system				
Air Quality	MODERATE	Sulfur oxides - 6930 MT/yr (7640 tons/yr) Nitrogen oxides - 2980 MT/yr (3290 tons/yr) Total suspended particulates - 50 MT/yr (55 tons/yr), including 32 MT/yr (35 tons/yr) of PM <sub>10</sub> particulates Carbon monoxide - 1430 MT/yr (1580 tons/yr) Some hazardous air pollutants including mercury				
Waste	MODERATE	Approximately 225,000 MT/yr (250,000 tons/yr) of ash and scrubber sludge requiring approximately 52 ha (130 ac) for disposal				
Human Health	SMALL	Impacts are uncertain, but considered SMALL in the absence of more quantitative data.				
Socioeconomics	MODERATE	During construction, impacts would be MODERATE. Up to 1700 addi- tional workers during the peak of the 3- to 4-year construction period, followed by reduction from current Turkey Point Units 3 and 4 work force of 960 to approximately 200. Tax base preserved. Impacts during operation would be SMALL. Transportation impacts associated with construction workers would be MODERATE.				
Aesthetics	MODERATE to LARGE	MODERATE to LARGE impact from the plant and stacks to Biscayne National Park visitors. Barge transportation of oil and lime would have a MODERATE impact. Noise impact of the plant and related transportation would be MODERATE given the environmental sensitivity of Biscayne National Park.				
Historic and Archaeological Resources	SMALL	Any potential impacts can likely be effectively managed.				
Environmental Justice	SMALL to MODERATE	Impacts on minority and low-income communities should be similar to those experienced by the population as a whole. Some impacts on housing may occur during construction; loss of 760 operating jobs could reduce employment prospects for minority and low-income populations. Impacts could be offset by projected economic growth and the ability of affected workers to commute to other jobs.				

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approximately 400 ha (1000 ac) would be affected for mining the uranium and processing it during the operating life of a nuclear power plant.

Approximately 225,000 MT (250,000 tons) of oil-combustion by-products per year (ash and scrubber sludge) would be disposed of onsite, requiring approximately 52 ha (130 ac) for a by-product disposal area for the 40-year expected life of the plant.<sup>(a)</sup> Facilities would be constructed to control and treat leachate from ash and scrubber sludge disposal areas. It is assumed that oil-fired generation structures and facilities, including oil storage and ash and scrubber sludge disposal areas, would all be located within the current Turkey Point site boundary.

The impact of an oil-fired generating unit on land use at the Turkey Point site is best characterized as SMALL to MODERATE. The impact would be greater than the OL renewal alternative.

# 8.2.4.2 Ecology

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I Locating an oil-fired alternative energy source at the existing Turkey Point site would alter ecological resources because of the need to convert roughly 102 ha (250 ac) of land to industrial use (plant, oil storage, waste storage, ash and scrubber sludge disposal). Some of this land, however, would have been previously disturbed.

Ecological impacts associated with transporting oil and lime to the Turkey Point site would be significant. If rail is used, a rail spur with a minimum length of 14 km (9 mi) would need to be constructed. Construction of at least a portion of the spur through ecologically sensitive wetlands would likely be needed. The barge delivery option would have negative ecological implications for waters included within Biscayne National Park. Written scoping comments submitted by the National Park Service (included in Appendix E) state that barges currently bringing oil for Turkey Point Units 1 and 2 have run aground within Biscayne National Park numerous times. The comments state that each trip adversely impacts water quality by churning up the bottom of Biscayne Bay and creating a turbidity plume that lasts long after the barge has passed. Turbidity limits the photosynthesis of the phytoplanktonic and seagrass communities that are essential for a healthy marine ecosystem. The comments also point out

Siting at the existing Turkey Point site would have a MODERATE to LARGE ecological impact that would be greater than renewal of the Unit 3 and 4 OLs.

that the thrust from the tugboat may disrupt seagrass recovery by ripping it from the bottom,

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along with other attached vegetation.

<sup>(</sup>a) Only half of the land area needed for by-product disposal is directly attributable to the alternative of renewing the Turkey Point Units 3 and 4 OLs for 20 years.

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#### 8.2.4.3 Water Use and Quality

The oil-fired generation alternative at the Turkey Point site is assumed to use the existing cooling canal system, which would minimize incremental water-use and -quality impacts. Surface-water impacts are expected to remain SMALL; the impacts would be sufficiently minor that they would not noticeably alter any important attribute of the resource.

It is assumed that an oil-fired plant located at Turkey Point would obtain potable, process, and fire protection water from the Miami-Dade County public water system similar to the current practice for Turkey Point Units 3 and 4 (see Section 2.2.2).

No groundwater is currently used for operation of Turkey Point Units 3 and 4. It is unlikely that groundwater would be used for an alternative oil-fired plant sited at Turkey Point.

#### 8.2.4.4 Air Quality

The air-quality impacts of oil-fired generation vary considerably from those of nuclear power due to emissions of  $SO_x$ ,  $NO_x$ , particulates, carbon monoxide, and hazardous air pollutants such as mercury.

A new oil-fired generating plant located in south Florida would likely need a PSD permit and an operating permit under the Clean Air Act. The plant would need to comply with the new source performance standards for such plants set forth in 40 CFR Part 60, Subpart Da. The standards establish limits for particulate matter and opacity (40 CFR 60.42a), SO<sub>2</sub> (40 CFR 60.43a), and NO<sub>x</sub> (40 CFR 60.44a).

Section 169A of the Clean Air Act (42 USC 7491) establishes a national goal of preventing future and remedying existing impairment of visibility in mandatory Class I Federal areas when impairment results from man-made air pollution. Everglades National Park is a Class I area where visibility is an important value (40 CFR 81.407). Any new fossil power plant in southern Florida has the potential to affect visibility in Everglades National Park. EPA has various regulatory requirements for visibility protection in 40 CFR Part 51, Subpart P, including a specific requirement for review of any new major stationary source in an area designated as attainment or unclassified under the Clean Air Act. EPA issued a new regional haze rule in 1999 (64 FR 35714; July 1,1999 [EPA 1999]). The rule specifies that for each mandatory Class I Federal area located within a State, the State must establish goals that provide for reasonable progress towards achieving natural visibility for the most- impaired days over the period of the implementation plan and ensure no degradation in visibility for the least-impaired days over the same period [40 CFR 51.308(d)(1)].

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Impacts for particular pollutants are as follows:

 <u>Sulfur oxides emissions</u>. FPL states in its ER that an alternative coal-fired plant located at the Turkey Point site would use spray-drying technology (dry scrubber) for flue-gas desulfurization rather than a wet scrubber (FPL 2000a). The dry scrubber technology is also assumed for a new oil-fired plant. Lime/limestone would be used for the flue-gas desulfurization (FPL 2000a). FPL notes that the saline groundwater at the Turkey Point site would be incompatible with the chemistry of a flue-gas desulfurization scrubbing process and the higher corrosivity of the saline groundwater would increase the construction, operation, and maintenance costs.

A new oil-fired power plant would be subject to the requirements in Title IV of the Clean Air Act. Title IV was enacted to reduce emissions of  $SO_2$  and  $NO_x$ , the two principal precursors of acid rain, by restricting emissions of these pollutants from power plants. Title IV caps aggregate annual power plant  $SO_2$  emissions and imposes controls on  $SO_2$  emissions through a system of marketable allowances. EPA issues one allowance for each ton of  $SO_2$ that a unit is allowed to emit. New units do not receive allowances, but are required to have allowances to cover their  $SO_2$  emissions. Owners of new units must therefore acquire allowances from owners of other power plants by purchase or reduce  $SO_2$  emissions at other power plants they own. Allowances can be banked for use in future years. Thus, a new oil-fired power plant would not add to net regional  $SO_2$  emissions, although it might do so locally. Regardless,  $SO_2$  emissions would be greater for the oil alternative than the OL renewal alternative.

FPL estimates that by using the best available control technology for  $SO_x$  emissions, the total annual stack emissions from an alternative oil-fired replacement plant would be approximately 6930 MT (7640 tons) of  $SO_x$  (FPL 2000a).

<u>Nitrogen oxides emissions</u>. Section 407 of the Clean Air Act establishes technology-based emission limitations for NO<sub>x</sub> emissions. The market-based allowance system used for SO<sub>2</sub> emissions is not used for NO<sub>x</sub> emissions. A new oil-fired power plant would be subject to the new source performance standards for such plants in 40 CFR 60.44a(d)(1). This regulation, issued on September 16, 1998 (63 FR 49453 [EPA 1998]), limits the discharge of any gases that contain nitrogen oxides (expressed as NO<sub>2</sub>) in excess of 200 ng/J of gross energy output (1.6 lb/MWh), based on a 30-day rolling average.

FPL estimates that using the best available control technology, the total annual  $NO_x$  emissions for a new oil-fired power plant would be approximately 2980 MT (3290 tons). This level of  $NO_x$  emissions would be greater than the OL renewal alternative.

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- <u>Particulate emissions</u>. FPL estimates that the total annual stack emissions would include 50 MT (55 tons) of filterable total suspended particulates. The 50 MT would include 32 MT (35 tons) of PM<sub>10</sub> particulate matter. Fabric filters would be used for control (FPL 2000a). Particulate emissions would be greater under the oil alternative than the OL renewal alternative.
- <u>Carbon monoxide emissions</u>. FPL estimates that the total carbon monoxide emissions would be approximately 1430 MT (1580 tons) per year. This level of emissions is greater than the OL renewal alternative.
- Hazardous air pollutants, including mercury. In December 2000, EPA issued regulatory findings on emissions of hazardous air pollutants from electric utility steam-generating units (EPA 2000). EPA determined that coal- and oil-fired electric utility steam-generating units are significant emitters of hazardous air pollutants. Oil-fired power plants were found by EPA to emit arsenic, beryllium, cadmium, chromium, dioxins, hydrogen chloride, lead, manganese, mercury, and nickel (EPA 2000). EPA concluded that mercury is the hazardous air pollutant of greatest concern. EPA found that (1) electric utility steam-generating units are the largest domestic source of mercury emissions; and (2) certain segments of the U.S. population (e.g., the developing fetus and subsistence fish-eating populations) are believed to be at potential risk of adverse health effects due to mercury exposures resulting from consumption of contaminated fish (EPA 2000). Accordingly, EPA added coal- and oil-fired electric utility steam-generating units to the list of source categories under Section 112(c) of the Clean Air Act for which emission standards for hazardous air pollutants will be issued (EPA 2000).

Fugitive dust would be generated during construction activities. Exhaust emissions would also come from vehicles and motorized equipment used during the construction process.

• <u>Summary</u>. The GEIS analysis did not quantify emissions from oil-fired power plants, but implied that air impacts would be substantial and mentioned global warming from unregulated carbon dioxide emissions and acid rain from SO<sub>x</sub> and NO<sub>x</sub> emissions as potential impacts. Adverse human health effects, such as cancer and emphysema, have been associated with the products of fossil fuel combustion. The appropriate characterization of air impacts from oil-fired generation would be MODERATE. The impacts would be clearly noticeable, but would not destabilize air quality.

#### 8.2.4.5 Waste

Oil combustion generates waste in the form of ash, and equipment for controlling air pollution generates additional ash and scrubber sludge. Three 400-MW(e) oil-fired plants would generate approximately 225,000 MT (250,000 tons) of this waste annually for 40 years. The waste would be disposed of onsite, accounting for approximately 52 ha (130 ac) of land area

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during the 40-year life of the plant. Waste impacts to groundwater and surface water could extend beyond the operating life of the plant if leachate and runoff from the waste storage area occurs. Disposal of the waste could noticeably affect land use and groundwater quality, but with appropriate management and monitoring, it would not destabilize any resources. After closure of the waste site and revegetation, the land could be available for other uses.

Construction of the plant would result in construction-related debris.

The appropriate characterization of impacts from waste generated from the oil-fired generation alternative is MODERATE; the impacts would be clearly noticeable, but would not destabilize any important resource.

# 8.2.4.6 Human Health

Oil-fired power generation introduces worker risks from oil-drilling activities and limestone mining, and worker and public risks from oil and lime/limestone transportation and inhalation of stack emissions. Emission impacts can be widespread and health risks difficult to quantify. The GEIS analysis noted that there could be human health impacts (cancer and emphysema) from inhalation of toxins and particulates, but did not identify the significance of these impacts.

Regulatory agencies, including EPA and State agencies, focus on air emissions and have revised regulatory requirements based on human health impacts. Such agencies also impose site-specific emission limits as needed to protect human health. As discussed in the air-quality section above, EPA has recently concluded that certain segments of the U.S. population (e.g., the developing fetus and subsistence fish-eating populations) are believed to be at potential risk of adverse health effects due to mercury exposures from coal- and oil-fired power plants. However, in the absence of more quantitative data, human health impacts from radiological doses and inhaling toxins and particulates generated by an oil-fired power plant are characterized as SMALL.

## 8.2.4.7 Socioeconomics

Construction of the oil-fired alternative plant would take approximately 3 to 4 years. It is assumed that construction would take place while Units 3 and 4 continue operation and would be completed by the time Units 3 and 4 permanently cease operations. There would be a peak construction work force of approximately 1700 workers (NRC 1996). These workers would be in addition to the approximately 960 workers employed at Units 3 and 4. During construction, the communities surrounding the Turkey Point site would experience demands on housing and public services that could have MODERATE impacts. These impacts would be tempered by construction workers commuting to the site from other parts of Miami-Dade County or from other counties. After construction, the communities would be impacted by the loss of the

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construction jobs, although this loss would be possibly offset by other growth currently being projected for South Miami-Dade County.

The GEIS (NRC 1996; 1999) indicated that socioeconomic impacts at a rural site would be larger than at an urban site because more of the peak construction work force would need to move to the area to work. The Turkey Point site is within commuting distance of the Miami metropolitan area and is therefore not considered a rural site.

When the oil-fired replacement plant is constructed and Units 3 and 4 are decommissioned, there will be a loss of approximately 760 permanent high-paying jobs (960 for the two nuclear units down to 200 for the oil-fired plant), with a commensurate reduction in demand on socioeconomic resources and contribution to the regional economy. However, as discussed previously, projected economic growth in South Miami-Dade County could temper or offset the projected loss of jobs from the closure of Units 3 and 4. The oil-fired plant would provide a new tax base to offset the loss of tax base associated with decommissioning of the nuclear units. For all of these reasons, the appropriate characterization of socioeconomic impacts for an oil-fired plant would be SMALL to MODERATE; the socioeconomic impacts would be noticeable, but would be unlikely to destabilize the area.

Rail delivery of lime and possibly of oil could have MODERATE socioeconomic impacts. Barge delivery of oil and lime would have SMALL socioeconomic impacts.

For transportation related to commuting of plant operating personnel, the impacts are considered SMALL. The maximum number of plant operating personnel for the oil-fired plant would be approximately 200. The current Turkey Point Units 3 and 4 work force is approximately 960. Therefore, traffic impacts associated with commuting plant personnel would be expected to be SMALL compared to the current impacts from Turkey Point Units 3 and 4 operations.

During the 3- to 4-year construction period of replacement oil-fired units, up to an additional 1700 construction workers would be working at the site in addition to the 960 workers at Units 3 and 4. The addition of these workers could place significant traffic loads on existing highways, particularly those leading to the Turkey Point site from Florida City. Such impacts would be MODERATE.

#### 8.2.4.8 Aesthetics

Given the low elevation at the Turkey Point site and of the surrounding land and the relatively low ground cover, the oil-fired power plant units and the associated exhaust stacks would be highly visible for distances up to 16 km (10 mi). The aesthetic impact on visitors to Biscayne National Park would be particularly significant, although mitigated somewhat by the existing aesthetic impact associated with Turkey Point Units 1 and 2. Given the environmental

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sensitivity of the park and the associated expectations of visitors to national parks, the addition of the oil-fired units and the associated exhaust stacks would likely have a MODERATE to LARGE aesthetic impact.

If oil and lime are delivered by barge to the Turkey Point site, the tugboat and barges would pass through Biscayne National Park. Given the environmental sensitivity of the park and the associated expectations of visitors to national parks, there would likely be a MODERATE aesthetic impact on visitors to the park associated with such traffic. During construction of the plant, it is also possible that equipment would be delivered by barge and thereby pass through the park.

Oil-fired generation would introduce mechanical sources of noise that would be audible offsite, especially within Biscayne National Park. Sources contributing to total noise produced by plant operation are classified as continuous or intermittent. Continuous sources include the mechanical equipment associated with normal plant operations. Intermittent sources include the equipment related to solid-waste disposal, transportation (rail or barge) related to oil and lime delivery, use of loudspeakers, and the commuting of plant employees. Given the environmental sensitivity of the park and the associated expectations of visitors to national parks, the incremental noise impacts of an oil-fired plant compared to existing Turkey Point Units 3 and 4 operations are considered to be MODERATE. Impacts would be most significant for visitors to Biscayne National Park.

Noise impacts associated with rail delivery of lime and possibly oil would be most significant for residents living in the vicinity of the facility and along the rail route. Although noise from passing trains significantly raises noise levels near the rail corridor, the short duration of the noise reduces the impact. Nevertheless, the impacts of noise on residents in the vicinity of the facility and the rail line is considered MODERATE.

## 8.2.4.9 Historic and Archaeological Resources

A cultural resource inventory would likely need to be conducted for any onsite property that has not been previously surveyed. Other lands, if any, that are acquired to support the plant would also likely need an inventory of field cultural resources, identification and recording of extant historic and archaeological resources, and possible mitigation of adverse effects from subsequent ground-disturbing actions related to physical expansion of the plant site.

Prior to construction, studies would likely be needed to identify, evaluate, and address mitigation of the potential impacts of new plant construction on cultural resources. The studies would likely be needed for all areas of potential disturbance at the proposed plant site and along associated corridors where new construction would occur (e.g., roads, transmission corridors, rail lines, or other rights-of-way). Historic and archaeological resource impacts can generally be effectively managed and as such are considered SMALL.

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## 8.2.4.10 Environmental Justice

No environmental pathways or locations have been identified that would result in disproportionately high and adverse environmental impacts on minority and low-income populations if a replacement oil-fired plant were built at the Turkey Point site. Some impacts on housing availability and prices during construction might occur, and this could disproportionately affect the minority and low-income populations. Closure of Turkey Point Units 3 and 4 would result in a decrease in employment of approximately 760 operating employees, possibly offset by projected economic growth in the South Miami-Dade County area. Following construction, it is possible that the ability of the local government to maintain social services could be reduced at the same time as diminished economic conditions reduce employment prospects for the minority or low-income populations. Overall, impacts are likely to be SMALL to MODERATE, and would depend on the extent to which projected economic growth is realized and the ability of minority and low-income populations to commute to other jobs outside the South Miami-Dade County area.

# 8.2.5 Purchased Electrical Power

If available, purchased power from other sources could potentially obviate the need to renew the Turkey Point Units 3 and 4 OLs. It is unlikely, however, that sufficient baseload, firm power supply would be available to replace the Units 3 and 4 capacity.

Purchased power accounted for approximately 14 percent of FPL power sales in 1998 (FPL 2000a). FPL has a contract to purchase up to 931 MW, with a minimum of 380 MW, of coalfired generation from the Southern Company. In addition, FPL has contracts with the Jacksonville Electric Authority for the purchase of 388 MW of coal-fired generation from the St. John's Power Park Units 1 and 2 (FPL 2000b). FPL also has contracts with 10 cogeneration/small power production facilities to purchase firm capacity and energy (FPL 2000b). FPL purchases as-available (nonfirm) energy from other cogeneration and small power-production facilities. FPL does not foresee any substantial new capacity additions from co-generation facilities in the nonutility generation sector (FPL 2000a). All of the preceding power sources are being used to meet current and projected customer demand and are not available to replace power generated by Turkey Point Units 3 and 4.

Florida's peninsula limits interconnection alternatives for obtaining power purchased from outof-State sources. The location of the Turkey Point Units 3 and 4 load center (Miami) at the southern end of the peninsula further constrains import possibilities. The existing power transmission infrastructure currently lacks the capacity to import power in sufficient quantity to replace a major generation source such as Turkey Point Units 3 and 4 located at the southern end of the FPL system. To replace Turkey Point Units 3 and 4 capacity with imported power, FPL would need to construct additional transmission facilities from the Florida State line to the

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Miami area, a distance of approximately 560 km (350 mi). Additional transmission facilities may need to be constructed in other states to transmit the power to Florida (FPL 2000a).

Imported power from Canada or Mexico is unlikely to be available for replacement of Turkey Point Units 3 and 4 capacity. In Canada, 56 percent of the country's electricity capacity is derived from hydropower. However, there are few plans to expand large-scale hydroelectric facilities, although several small- to mid-sized hydroelectric projects are still being pursued (DOE/EIA 2000b). Canada is reevaluating the safety of its nuclear power industry. In late 1997 and early 1998, Canada shut down seven of its older nuclear power plants, or 17 percent (4,300 MW) of its operating capacity. It is uncertain whether the plants will be brought back on line sometime after 2000 as was intended. If the plants are prematurely retired, Canada's future dependence on nuclear power would be reduced. In addition, the loss of capacity could lead to a temporary reversal of electricity trade flows between the United States and Canada (DOE/EIA 2000b). EIA projects that total gross U.S. imports of electricity from Canada and

Mexico will gradually increase from 46.5 billion kWh in year 2000 to 68.7 billion kWh in year 2005 and then gradually decrease to 28.6 billion kWh in year 2020 (DOE/EIA 2000a). Consequently, it is unlikely that electricity imported from Canada or Mexico would be able to replace the Turkey Point Units 3 and 4 capacity.

If power to replace Turkey Point Units 3 and 4 capacity were to be purchased from sources within the United States or a foreign country, the generating technology would be one of those described in this SEIS and in the GEIS (probably coal, natural gas, or nuclear). The description of the environmental impacts of other technologies in Chapter 8 of the GEIS is representative of the purchased electrical power alternative to renewal of the Turkey Point Units 3 and 4 OLs. Thus, the environmental impacts of imported power would still occur but would be located elsewhere within the region, nation, or another country.

# 8.2.6 Other Alternatives

Other generation technologies considered by NRC are discussed in the following sections.

# 8.2.6.1 Wind Power

The State of Florida is in a wind power Class 1 region (average wind speeds at 10-m (30 ft) elevation of 0 to 4.4 m/s [9.8 mph]). Class 1 has the lowest potential for wind energy generation (DOE 2001a). Wind turbines are economical in wind power Classes 4 through 7 (average wind speeds of 5.6 to 9.4 m/s [12.5 to 21.1 mph] [DOE 2001a]). Consequently, the staff concludes that locating a wind-energy facility on or near the Turkey Point site would not be economically feasible given the current state of wind energy generation technology.

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#### 8.2.6.2 Solar Power

Solar power technologies, photovoltaic and thermal, cannot currently compete with conventional fossil-fueled technologies in grid-connected applications due to higher capital costs per kilowatt of capacity. The average capacity factor of photovoltaic cells is about 25 percent, and the capacity factor for solar thermal systems is about 25 percent to 40 percent (NRC 1996). Energy storage requirements limit the use of solar-energy systems as baseload electricity supply.

There are substantial impacts to natural resources (wildlife habitat, land-use, and aesthetic impacts) from construction of solar-generating facilities. According to the GEIS, land requirements are high—14,000 ha (35,000 ac) per 1000 MW(e) for photovoltaic and approximately 5700 ha (14,000 ac) per 1000 MW(e) for solar thermal systems. Neither type of solar electric system would fit at the Turkey Point site, and both would have large environmental impacts at a greenfield site.

The Turkey Point site receives approximately 4 to 5 kWh of solar radiation per square meter per day, compared to 6 to 8 kWh of solar radiation per square meter per day in areas of the western United States, such as California, which are most promising for solar technologies (DOE/EIA 2000c). Because of the natural resource impacts (land and ecological), the area's relatively low rate of solar radiation, and high cost, solar power is not deemed a feasible baseload alternative to renewal of the Turkey Point Units 3 and 4 OLs. Some onsite-generated solar power (e.g., from rooftop photovoltaic applications) may substitute for electric power from the grid. Implementation of solar generation on a scale large enough to replace Turkey Point Units 3 and 4 would likely result in LARGE environmental impacts.

#### 8.2.6.3 Hydropower

Florida has an estimated 43 MW of undeveloped hydroelectric resources (INEEL 1998). This amount is far less than what is needed to replace the 1386 MW(e) capacity of Turkey Point Units 3 and 4. As Section 8.3.4 of the GEIS points out, hydropower's percentage of U.S. generating capacity is expected to decline because hydroelectric facilities have become difficult to site as a result of public concern about flooding, destruction of natural habitat, and alteration of natural river courses. Based on estimates in the GEIS, land requirements for hydroelectric power are approximately 400,000 ha (1 million ac) per 1000 MW(e). Replacement of Turkey Point Units 3 and 4 generating capacity would require flooding more than this amount of land. Due to the relatively low amount of undeveloped hydropower resource in Florida and the large land-use and related environmental and ecological resource impacts associated with siting hydroelectric facilities large enough to replace Turkey Point Units 3 and 4 OL renewal on its own. Any attempts to site hydroelectric facilities large enough to replace Turkey Point Units 3 and 4 oNL renewal on its own. Any attempts to site hydroelectric facilities large enough to replace Turkey Point Units 3 and 4 OL renewal on its own. Any attempts to site hydroelectric facilities large enough to replace Turkey Point Units 3 and 4 oNL renewal on its own. Any attempts to site hydroelectric facilities large enough to replace Turkey Point Units 3 and 4 oNL renewal on its own. Any attempts to site hydroelectric facilities large enough to replace Turkey Point Units 3 and 4 would result in LARGE environmental impacts.

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# 8.2.6.4 Geothermal Energy

Geothermal energy has an average capacity factor of 90 percent and can be used for baseload power where available. However, geothermal technology is not widely used as baseload generation due to the limited geographical availability of the resource and immature status of the technology (NRC 1996). As illustrated by Figure 8.4 in the GEIS, geothermal plants are most likely to be sited in the western continental United States, Alaska, and Hawaii where hydrothermal reservoirs are prevalent. There is no feasible eastern location for geothermal capacity to serve as an alternative to Turkey Point Units 3 and 4. The staff concludes that geothermal energy is not a feasible alternative to renewal of the Turkey Point Units 3 and 4 OLs.

# 8.2.6.5 Wood Waste

A wood-burning facility can provide baseload power and operate with an average annual capacity factor of around 70 to 80 percent and with 20 to 25 percent efficiency (NRC 1996, Section 8.3.6). The fuels required are variable and site-specific. A significant barrier to the use of wood waste to generate electricity is the high delivered-fuel cost and high construction cost per MW of generating capacity. The larger wood-waste power plants are only 40 to 50 MW(e) in size. Estimates in the GEIS suggest that the overall level of construction impact per MW of installed capacity should be approximately the same as that for a coal-fired plant, although facilities using wood waste for fuel would be built at smaller scales. Like coal-fired plants, wood-waste plants require large areas for fuel storage and processing and involve the same type of combustion equipment.

Due to uncertainties associated with obtaining sufficient wood and wood waste to fuel a baseload generating facility, ecological impacts of large-scale timber cutting (e.g., soil erosion and loss of wildlife habitat), and high inefficiency, the staff has determined that wood waste is not a feasible alternative to renewing the Turkey Point Units 3 and 4 OLs.

## 8.2.6.6 Municipal Solid Waste

The initial capital costs for municipal solid-waste plants are greater than for comparable steamturbine technology at wood-waste facilities (Section 8.2.6.5). This is due to the need for specialized waste-separation and -handling equipment for municipal solid waste. The decision to burn municipal waste to generate energy is usually driven by the need for an alternative to landfills rather than by energy considerations. The use of landfills as a waste disposal option is likely to increase in the near term; however, it is unlikely that many landfills will begin converting waste to energy because of unfavorable economics, particularly with electricity prices declining in real terms. EIA projects that between 1999 and 2020, the average price of electricity in real 1999 dollars will decline by an average of 0.5 percent per year as result of competition among

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electricity suppliers (DOE/EIA 2000a). Therefore, municipal solid waste would not be a feasible alternative to renewal of the Turkey Point Units 3 and 4 OLs, particularly at the scale required.

## 8.2.6.7 Other Biomass-Derived Fuels

In addition to wood and municipal solid-waste fuels, there are several other concepts for fueling electric generators, including burning crops, converting crops to a liquid fuel such as ethanol, and gasifying crops (including wood waste). The GEIS points out that none of these technologies has progressed to the point of being competitive on a large scale or of being reliable enough to replace a baseload plant such as Turkey Point Units 3 and 4. For these reasons, such fuels do not offer a feasible alternative to renewal of the Turkey Point Units 3 and 4 OLs.

#### 8.2.6.8 Fuel Cells

Fuel cells work without combustion and its environmental side effects. Power is produced electrochemically by passing a hydrogen-rich fuel over an anode and air over a cathode and separating the two by an electrolyte. The only by-products are heat, water, and carbon dioxide. Hydrogen fuel can come from a variety of hydrocarbon resources by subjecting them to steam under pressure. Phosphoric acid fuel cells are generally considered first-generation technology. Higher-temperature second-generation fuel cells achieve higher fuel-to-electricity and thermal efficiencies. The higher temperatures contribute to improved efficiencies and give the second-generation fuel cells the capability to generate steam for cogeneration and combinedcycle operations. DOE projects that by 2003, two second-generation fuel cell technologies using molten carbonate and solid oxide technology, respectively, will be commercially available in sizes up to 2 MW at a cost of \$1000 to \$1500 per kW of installed capacity (DOE 2001b). For comparison, the installed capacity cost for a natural gas-fired combined-cycle plant is on the order of \$500 to \$600 per kW (NWPPC 2000). As market acceptance and manufacturing capacity increase, natural-gas-fueled fuel cell plants in the 50- to 100-MW range are projected to become available (DOE 2001b). At the present time, fuel cells are not economically or technologically competitive with other alternatives for baseload electricity generation. Fuel cells are, consequently, not a feasible alternative to renewal of the Turkey Point Units 3 and 4 OLs.

#### 8.2.6.9 Delayed Retirement

FPL has no current plans to retire any existing generating units. For this reason, delayed retirement of other FPL generating units would not be a feasible alternative to renewal of the Turkey Point Units 3 and 4 OLs.

# 8.2.6.10 Utility-Sponsored Conservation

FPL has developed residential, commercial, and industrial programs to reduce both peak demands and daily energy consumption. These programs are commonly referred to as

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demand-side management (DSM). FPL's DSM programs through 1999 have resulted in a cumulative summer peak reduction of approximately 2800 MW at the generator (FPL 2000b). FPL's additional incremental summer peak reduction goals attributable to DSM programs are 200 MW for 2001 increasing to 765 MW by 2009 (FPL 2000b). These goals have been approved by the Florida Public Service Commission (FPL 2000b).

FPL's current DSM program includes the following components (FPL 2000b):

- <u>Residential Conservation Service</u> This is an energy audit program designed to assist residential customers in understanding how to make their homes more energy-efficient through the installation of conservation measures and practices.
- <u>Residential Building Envelope</u> This program encourages the installation of energy-efficient ceiling insulation in residential dwellings that use whole-house electric air conditioning.
- <u>Duct System Testing and Repair</u> This program encourages demand and energy conservation through the identification of air leaks in whole-house air conditioning duct systems and the repair of those leaks by qualified contractors.
- <u>Residential Air Conditioning</u> This program is designed to encourage customers to purchase higher-efficiency central cooling and heating equipment.
- <u>Residential Load Management (On Call)</u> This program offers load control of major appliances and household equipment to residential customers.
- <u>BuildSmart</u> This program is designed to encourage the design and construction of energyefficient homes that cost-effectively reduce FPL's coincident peak load and energy consumption.
- <u>Business Energy Evaluation</u> This program is designed to encourage energy efficiency in both new and existing commercial and industrial facilities by identifying DSM opportunities and providing recommendations to the customer.
- <u>Commercial/Industrial Heating</u>, <u>Ventilating</u>, and <u>Air Conditioning</u> This program is designed to encourage the use of high-efficiency heating, ventilating, and air conditioning systems in commercial and industrial facilities. These systems include air- and water-cooled chillers, thermal energy storage, window and wall units, and duct repair measures.
- <u>Commercial/Industrial Lighting</u> This program is designed to encourage the installation of energy-efficient lighting measures in commercial and industrial facilities.

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- <u>Off-Peak Battery Charging</u> This program is designed to shift the demand of commercial and industrial customers' battery-charging applications from on-peak to off-peak time periods.
- <u>Business Custom Incentive</u> This program is designed to encourage commercial and industrial customers to implement unique energy conservation measures or projects not covered by other FPL programs.
- <u>Commercial/Industrial Load Control</u> This program is designed to reduce peak demand by controlling customer loads of 200 kW or greater during periods of extreme demand or capacity shortages.
- <u>Commercial/Industrial Building Envelope</u> This program is designed to encourage the installation of energy-efficient building envelope measures such as window treatments and roof/ceiling insulation.
- <u>Business on Call</u> This program is designed to offer load control of central air conditioning units to small nondemand billed commercial and industrial customers.

FPL's DSM program also includes a variety of research and development activities (FPL 2000b).

Historic and projected reduction in generation needs as a result of DSM programs has been credited in the FPL *Ten Year Power Plant Site Plan 2000-2009* (FPL 2000b) to meet part of FPL's projected customer demand. Because these DSM savings are part of the long-range plan for meeting projected demand, they are not available offsets for Turkey Point Units 3 and 4. Therefore, the conservation option is not considered a reasonable replacement for the OL renewal alternative.

8.2.7 Combination of Alternatives

Even though individual alternatives to Turkey Point Units 3 and 4 might not be sufficient on their own to replace Turkey Point Units 3 and 4 capacity due to the small size of the resource or lack of cost-effective opportunities, it is conceivable that a combination of alternatives might be cost-effective.

As discussed in Section 8.2, Turkey Point Units 3 and 4 have a combined net summer rating of 1386 MW(e). For the coal-, natural gas-, and oil-fired alternatives, the FPL ER assumes three standard 400-MW(e) units as potential replacements for Units 3 and 4. This approach is followed in this SEIS, although it results in some environmental impacts that are somewhat lower than if full replacement capacity were constructed.

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I One possible combination of alternatives is to combine limited small-scale solar power with a smaller central power station to replace the Turkey Point Units 3 and 4 capacity. Such an alternative could potentially have fewer environmental impacts than the central plant by itself. The environmental impacts associated with the additional generating option(s), such as solar power, would need to be added to the impacts associated with the central plant technology. For example, solar thermal systems potentially have significant wildlife habitat, land-use, and aesthetic impacts.

Table 8-9 contains a summary of the environmental impacts of another assumed combination I of alternatives consisting of 800 MW(e) of combined cycle natural gas-fired generation using 1 closed-cycle cooling, an additional 186 MW(e) purchased from other sources, and 400 MW(e) 1 gained from additional DSM measures. The impacts are based on the gas-fired generation 1 impact assumptions discussed in Section 8.2.2, adjusted for the reduced generating capacity. 1 As discussed in Section 8.2.5, the environmental impacts associated with purchased power t L would depend on the generation technology and would occur at the generation site. These I impacts are not shown in Table 8.9. While the DSM measures would have few environmental impacts, operation of the new gas-fired plant would result in increased emissions and other 1 L environmental impacts. The staff concludes that it is very unlikely that the environmental impacts of any reasonable combination of generating and conservation options could be I 1 reduced to the level of impacts associated with renewal of the Turkey Point Units 3 and 4 OLs.

# 8.3 Summary of Alternatives Considered

The environmental impacts of the proposed action, license renewal, are SMALL for all impact categories (except collective offsite radiological impacts from the fuel cycle and from HLW and spent fuel disposal, for which a single significance level was not assigned). The alternative actions, i.e., no-action alternative (discussed in Section 8.1), new generation alternatives (from coal, natural gas, nuclear, and oil discussed in Sections 8.2.1 through 8.2.4, respectively), purchased electrical power (discussed in Section 8.2.5), alternative technologies (discussed in Section 8.2.6), and the combination of alternatives (discussed in Section 8.2.7) were considered.

The no-action alternative would require the replacement of electrical generating capacity by (1) DSM and energy conservation, (2) power purchased from other electricity providers, (3) generating alternatives other than Turkey Point Units 3 and 4, or (4) some combination of these options and would result in the decommissioning of Turkey Point Units 3 and 4. For each of the new generation alternatives (coal, natural gas, nuclear, and oil), the environmental impacts would not be less than the impacts of license renewal. For example, the land-disturbance impacts resulting from construction of any new facility would be greater than the impacts of continued operation of Turkey Point Units 3 and 4. The impacts of purchased electrical power (imported power) would still occur, but would occur elsewhere. Alternative

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# Table 8-9.Summary of Environmental Impacts of 800 MW(e) of Natural Gas-Fired Generation,186 MW(e) of Purchased Power, and 400 MW(e) from Demand-SideManagement Measures

	Turkey Point Site			Alternate Florida Site			
Impact Category	_Impact	Comments	Impact	Comments			
Land Use	MODERATE to LARGE	9 ha (23 ac) for powerblock, offices, roads, and parking areas. Additional impact of up to approximately 4050 ha (10,000 ac) for construction and/or upgrade of an underground gas pipeline.		23 ha (34 ac) for power- block, offices, roads, and parking areas. Approxi- mately 1000 ha (2500 ac) for transmission line. Addi- tional impact of up to 3600 ha (9000 ac) for construction and/or upgrade of an underground gas pipeline.			
Ecology	MODERATE to LARGE	Uses undeveloped areas at current Turkey Point site, plus gas pipeline through sensitive Everglades habitat.	MODERATE	Impact depends on loca- tion and ecology of the site, surface water body used for intake and dis- charge, and transmission and pipeline routes; poten- tial habitat loss and frag- mentation; reduced pro- ductivity and biological diversity. Likely plant sites already have power generation facilities.			
Water Use and Quality	SMALL	Uses existing cooling canal system	SMALL to MODERATE	Impact depends on volume of water withdrawal and discharge and characteris- tics of surface water body.			
Air Quality	MODERATE	Sulfur oxides • 9 MT/yr (10 tons/yr) Nitrogen oxides • 134 MT/yr (148 tons/yr) Carbon monoxide • 128 MT/yr (141 tons/yr) PM <sub>10</sub> particulates • 294 MT/yr (324 tons/yr) Some hazardous air pollutants	MODERATE	Same as siting at Turkey Point			
Waste	SMALL to MODERATE	Small amount of ash produced from gas-fired plant.	SMALL	Small amount of ash produced from gas-fired plant.			
Human Health	SMALL	Impacts considered to be minor.	SMALL	Impacts considered to be minor.			

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		Turkey Point Site	Alternate Florida Site			
Impact	······································					
Category	Impact	Comments	Impact	Comments		
Socioeconomics	SMALL to MODERATE	During construction, impacts would be MODERATE. Up to 1000 additional workers during the peak of the 3-year construction period, followed by reduction from current Turkey Point Units 3 and 4 work force of 960 to 100; tax base preserved. Impacts during operation would be SMALL.	SMALL to MODERATE	Construction impacts depend on location, but could be significant if location is in a more rural area than Turkey Point. Miami-Dade County would experience loss of tax base and employment, poten- tially offset by projected economic growth.		
		Transportation impacts associated with construction workers would be MODERATE.		Transportation impacts associated with construction workers would be MODERATE.		
Aesthetics	MODERATE	MODERATE aesthetic impacts due to impacts of plant units and stacks on environmentally sensitive Biscayne National Park.	MODERATE to LARGE	Greatest impact is from the new transmission line that would be needed.		
Historic and Archeological Resources	SMALL	Any potential impacts can likely be effectively managed.	SMALL	Any potential impacts can likely be effectively managed.		
Environmental Justice	SMALL to MODERATE	Impacts on minority and low- income communities should be similar to those experienced by the population as a whole. Some impacts on housing may occur during construction; loss of 860 operating jobs at Turkey Point could reduce employment prospects for minority and low- income populations. Impacts could be offset by projected economic growth and the ability of affected workers to commute to other jobs.	SMALL to MODERATE	Impacts vary depending on population distribution and makeup at site.		

Table 8-9. (contd)

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technologies are not considered feasible at this time and it is very unlikely that the environmental impacts of any reasonable combination of generation and conservation options could be reduced to the level of impacts associated with renewal of Turkey Point Units 3 and 4.

The staff concludes that the alternative actions, including the no-action alternative, may have environmental effects in at least some impact categories that reach MODERATE or LARGE significance.

# 8.4 References

10 CFR 50. Code of Federal Regulations, Title 10, *Energy*, Part 50, "Domestic Licensing of Production and Utilization Facilities."

10 CFR 51. Code of Federal Regulations, Title 10, *Energy*, Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Functions."

10 CFR 52. Code of Federal Regulations, Title 10, *Energy*, Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants."

40 CFR 50. Code of Federal Regulations, Title 40, *Protection of Environment*, Part 50, "National Primary and Secondary Ambient Air Quality Standards."

40 CFR 51. Code of Federal Regulations, Title 40, *Protection of Environment*, Part 51, "Requirements for Preparation, Adoption, and Submittal of Implementation Plans."

40 CFR 60. Code of Federal Regulations, Title 40, *Protection of Environment*, Part 60, "Standards of Performance for New Stationary Sources."

40 CFR 81. Code of Federal Regulations, Title 40, *Protection of Environment*, Part 81, "Designation of Areas for Air Quality Planning Purposes."

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# **9.0 Summary and Conclusions**

By letter dated September 8, 2000, the Florida Power & Light Company (FPL) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) to renew the operating licenses (OLs) for Turkey Point Units 3 and 4 for an additional 20-year period (FPL 2000a). If the OLs are renewed, State regulatory agencies and FPL will ultimately decide whether the plant will continue to operate based on factors such as the need for power or other matters within the State's jurisdiction or the purview of the owners. If the OLs are not renewed, then the plant must be shut down at or before the expiration of the current OLs, which expire on July 19, 2012, for Unit 3, and April 10, 2013, for Unit 4.

Under the National Environmental Policy Act (NEPA), an environmental impact statement (EIS) is required for major Federal actions that significantly affect the quality of the human environment. The NRC has implemented Section 102 of NEPA in 10 CFR Part 51. In 10 CFR 51.20(b)(2), the Commission requires preparation of an EIS or a supplement to an EIS for renewal of a reactor OL; 10 CFR 51.95(c) states that the EIS prepared at the OL renewal stage will be a supplement to the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS), NUREG-1437, Volumes 1 and 2 (NRC 1996; 1999).<sup>(a)</sup>

Upon acceptance of the FPL application, the NRC began the environmental review process described in 10 CFR Part 51 by publishing a notice of intent to prepare an EIS and conduct scoping (65 FR 63636 [NRC 2000a]). The staff visited the Turkey Point site in December 2000, and held public scoping meetings on December 6, 2000, in Homestead, Florida (NRC 2001). The staff reviewed the FPL Environmental Report (ER; FPL 2000b) and compared it to the GEIS, consulted with other agencies, and conducted an independent review of the issues following the guidance set forth in NUREG-1555, Supplement 1, the *Standard Review Plans for Environmental Reviews for Nuclear Power Plants, Supplement 1: Operating License Renewal* (NRC 2000b). The staff also considered the public commental Impact Statement (SEIS) for Turkey Point Units 3 and 4 (issued on June 12, 2001). The public commental review during the scoping process that were considered to be within the scope of the environmental review are provided in Appendix A, Part 1, of this SEIS.

The staff held two public meetings in Homestead, Florida on July 17, 2001, to describe the preliminary results of the NRC environmental review and to answer questions to provide members of the public with information to assist them in formulating their comments. All of the comments received on the draft SEIS were considered by the staff in developing the final document and are presented in Appendix A.

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<sup>(</sup>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.

# Summary and Conclusions

This SEIS includes the NRC staff's analysis that considers and weighs the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and mitigation measures available for reducing or avoiding adverse effects. It also includes the staff's recommendation regarding the proposed action.

The NRC has adopted the following statement of purpose and need for license renewal from the GEIS:

"The purpose and need for the proposed action (renewal of an operating license) is to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license to meet future system generating needs, as such needs may be determined by State, utility, and, where authorized, Federal (other than NRC) decisionmakers."

The goal of the staff's environmental review, as defined in 10 CFR 51.95(c)(4) and the GEIS, is to determine

"... whether or not the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable."

Both the statement of purpose and need and the evaluation criterion implicitly acknowledge that there are factors, in addition to license renewal, that will ultimately determine whether an existing nuclear power plant continues to operate beyond the period of the current OLs.

NRC regulations [10 CFR 51.95(c)(2)] contain the following statement regarding the content of SEISs prepared at the license renewal stage:

"The supplemental environmental impact statement for license renewal is not required to include discussion of need for power or the economic costs and economic benefits of the proposed action or of alternatives to the proposed action except insofar as such benefits and costs are either essential for a determination regarding the inclusion of an alternative in the range of alternatives considered or relevant to mitigation. In addition, the supplemental environmental impact statement prepared at the license renewal stage need not discuss other issues not related to the environmental effects of the proposed action and the alternatives, or any aspect of the storage of spent fuel for the facility within the scope of the generic determination in § 51.23(a) and in accordance with § 51.23(b)."<sup>(a)</sup>

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<sup>(</sup>a) The title of 10 CFR 51.23 is "Temporary storage of spent fuel after cessation of reactor operationsgeneric determination of no significant environmental impact."

The GEIS contains the results of a systematic evaluation of the consequences of renewing an OL and operating a nuclear power plant for an additional 20 years. It evaluates 92 environmental issues using the NRC's three-level standard of significance—SMALL, MODERATE, or LARGE—developed using the Council on Environmental Quality guidelines. The following definitions of the three significance levels are set forth in the footnotes to Table B-1 of 10 CFR Part 51, Subpart A, Appendix B:

SMALL: Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

MODERATE: Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

LARGE: Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

For 69 of the 92 issues considered in the GEIS, the analysis in the GEIS shows that all of the following criteria are met:

- (1) The environmental impacts associated with the issue have been determined to apply either to all plants or, for some issues, to plants having a specific type of cooling system or other specified plant or site characteristics.
- (2) A single significance level (i.e., SMALL, MODERATE, or LARGE) has been assigned to the impacts (except for collective offsite radiological impacts from the fuel cycle and from high-level waste [HLW] and spent fuel disposal).
- (3) Mitigation of adverse impacts associated with the issue has been considered in the analysis, and it has been determined that additional plant-specific mitigation measures are not likely to be sufficiently beneficial to warrant implementation.

These 69 issues were identified in the GEIS as Category 1 issues. In the absence of new and significant information, the staff relied on conclusions as amplified by supporting information in the GEIS for issues designated Category 1 in Table B-1 of 10 CFR Part 51, Subpart A, Appendix B.

Of the 23 issues that do not meet the criteria set forth above, 21 are classified as Category 2 issues requiring analysis in a plant-specific supplement to the GEIS. The remaining two issues,

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environmental justice and chronic effects of electromagnetic fields, were not categorized. Environmental justice was not evaluated on a generic basis and must also be addressed in a plant-specific supplement to the GEIS. Information on the chronic effects of electromagnetic fields was not conclusive at the time the GEIS was prepared.

I This SEIS documents the staff's evaluation of all 92 environmental issues considered in the GEIS. The staff considered the environmental impacts associated with alternatives to license renewal and compared the environmental impacts of license renewal and the alternatives. The alternatives to license renewal that were considered include the no-action alternative (not renewing the OLs for Turkey Point Units 3 and 4) and alternative methods of power generation. These alternatives are evaluated assuming that the replacement power generation plant is located at either the Turkey Point site or some other unspecified location in south-central Florida.

# 9.1 Environmental Impacts of the Proposed Action— License Renewal

FPL and the staff have established independent processes for identifying and evaluating the significance of any new information on the environmental impacts of license renewal. Neither FPL nor the staff has identified information that is both new and significant related to Category 1 issues that would call into question the conclusions in the GEIS. Similarly, neither the scoping process, FPL, nor the staff has identified any new issue applicable to Turkey Point Units 3 and 4 that has a significant environmental impact. Therefore, the staff relies upon the conclusions of the GEIS for all Category 1 issues that are applicable to Turkey Point Units 3 and 4.

FPL's license renewal application presents an analysis of the Category 2 issues plus environmental justice and chronic effects from electromagnetic fields. The staff has reviewed the FPL analysis for each issue and has conducted an independent review of each issue. Five Category 2 issues are not applicable because they are related to plant design features or site characteristics not found at Turkey Point. Four Category 2 issues are not discussed in this SEIS because they are specifically related to refurbishment. FPL (FPL 2000b) has stated that its evaluation of structures and components, as required by 10 CFR 54.21, did not identify any major plant refurbishment activities or modifications as necessary to support the continued operation of Turkey Point Units 3 and 4 for the license renewal period. In addition, any replacement of components or additional inspection activities are within the bounds of normal plant component replacement and, therefore, are not expected to affect the environment outside of the bounds of the plant operations evaluated in the *Final Environmental Statement Related to Operation of Turkey Point Plant* (AEC 1972).

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Twelve Category 2 issues related to operational impacts and postulated accidents during the renewal term, as well as environmental justice and chronic effects of electromagnetic fields, are discussed in detail in this SEIS. Four of the Category 2 issues and environmental justice apply to both refurbishment and to operation during the renewal term and are only discussed in this SEIS in relation to operation during the renewal term. For all 12 Category 2 issues and environmental justice, the staff concludes that the potential environmental effects are of SMALL significance in the context of the standards set forth in the GEIS. In addition, the staff determined that appropriate Federal health agencies have not reached a consensus on the existence of chronic adverse effects from electromagnetic fields. Therefore, no further evaluation of this issue is required. For severe accident mitigation alternatives (SAMAs), the staff concludes that a reasonable, comprehensive effort was made to identify and evaluate SAMAs. Based on its review of the SAMAs for Turkey Point Units 3 and 4, and the plant improvements already made, the staff concludes that none of the candidate SAMAs are costbeneficial.

Mitigation measures were considered for each Category 2 issue. Current measures to mitigate the environmental impacts of plant operation were found to be adequate, and no additional mitigation measures were deemed sufficiently beneficial to be warranted.

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The following sections discuss unavoidable adverse impacts, irreversible or irretrievable commitments of resources, and the relationship between local short-term use of the environment and long-term productivity.

## 9.1.1 Unavoidable Adverse Impacts

An environmental review conducted at the license renewal stage differs from the review conducted in support of a construction permit because the plant is in existence at the license renewal stage and has operated for a number of years. As a result, adverse impacts associated with the initial construction have been avoided, have been mitigated, or have already occurred. The environmental impacts to be evaluated for license renewal are those associated with refurbishment and continued operation during the renewal term.

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The adverse impacts of continued operation identified are considered to be of SMALL significance, and none warrants implementation of additional mitigation measures. The adverse impacts of likely alternatives if Turkey Point Units 3 and 4 cease operation at or before the expiration of the current OLs will not be smaller than those associated with continued operation of these units, and they may be greater for some impact categories in some locations.

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Summary and Conclusions

# 9.1.2 Irreversible or Irretrievable Resource Commitments

The commitment of resources related to construction and operation of the Turkey Point Units 3 and 4 during its current license period was made when the plant was built. The resource
I commitments considered in this SEIS are associated with continued operation of the plant for an additional 20 years. These resources include materials and equipment required for plant maintenance and operation, the nuclear fuel used by the reactors, and ultimately, permanent offsite storage space for the spent fuel assemblies.

The most significant resource commitments related to operation during the renewal term are the fuel and the permanent storage space. Turkey Point Units 3 and 4 replace approximately one third of the fuel assemblies in each of the two units during every refueling outage, which occurs on an 18-month cycle.

The likely power generation alternatives if Turkey Point Units 3 and 4 cease operation on or before the expiration of the current OLs will require a commitment of resources for construction of the replacement plants as well as for fuel to run the plants.

# 9.1.3 Short-Term Use Versus Long-Term Productivity

An initial balance between short-term use and long-term productivity of the environment at the Turkey Point site was set when the plants were approved and construction began. That balance is now well established. Renewal of the OLs for Turkey Point Units 3 and 4 and continued operation of the plants will not alter the existing balance, but may postpone the availability of the site for other uses. Denial of the application to renew the OLs will lead to shutdown of the plants and will alter the balance in a manner that depends on subsequent uses of the site. For example, the environmental consequences of turning the Turkey Point site into a park or an industrial facility are quite different.

# 9.2 Relative Significance of the Environmental Impacts of License Renewal and Alternatives

The proposed action is renewal of the OLs for Turkey Point Units 3 and 4. Chapter 2 describes the site, power plant, and interactions of the plant with the environment. As noted in Chapter 3, no refurbishment and no refurbishment impacts are expected at Turkey Point Units 3 and 4. Chapters 4 through 7 discuss environmental issues associated with renewal of the OLs. Environmental issues associated with the no-action alternative and alternatives involving power generation and use reduction are discussed in Chapter 8.

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The significance of the environmental impacts from the proposed action (approval of the application for renewal of the OLs), the no-action alternative (denial of the application), alternatives involving nuclear or coal-, gas-, or oil-fired generation of power at the Turkey Point site and an unspecified "greenfield site," and a combination of alternatives are compared in Table 9-1. Continued use of a closed-cycle cooling system for Turkey Point Units 3 and 4 is assumed for Table 9-1.

Substitution of once-through cooling for the recirculating cooling system in the evaluation of the nuclear and gas- and coal-fired generation alternatives would result in somewhat greater environmental impacts in some impact categories.

Table 9-1 shows that the significance of the environmental effects of the proposed action are SMALL for all impact categories (except for collective offsite radiological impacts from the fuel cycle and from HLW and spent fuel disposal, for which a single significance level was not assigned [see Chapter 6]). The alternative actions, including the no-action alternative, may have environmental effects in at least some impact categories that reach MODERATE or LARGE significance.

# 9.3 Staff Conclusions and Recommendations

Based on (1) the analysis and findings in the GEIS (NRC 1996; 1999), (2) the ER submitted by FPL (FPL 2000b), (3) consultation with Federal, State, and local agencies, (4) the staff's own independent review, and (5) the staff's consideration of public comments, the 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.

# 9.4 References

10 CFR 51. Code of Federal Regulations, *Title 10, Energy*, Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

10 CFR 54. Code of Federal Regulations, *Title 10, Energy*, Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants."

Florida Power & Light Company (FPL). 2000a. Application for Renewed Operating Licenses, Turkey Point Units 3 and 4. Miami, Florida.

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	Proposed Action	No-Action Alternative Denial of Renewal	Coal-Fired Generation		Natural Gas-Fired Generation		New Nuclear Generation		Oll-Fired Generation
Impact Category	License Renewal		Turkey Point Site	Alternate Site in Fiorida	Turkey Point Site	Aiternate Site in Florida	Turkey Point Site	Alternate Site in Florida	Turkey Point Site
Land Use	SMALL	SMALL	MODERATE	MODERATE to LARGE	MODERATE	MODERATE to LARGE	MODERATE	MODERATE to LARGE	SMALL to MODERATE
Ecology	SMALL	SMALL	MODERATE to LARGE	MODERATE to LARGE	MODERATE	MODERATE to LARGE	MODERATE	MODERATE to LARGE	MODERATE to LARGE
Water Use and Quality	SMALL	SMALL	SMALL	SMALL to MODERATE	SMALL	SMALL to MODERATE	SMALL	SMALL to MODERATE	SMALL
Air Quality	SMALL	SMALL	MODERATE	MODERATE	MODERATE	MODERATE	SMALL	SMALL	MODERATE
Waste	SMALL	SMALL	MODERATE	MODERATE	SMALL	SMALL	SMALL	SMALL	MODERATE
Human Health	SMALL <sup>(a)</sup>	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL
Socioeconomics	SMALL	SMALL to MODERATE	SMALL to LARGE	SMALL to LARGE	SMALL to MODERATE	SMALL to MODERATE	SMALL to LARGE	SMALL to LARGE	MODERATE
Aesthetics	SMALL	SMALL	LARGE	MODERATE to LARGE	MODERATE	MODERATE to LARGE	SMALL	MODERATE to LARGE	MODERATE to LARGE
Historic and Archaeological Resources	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL
Environmental Justice	SMALL	SMALL to MODERATE	SMALL to MODERATE	SMALL to MODERATE	SMALL to MODERATE	SMALL to MODERATE	SMALL	SMALL to MODERATE	SMALL to MODERATE

 Table 9-1.
 Summary of Environmental Significance of License Renewal, the No-Action Alternative, and Alternative Methods

 of Generation
 Output

Summary and Conclusions

(a) Except for collective offsite radiological impacts from the fuel cycle and from HLW and spent-fuel disposal, for which a significance level was not assigned. See Chapter 6 for details.

Summary and Conclusions

Florida Power & Light Company (FPL). 2000b. Applicant's Environmental Report - Operating License Renewal Stage Turkey Point Units 3 and 4. Miami, Florida.

National Environmental Policy Act of 1969 (NEPA). 42 USC 4321, et seq.

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.

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.

U.S. Nuclear Regulatory Commission (NRC). 1999. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Main Report*, "Section 6.3–Transportation, Table 9.1 Summary of findings on NEPA issues for license renewal of nuclear power plants, Final Report." NUREG-1437, Volume 1, Addendum 1, Washington, D.C.

U.S. Nuclear Regulatory Commission. 2000a. "Notice of Intent To Prepare an Environmental Impact Statement and Conduct Scoping Process." *Federal Register*. Vol. 65, No. 206, pp. 63636-63637. Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 2000b. "Standard Review Plans for Environmental Reviews for Nuclear Power Plants, Supplement 1: Operating License Renewal." NUREG-1555, Supplement 1, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 2001. Environmental Impact Statement Scoping Process: Summary Report – Turkey Point Units 3 & 4, Homestead, Florida. Washington, D.C.

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# Discussion of Comments Received on the Environmental Review

# **Discussion of Comments Received on the Environmental Review**

This Appendix contains comments received from the public scoping period (Part I) and comments received on the draft SEIS (Part II).

## Part I - Comments Received During Scoping

On October 24, 2000, the U.S. Nuclear Regulatory Commission (NRC) published a Notice of Intent in the Federal Register (65 FR 63636), to notify the public of the staff's intent to prepare a plant-specific supplement to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS), NUREG-1437, Volumes 1 and 2, to support the renewal application for the Turkey Point operating licenses and to conduct scoping. The plant-specific supplement to the GEIS was to be prepared in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) guidelines, and 10 CFR Part 51. As outlined by NEPA, the NRC initiated the scoping process with the issuance of the Federal Register Notice. The NRC invited the applicant; Federal, State, and local government agencies; local organizations; and individuals to participate in the scoping process by providing oral comments at the scheduled public meetings and/or submitting written suggestions and comments no later than December 22, 2000. The scoping process included two public scoping meetings, which were held at the Harris Field Complex - Homestead YMCA in Homestead, Florida on December 6, 2000. Approximately 50 members of the public attended the meetings. Both sessions began with NRC staff members providing a brief overview of the license renewal process and the NEPA process. After the NRC's prepared statements, the meetings were open for public comments. Forty-five attendees provided either oral or written statements that were recorded and transcribed by a certified court reporter. The corrected meeting transcripts are available as an attachment to the January 10, 2001, Scoping Meeting Summary and supplement dated January 30, 2001. In addition to the comments provided during the public meetings, five comment letters and three e-mail messages were received by the NRC in response to the Notice of Intent.

At the conclusion of the scoping period, the NRC staff and its contractor reviewed the transcripts and all written material received, and identified individual comments. All comments and suggestions received orally during the scoping meetings or in writing were considered. Each set of comments from a given commenter was given a unique identifier (Commenter ID number), allowing each set of comments from a commenter to be traced back to the transcript, letter, or e-mail in which the comments were submitted. Several commenters submitted comments through multiple sources (e.g., afternoon and evening scoping meetings).

Table A.1 identifies the individuals who provided comments and the Commenter ID number associated with each person's set(s) of comments. The individuals are listed in the order in which they spoke at the public meeting, and in alphabetical order for the comments received by letter or e-mail.

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Commente	r		Comment
ID	Commenter	Affiliation (If Stated)	Source
01	Dr. Roy Phillips	Miami-Dade Community College	Scoping Meeting
02	Curtis Ivey	City of Homestead	Scoping Meeting
03	Mark Oncavage		Scoping Meeting
04	Bob Hovey	Turkey Point Nuclear Plant	Scoping Meeting
05	Liz Thompson	FPL-Turkey Point Nuclear Plant	Scoping Meeting
06	Dennis Moss	Miami-Dade County	Scoping Meeting
07	Chuck Wallace		Scoping Meeting
08	Chuck Lanza	Dade County Emergency Management	Scoping Meeting
09	Steve Shiver	City of Homestead	Scoping Meeting
10	Robert Epling	Community Bank of Florida	Scoping Meeting
11	Joette Lorion		Scoping Meeting
12	Joe Wasilewski	Natural Selections	Scoping Meeting
13	Ginny O'Shaben	Audubon of Florida	Scoping Meeting
14	Angie Howard	Nuclear Energy Institute	Scoping Meeting
15	Reverend Ted Green	r Goulds Coalition of Ministers/	Scoping Meeting
		Lay Peoples	
16	Dick Bauer	TIP Bank of the Keys	Scoping Meeting
17	David Balch	United Way of Miami-Dade	Scoping Meeting
18	Jerry Brown	Florida International University	Scoping Meeting
19	Ruben Rothschild	Scout Leader and FPL	Scoping Meeting
20	William Weaver		Scoping Meeting
21	William Comber	Homestead Air Reserve Station	Scoping Meeting
22	Mario Signorello	Homestead Challenge	Scoping Meeting
23	Joe Brennan	International Brotherhood of Electrical	Scoping Meeting
		Workers (IBEW), Local 359	
24	Debra Vase	Florida Power and Light	Scoping Meeting
25	Charles Munz	Rediand Company	Scoping Meeting
26	Thomas Cullen	Monroe County Emergency Management	Scoping Meeting
27	Linda Canzanelli	Biscayne National Park–National Park Service	Email comments
28	Joette Lorion		Email comments
29	Mark Oncavage		Email comments
30	Bo Bollinger	Homestead Hospital	Scoping Meeting
31	George DeFazio	The Earth's Cure Informer	Scoping Meeting
32	David Balch	United Way of Miami-Dade	Scoping Meeting
33	Irene Toner	Monroe County Department of	Scoping Meeting
		Emergency Management	

 Table A.1. Individuals Providing Comments During Scoping Comment Period

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Table A-1. (contd)

Comment	ter		Comment
ID ···	Commenter	Affiliation (If Stated)	Source
34	Paige Latterner	Keys Gate Development	Scoping Meeting
35	Tim Williams		Scoping Meeting
36	Ruben Rothschild	Scout Leader and FPL	Scoping Meeting
37	Len Anthony	Condominium Association Naranja Lakes Condo #5	Scoping Meeting
38	Mike Pedrianes	IBEW Local 359	Scoping Meeting
39	Mike Richardson	First National Bank of Homestead	Scoping Meeting
40	Allen Bennett	Mutineer Restaurant	Letter
41	Eric S. Johnson	Community Bank of Florida	Letter
42	Robert L. Epling	Community Bank of Florida	Letter
43	Board of Directors	Greater Homestead/Florida City Chamber of Commerce	Letter
44	<b>Betty Thomas</b>	Dade County Public School	Scoping Meeting
45	Captain Bowe	Homestead Police Department	Scoping Meeting
46	William Comber	Homestead Air Reserve Station	Scoping Meeting
47	Steve Garrison	Florida Nurserymen and Growers Association	Scoping Meeting
48	Walter L. Campbell	First Baptist Church of Florida City	Scoping Meeting
49	Mary Finlan	Greater Homestead/Florida City Chamber of Commerce	Scoping Meeting
50	Katy Olesen		Scoping Meeting
51	Buddy Howamitz	IBEW Local 349	Scoping Meeting
52	Hayden Blaylock	Blaylock Oil Company	Scoping Meeting
53	Alex Penelas	Miami-Dade County	Scoping Meeting
54	Liz Thompson	FPL-Turkey Point Nuclear Plant	Scoping Meeting
55	Bob Hovey	Turkey Point Nuclear Plant	Scoping Meeting
56	Angie Howard	Nuclear Energy Institute	Scoping Meeting
57	Joette Lorion		Letter

While developing this plant-specific supplement to the GEIS, the staff and its contractor considered all of the relevant issues raised during the scoping process. Table A-1 identifies the individuals who provided comments that were applicable to the environmental review. The individuals are listed in the order in which they spoke or provided written comments at the meetings. To maintain consistency with the scoping summary, we have retained the same unique identifier that was used for that person in the report. The accession number is provided for the written comments to facilitate access to the document through the Public Electronic Reading Room (ADAMS) <u>http://www.nrc.gov/NRC/ADAMS/index.html</u>.

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Accession Nos.:

- 1. ML010880454 Letter & mailing list
- 2. ML010880464 Environmental Impact Statement Scoping Process Summary Report
- 3. ML010880478 Package

Comments were consolidated and categorized according to the topic within the proposed supplement to the GEIS, or according to the general topic if the topic was outside the scope of the GEIS.

Each comment that was applicable to this environmental review is summarized in this section. This information was extracted from the Turkey Point Scoping Summary Report, dated March 29, 2001, and is being provided in this report for the convenience of those interested in the scoping comments applicable to this environmental review. The comments that were determined to be general or outside the scope of the environmental review for Turkey Point are not included in this report. More detail regarding the disposition of general or nonapplicable comments can be found in the Turkey Point Scoping Summary Report. Commenters whose comments are not discussed in this section will find the disposition of their concerns addressed in that report.

The following pages summarize the comments and suggestions received as part of the scoping process, and discuss their disposition. Parenthetical numbers after each comment refer to the Commenter ID number and the comment number. Comments can be tracked to the commenter and the source document through the ID number listed in Table A.1. Comments are grouped by category. The categories are as follows:

- 1. Comments Concerning Category 1 Groundwater-Use and Quality Issues
- 2. Comments Concerning Category 1 Socioeconomic Issues
- 3. Comments Concerning Category 1 Air-Quality Issues
- 4. Comments Concerning Category 1 Land-Use Issues
- 5. Comments Concerning Category 1 Human Health Issues
- 6. Comments Concerning Category 1 Terrestrial Resource Issues
- 7. Comments Concerning Category 1 Postulated Accident Issues

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- 8. Comments Concerning Category 1 Uranium Fuel Cycle and Waste Management Issues
- 9. Comments Concerning Category 2 Aquatic Ecology and Threatened and Endangered Species Issues
- 10 Comments Concerning Category 2 Socioeconomic Issues
- 11. Comments Concerning Environmental Justice
- 12. Comments Concerning Related Federal Projects
- 13. Comments Concerning Alternative Energy Sources
- 14. Comments Concerning Safety Issues Within the Scope of License Renewal
- 15. Questions: Water Quality and Postulated Accidents

#### Comments

1. Comments Concerning Category 1 Groundwater Use and Quality Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 water quality issues include:

• Groundwater use conflicts (potable and service water; plants that use <100 gpm)

••

- Groundwater quality degradation (Ranney wells)
- Groundwater quality degradation (saltwater intrusion)

• Groundwater quality degradation (cooling ponds in salt marshes).

**Comment:** The Supplemental EIS should investigate ways to reverse some of the adverse impacts to mainland and near shore habitats under the proposed action and all alternatives. Specifically, the area south and southwest of the plant 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. Rehydrating the hypersaline marshes with fresh water is one example of potential mitigation to be considered during the analysis. (27-14)

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**Response:** The comment is noted. The groundwater flow in the vicinity of Turkey Point is controlled by precipitation and tidal action. Any exchange of water between the cooling canals and the groundwater would not alter the groundwater flow significantly, but may alter sheet runoff. This is a Category 1 issue that was considered in the GEIS. The comment provides no new information. Therefore, the issue will not be evaluated further.

### 2. Comments Concerning Category 1 Socioeconomic Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 socioeconomic issues include:

- Public services: public safety, social services, and tourism and recreation
- Public services, education (license renewal term)
- Aesthetics impacts (refurbishment)
- Aesthetics impacts (license renewal)
- Aesthetics impacts of transmission lines (license renewal term).

**Comment:** The Supplemental EIS should investigate ways to minimize the facility's current intrusions to "old Florida's" natural landscape and scenic vistas. A mitigation option to consider under the proposed action and all alternatives may include repainting the structures in natural tones that mirror the surrounding landscape, and consequently make them less obtrusive to the natural setting. (27-11)

**Response:** The comment is noted. The comment suggests that mitigation measures be introduced to repaint the structures to make them less obtrusive. Aesthetic impacts were evaluated in the GEIS and determined to be a Category 1 issue. Aesthetic impacts of Units 1 and 2 (the fossil units) are outside the scope of the SEIS for Turkey Point. However, the information regarding the impact of Turkey Point structures on the natural landscape and scenic vistas will be discussed in Chapter 4 of the SEIS. Evaluation of the impacts of potential alternatives to license renewal at Turkey Point will be provided in Chapter 8 of the SEIS.

**Comment:** The Service is interested in working with FPL to minimize the excessive lighting of the Plant from dusk to dawn. This is a fragile resource critical to wildlife that is sought after by many visitors and residents. (27-12)

**Comment:** The Supplemental EIS should include mitigation options for the night sky under the proposed action and all alternatives. (27-13)

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**Response:** The comments are noted. The comments suggest that mitigation measures be introduced to reduce the impact of Turkey Point lighting on the night sky. Aesthetic impacts of Units 1 and 2 (the fossil units) are outside the scope of the SEIS for Turkey Point. However, the information regarding the proximity of the national park to Turkey Point Units 3 and 4, and resulting impacts on the natural landscape of the park will be discussed in Section 4 of the SEIS.

**Comment:** 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 the 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. (27-3)

**Comment:** The supplemental EIS should include the natural soundscape of the park as part of the "affected environment" when identifying impacts and any potential mitigation for such impacts. (27-4)

**Response:** The comments are noted. The comments refer to potential noise impacts from operation of the Turkey Point facility. The noise generated by operations associated with Turkey Point Units 1 and 2 (the fossil units) are not within the scope of the SEIS. The noise associated with Units 3 and 4 during the relicensing term will be considered in Section 4 of the SEIS.

**Comment:** There is a concern that there will be a socioeconomic impact if you go along a path where you re-license a plant that will later shut down earlier than people think. (11-20)

**Response:** The comment is noted. Socioeconomic issues will be addressed in Section 4.2 of the SEIS. Decommissioning socioeconomic impacts, designated as a Category 1 issue, will be addressed in Section 7 of the SEIS.

#### 3. Comments Concerning Category 1 Air Quality Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 air quality issues include:

Air quality effects of transmission lines.

**Comment:** Turkey Point will keep air quality high with no emissions. (5-5 and 54-5)

**Comment:** Nuclear electricity is produced without producing any greenhouse gases or other air pollutants. (14-3 and 56-3)

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**Response:** The comments are noted. Air quality impacts from plant operations were evaluated in the GEIS and found to be minimal. These emission are regulated through permits issued by the U.S. Environmental Protection Agency and the States. Air quality effects of transmission lines is a Category 1 issue as evaluated in the GEIS. The comments provide no new information and, therefore, will not be evaluated further.

**Comment:** The National Park Service is concerned about the continued introduction of anthropogenic air pollutants and particulate matter into an area of special concern. (27-5)

**Comment:** The Supplemental EIS should identify the cumulative effect associated with projected population growth and continued and increasing emissions under the proposed action and all alternatives. Mitigation measures, including air scrubbers and other similar technologies, should be fully evaluated and implemented. (27-6)

**Response:** The comments are noted. Air quality impacts from plant operations were evaluated in the GEIS and found to be minimal. These emission are regulated through permits issued by the U.S. Environmental Protection Agency and the States. Air quality effects of transmission lines is a Category 1 issue as evaluated in the GEIS. Emissions at Turkey Point are largely associated with Units 1 and 2 (the fossil units), which are not under NRC regulation. Emissions associated with Units 3 and 4 (the nuclear units) are governed by Permit Number 0250003-002-AV issued by the State of Florida Department of Environmental Protection. Impacts of emissions from fossil-fueled alternative forms of generation will be discussed in Section 8 of the SEIS. The comments provide no new information and, therefore, will not be evaluated further.

#### 4. Comments Concerning Category 1 Land Use Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 land use issues include:

- Onsite land use during license renewal term and refurbishment
- Power line rights-of-way.

**Comment:** FPL owns, maintains, and uses some 20 thousand acres to sustain both the plant and the status quo of the environment for the sustenance of the flora, fauna and land. (37-5)

**Response:** The comment is noted. Onsite land use during the renewal period is a Category 1 issue as evaluated in the GEIS. Applicable site descriptive information, such as the amount of acreage for the plant, will be included in Section 2 of the SEIS.

#### 5. Comments Concerning Category 1 Human Health Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 human health issues include:

Radiation exposure to the public during refurbishment

- Occupational radiation exposure during refurbishment
- Microbiological organisms (occupational health)
- Noise
- Radiation exposures to public (license renewal term)
- Occupational radiation exposures (license renewal term).

**Comment:** There is a need to look at the cumulative impacts of any radiation that may be building up in the cooling canals outside in Biscayne National Park, say cesium-137 and strontium-90. Asks to test shellfish from Biscayne Bay for occurrence of strontium-90. (11-13)

**Comment:** Emissions from nuclear plants, even if within regulatory limits, may be adversely affecting public health. (18-3)

**Response:** The comments are noted. To the extent that these comments question the radiological protection afforded by NRC regulations, radiation doses to the public during the license renewal term are a Category 1 issue as evaluated in the GEIS. The evaluation of health effects of radiation, both natural and man-made, is an ongoing activity involving public, private, and international institutions. The assessment of health effects upon which the GEIS analysis is based was founded on the consensus of these sources. No changes in that consensus have occurred since the GEIS was completed. Further, the staff is not aware of any new information or studies that call into question the conclusions in the GEIS. Therefore, the comments will not be evaluated further.

**Comment:** NRC needs to remove the generic approach because there are issues with coastal reactors about how radiation accumulates in the environment. (11-12)

**Comment:** Radiological releases from the steam generation system, if they are impacting humans, must also be impacting the plants and wildlife of the area. (18-4)

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**Comment:** The NRC should address the impacts that radioactive emissions from the plant during routine operations have had and may continue to have in the future on wildlife and the human environment. (28-5 and 57-8)

**Comment:** Under NEPA, the licensee must assess any current impact that radiation may be having on the environment surrounding the plant in order to assess the cumulative impact that may result from extending the operating license. (28-15)

**Comment:** NRC must analyze the impact of the potential increase in radiation that Turkey Point is having on the cooling canals and the aquatic and human environment surrounding the plant. (57-16)

**Response:** The comments are noted. Radiation exposures to the public during the license renewal term is a Category 1 issue that was evaluated in the GEIS. NRC considers public protection from radiological doses also to be protective of terrestrial and aquatic organisms. Public doses from Turkey Point emissions were specifically evaluated in Section 4.6 of the GEIS, using data from monitored emissions and ambient monitoring. The comments do not detail specific issues associated with coastal reactors, provide no new information, and, therefore, will not be evaluated further.

**Comment:** The Tooth Fairy Project, by the Radiation and Public Health Project, states that researchers had found that strontium-90 radiation levels in baby teeth of Miami-Dade County children are twice as high as in other areas of the country. This increase is found within a 50 mile radius of Turkey Point Nuclear Power Plant. (13-1)

**Comment:** NRC should sponsor Federal funds to test for strontium-90 in baby teeth. (13-2)

**Comment:** The EIS should include a mandate to assess health effects of radioactive emissions and strontium-90 in baby teeth. (13-3)

**Comment:** Strontium-90 concentrations in baby teeth have not changed since the 50's, and the concentrations in Dade County were higher than the other areas studied. Strontium-90 is considered an indicator of other radionuclides released from steam-generated degradation of reactor systems. (18-2)

**Response:** The comment is noted. Radiation exposures to the public during the license renewal term is a Category 1 issue and was evaluated in the GEIS. Although the referenced

report was not available at the time that the GEIS was written, the comment does not represent new information with regard to the Category 1 issue as evaluated in the GEIS because the study does not identify a significant departure from what was specifically documented in the GEIS with regard to public dose. Therefore, the comment will not be evaluated further.

**Comment:** There is new evidence of a link between strontium-90 and other radioisotopes in the environment and increases in breast, prostate, and childhood cancer rates. A study published by the Radiation and Public Health Project in 1996 identified a higher breast cancer mortality rate for 1985-1989 in women living within 100 miles of a nuclear reactor relative to a base period in the 50's. Turkey Point's rate was 26% higher during the 80's, vs. a U.S. average of 1% increase. In areas where nuclear plants have shut down, rates of childhood cancers, low birth rates and infant mortality rates have all improved. All this suggests that low dose rates over protracted intervals are a significant factor in the current cancer epidemic and other illnesses. (18-1)

**Response:** The comment is noted. Radiological exposures to the public during the license renewal term is a Category 1 issue that was evaluated in the GEIS. Doses to members of the public from Turkey Point emissions were specifically evaluated in Section 4.6 of the GEIS, using data from monitored emissions and ambient monitoring, and were found to be well within regulatory limits. The staff has reviewed the 1996 study and concludes that it provides no new evidence that links strontium-90 with increases in breast cancer, prostate cancer, or childhood cancer rates. The American Cancer Society recognizes that "public concern about environmental cancer risks often focuses on risks for which no carcinogenicity has been proven or on situations where known carcinogen exposures are at such low levels that risks are negligible. Ionizing radiation emissions from nuclear facilities are closely controlled and involve negligible levels of exposure for communities near such plants." The comment provides no new information and, therefore, will not be evaluated further.

**Comment:** NRC needs to look at the epidemiological studies about the health of the surrounding population around Turkey Point in terms of cancer. (11-14)

**Comment:** NRC and FPL should conduct an epidemiological study, a biological study of strontium-90 in teeth, and a medical study to see if radiation released from Turkey Point is contributing to cancer in the community. (18-5)

**Comment:** High incidence rates of cancer in the Dade county area may well be due to the high incidence of old persons and people moving from areas of the country with health problems. Strontium-90 may come from weapons-grade nuclear weapons materials and not nuclear power plants. (26-3)

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**Comment:** Long Island has one of the highest rates of breast cancer. Gaseous radioactive tritium had been released from the stack at the reactor for 40 years. So look into what is going on at Turkey Point. (31-1)

**Response:** The comments are noted. Radiation exposures to the public during the license renewal term is a Category 1 issue as evaluated in the GEIS. At the request of Congress, the National Cancer Institute (NCI) conducted a study in 1990, "Cancer in Populations Living Near Nuclear Facilities," to look at cancer mortality rates around 52 nuclear power plants, including Indian Point, nine Department of Energy facilities, and one former commercial fuel reprocessing facility. The NCI study concluded "from the evidence available, this study has found no suggestion that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby." Additionally, the American Cancer Society has concluded that although reports about cancer case clusters in such communities have raised public concern, studies show that clusters do not occur more often near nuclear plants than they do by chance elsewhere in the population. The comments provide no new information, therefore, the comment will not be evaluated further.

**Comment:** The SEIS should also review groundwater/drinking water pathways and the unique fact that the Biscayne Aquifer is an EPA designated sole source drinking water supply for millions of people in South Florida. (28-8)

**Response:** The comment is noted. The comment expresses concern regarding the levels of protection afforded by NRC radiological emissions standards. Radiation exposures to the public during the license renewal term is a Category 1 issue as evaluated in the GEIS. The comment provides no new information and, therefore, will not be evaluated further.

#### 6. Comments Concerning Category 1 Terrestrial Resource Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 terrestrial resource issues include:

- Cooling tower impacts on crops and ornamental vegetation
- · Cooling tower impacts on native plants
- Bird collisions with cooling towers
- Cooling pond impacts on terrestrial resources
- Power line rights-of-way management (cutting and herbicide application)

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- Bird collisions with power lines
- Impacts of electromagnetic fields on flora and fauna (plants, agricultural crops, honeybees, wildlife, livestock) . . · ·
- Flood plains and wetland on power line rights-of-way.

**Comment:** The National Park Service recommends that the Supplemental EIS consider continued and expanded exotic plant eradication from FPL property for its benefits of removing harmful seed sources. (27-8)

Response: The comment is noted. Impacts on terrestrial resources resulting from continued operation during the renewal period have been evaluated and were designated as a Category 1 issue in the GEIS. The comment provides no new information. This is an operations concern that will be brought to the attention of FPL. The comment will not be evaluated further.

#### 7. Comments Concerning Category 1 Postulated Accident Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 postulated accidents issues include:

Design basis accidents.

**Comment:** Accidents may affect the Biscayne Aquifer, which is the drinking water source for the Miami-Dade county area. (3-9)

**Response:** The comment is noted. Design basis accidents are a Category 1 issue and were evaluated in the GEIS. The comment provides no new information and, therefore, will not be evaluated further.

**Comment:** The licensee's projections for the rapidly growing South Florida population that will occur during the extended license period increases risk and requires the licensee to conduct a probabilistic risk assessment that analyzes emergency response capability to determine whether they can meet the requirements of 10 CFR 50.54(a) in the event of an accident and the requirements of 40 CFR Part 190 and the proposed 40 CFR Part 61 to protect the public from potential high and lower level exposures and resultant health risk. Additionally, the environmental impacts, including environmental pathways, that could result from of a severe accident taking place at the Turkey Point plant, a Bay/Ocean plant, must be analyzed in a sitespecific SEIS. (28-13) 

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**Response:** The comment is noted. Design basis accidents are a Category 1 issue as evaluated in the GEIS. The GEIS analysis does not include the assumption that area population would always remain static. Further, to the extent that the comment concerns emergency planning, such issues were determined by the Commission to be outside of license renewal. Finally, with the exception of a requirement to consider alternative mitigation measures, the Commission has determined that severe accident issues are not within the scope of license renewal. Therefore, this comment will not be evaluated further.

## 8. <u>Comments Concerning Category 1 Uranium Fuel Cycle and Waste Management</u> <u>Issues</u>

As stated in 10 CFR Part 51, Table B-1, Category 1 uranium fuel cycle and waste management issues include:

- Offsite radiological impacts (individual effects from other than the disposal of spent fuel and high level waste)
- Offsite radiological impacts (collective effects)
- Offsite radiological impacts (spent fuel and high level waste)
- Nonradiological impacts of the uranium fuel cycle
- Low level waste storage and disposal
- Mixed waste storage and disposal
- On-site spent fuel
- Nonradiolgical waste.

**Comment:** A spent fuel accident at Turkey Point could contaminate 224 square miles. Need to have appropriate response capability, especially under hurricane situations. (11-3)

**Comment:** There is no place to put the high-level nuclear waste and right now there is nuclear waste piling up at Turkey Point. This could create a problem in case of a nuclear-spent-fuel accident and resultant land contamination. (11-15)

**Comment:** The NRC should look at effects of a hurricane hitting the spent fuel pool, especially as the components in the pool age. (11-16)

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**Comment:** There is a nuclear waste storage issue. There will be an increase in the amount of nuclear waste we leave our children. NRC needs to test if there will be a potential increase in the surrounding environment to ensure there will be no cumulative impact. (11-18).

**Comment:** The proposed action will result in twenty years of additional operation that will increase the amount of high-level and low-level nuclear waste. Presently, FPL does not have storage space for the additional high-level waste and appears to be uncertain as to disposal of their low-level waste. The storage of these wastes on site for the extended period of operation could increase the risk of an accidental release to the environment in that Turkey Point is located in a hurricane zone rather than a geologically stable area. If it becomes necessary to store these wastes on site because no permanent burial site has been implemented, the storage of this spent fuel on site could also increase the risk and consequences of a spent fuel pool accident depending on the storage method. The licensee should be required to demonstrate that they can permanently and safely dispose of both their high level and low-level nuclear waste off-site for the extended operation of the plant. Additionally, the NRC should analyze the potential environmental impact of such a potential accident in a site-specific SEIS. (28-14)

**Comment:** Relicensing will create more nuclear waste and radioactive byproducts that could adversely impact the environment, especially as repositories close. (57-15)

**Response:** The comments are noted. Uranium fuel cycle impacts are Category 1 issues as evaluated in the GEIS. The comments provide no new information and, therefore, will not be evaluated further.

9. <u>Comments Concerning Category 2 Aquatic Ecology and Threatened and Endangered</u> <u>Species Issues</u>

As stated in 10 CFR Part 51, Table B-1, Category 2 aquatic ecology and threatened and endangered species issues are:

- -

• Entrainment of fish and shellfish in early life stages

. . .

- Impingement of fish and shellfish
- Heat shock
- Threatened or endangered species.

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**Comment:** It is estimated that approximately 70% of the increase in population of the American Crocodile in South Florida is due to the preservation efforts of FPL in the cooling canal system. (5-3 and 54-3)

**Comment:** Beneficial coexistence of Turkey Point and the environment. The plant site gave some of the land to the National Park Service to help establish Biscayne National Park. Over 13,000 acres of that property is undeveloped, and is part of the Everglades Mitigation Bank. FPL is restoring this to its natural state and maintaining the land for the protection and preservation of the environment. (5-2 and 54-2)

**Comment:** They have worked with the county government to protect some of the environmentally endangered lands in the community. (6-4)

**Comment:** The Turkey Point Plant is also environmentally sensitive. The 13,000 acres that have been set aside for mitigation are evidence of the commitment to protect the environment. (7-3)

**Comment:** We have one of the only crocodile natural habitats in this area, and that says a lot about the dedication of the Turkey Point Plant and the employees to making sure the environment can coexist with this facility. (9-3)

**Comment:** The cooling canal systems are a unique habitat and would not exist in this day and age. It provides a home for the American crocodile. (12-1)

**Comment:** The lands associated with the Turkey Point Plant have the ability to benefit or harm many of the critical species (threatened and endangered) of South Florida. (27-7)

**Comment:** The Supplement EIS should 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. (27-9)

**Comment:** 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. (27-10)

**Comment:** The water cooling in the canals is not interconnected to the adjacent fragile Biscayne Bay. The extensive both marshy and dry land provides much wildlife habitat for birds,

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varmints and so forth. Part of the land even provides the community an open and sheltered picnic area. (37-6)

**Comment:** Cooling pond system provides a warm ecosystem for wintering birds and wildlife, and protects the American crocodile. (40-4)

**Comment:** The Turkey Point employees have developed a unique stewardship of the environment in the region surrounding the plant by preserving the natural habitat surrounding the plant, providing homes to many endangered species, including the American crocodile. (53-2)

**Response:** The comments are noted. The comments acknowledge the importance of the manner in which FPL operates the site to the benefit of threatened and endangered species. The appropriate descriptive information regarding the plant-specific ecology of the site will be addressed in Section 2 of the SEIS.

**Comment:** This process must comply with the Endangered Species Act. Within a 50 mile radius at Turkey Point there are probably 60 endangered and threatened species because it is a major ecosystem. (11-8)

**Comment:** Under the Endangered Species Act, the NRC must consult with the U.S. Fish and Wildlife Service on how the proposed action could adversely impact threatened and endangered species within at least a fifty mile radius of the Turkey Point plant prior to conducting relicensing activities. (28-10)

**Comment:** NRC has not undertaken consultation with the Fish and Wildlife Service for the proposed action. (57-10)

**Response:** The comments are noted. Threatened and endangered species on the plant site and transmission line rights-of-way will be addressed as a Category 2 issue in Section 4.6 of the SEIS. The staff will conduct appropriate consultation under the Endangered Species Act.

**Comment:** There are new and significant issues related to the presence of endangered and threatened species in the parks and preserves surrounding the site. (57-6)

**Response:** The comment is noted, however, the comment fails to identify the new and significant issues related to the presence of threatened and endangered species. Threatened and endangered species within the plant site and the transmission line rights-of-way will be addressed as a Category 2 issue in Section 4.6 of the SEIS.

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### 10. Comments Concerning Category 2 Socioeconomic Issues

As stated in 10 CFR Part 51, Table B-1, Category 2 socioeconomic issues are:

- Housing
- Public services: public utilities
- Public services, education (refurbishment)
- Offsite land use (refurbishment)
- Offsite land use (license renewal term)
- Public services, transportation
- Historic and archaeological resources.

**Comment:** Turkey Point maintains a wetlands mitigation bank that is used by Homestead and others to offset impacts to wetlands. Loss of the plant will affect the ability to develop. (2-5)

**Response:** The comment is noted. It addresses a Category 2 issue regarding offsite land use during the license renewal term, and will be evaluated in Section 4.4 of the SEIS.

**Comment:** Turkey Point is the largest employer in Dade County. Loss would impact 800 employees, and affect the plant's property tax base of \$8 million. There will be a great deal of ancillary job and facility loss if the license is not renewed. (2-2)

**Comment:** Keeping Turkey Point a part of this community is also important to the social and economic well-being of our neighbors, with an estimated economic impact of over \$60 million annually to the local economy, and by the participation of the Turkey Point employees in the community. (5-7)

**Comment:** They are a major provider of jobs in the community. (6-2)

**Comment:** With over 800 employees, just about all our families are some how touched through the connection with Turkey Point Plant. With \$50 billion in payroll multiplied throughout our community, many of our businesses are able to stay afloat and flourish because of the economic impact of this plant. (7-2)

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**Comment:** We have employees that are there contributing \$8 million in real estate taxes, \$50 million a year in payroll to this community. (9-5)

**Comment:** Nuclear energy is a source of employment and economic activity that supports families, regional businesses, local governments as they provide residents with essential educational and social services. (14-5)

**Comment:** Turkey Point plays a vital role in the local economy. (15-2)

**Comment:** The 800 or so employees of the plant earn an average of over \$62,000 per year, bringing in a payroll of over \$50 million per year, with another \$10 million in goods and services purchased locally. This makes it possible for TIB to make loans to businesses and residents. (16-1)

**Comment:** Turkey Point staff contribute financially to the community, giving over \$150,000 to the United Way, and have a \$200,000 scholarship for Miami-Dade Community College. Turkey Point staff do a lot of work in the community on a volunteer basis. (17-1)

**Comment:** The economic impact of Turkey Point exceeds the payroll, and may be as high as \$150 to 200 million, because of the re-spending of the income in the local community. (22-2)

**Comment:** Turkey Point union members have donated over \$10,000 to the Miami Cancer and Burn Center over the past 7 years. (23-2)

**Comment:** The paychecks at Turkey Point contribute to the Monroe County service-related fields. (26-1)

**Comment:** The folks at Turkey Point are an essential component of this local economy. They are the largest employer in deep South Dade. (30-1)

**Comment:** Turkey Point is the largest employer in South Dade. (32-1)

**Comment:** Turkey Point facility raised over \$150,000 for the United Way for this community and participate heavily in civic activities. Turkey Point staff is highly involved in the community and have created a \$200,000 fund for scholarships at Miami-Dade Community College. (32-2)

**Comment:** The economic impact of not renewing the license would be devastating to the local community of South Dade and Keys Gate. (34-1)

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**Comment:** Contributions from the Turkey Point staff to the United Way affect as many as 450 underprivileged people who are dependent upon their funding and contributions. (35-3)

**Comment:** FPL and its appropriation has another community interest in their direct dollar donations to the local hospital. (37-7)

Comment: Turkey Point employs about 800 people. (38-1)

**Comment:** Plant employees use community services and provide income to the city and jobs for residents. (40-2)

**Comment:** Turkey Point is the largest private employer in South Dade, with over 800 employees and annual base salaries of over \$62,000. Economic impacts would be felt in payroll, property taxes, and support of area services. (41-1)

**Comment:** Turkey Point Nuclear Plant is one of the largest employers in the region with over 800 employees and its purchase of local services helps sustain the economy of south Miami-Dade County. (53-3)

**Comment:** Keeping Turkey Point a part of this community is also important to the social and economic well-being of our neighbors. With an estimated economic impact of over \$60 million annually to the local economy, and by the participation of the Turkey Point employees in the community. (54-7)

**Comment:** Nuclear energy is a source of employment and economic activity that supports families, regional businesses, local governments as they provide residents with essential educational and social services. (56-5)

**Response:** The comments are noted. Socioeconomic issues specific to the plant are Category 2 issues and will be addressed in Section 4.4 of the SEIS. The comments support license renewal at Turkey Point Units 3 and 4.

#### 11. Comments Concerning Environmental Justice

**Comment:** There is a need to look at the impact of re-licensing on Native Americans. The Miccosukee Tribe and Seminoles live within the 50 mile zone of Turkey Point. NRC needs to look at how the re-licensing may impact their culture and way of life. Their culture and whole way of life depends on the natural Everglades system and it not being contaminated. (11-21)

**Comment:** NRC must evaluate environmental justice impacts on the Miccosukee and Seminole Indians. (28-6)

**Response:** The comments are noted. Environmental Justice is an issue specific to the plant and will be addressed in Section 4.4 of the SEIS. The Miccosukee and Seminole Indians have been offered the opportunity to participate in the scoping process and will be invited to comment on the draft SEIS.

12. Comments Concerning Related Federal Projects

**Comment:** The NEPA analysis should involve the South Florida Ecosystem Restoration Task Force. (11-19)

**Comment:** NRC should ask the Fish and Wildlife Service, the Everglades National Park, Biscayne National Park, the Environmental Protection Agency, and the Army Corps of Engineers to become cooperating agencies on the site-specific EIS, and notify the South Florida Ecosystem Restoration Task Force and their working group of the scope of the proposed action. (57-11)

**Response:** The comments are noted. Consultation with U.S. Fish and Wildlife under the Endangered Species Act requirements will take place as part of the license renewal evaluation process under NEPA. Other Federal agencies, as appropriate, have been contacted for information. It is not appropriate for these agencies to be cooperating agencies under the proposed action of license renewal, because these other agencies will not be issuing permits or licenses related to the proposed license renewal action.

**Comment:** There is significant new information at Turkey Point in terms of its significance to this whole area - the whole South Florida area in the Everglades restoration effort. (11-6)

**Comment:** Under NEPA, the NRC must assess whether the proposed action conflicts with the Federal investment in the Everglades Restoration plan. (28-16)

**Comment:** NRC should be aware of the Everglades Restoration Project and the Federal government's commitment to the South Florida ecosystem. (57-3)

**Comment:** Relicensing may be incompatible with restoration of the Everglades and the South Florida ecosystem. (57-17)

**Response:** The comments are noted. However, the comments fail to explain how the existence of an Everglades restoration effort is significant new information that would require

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further assessment in the SEIS. The U.S. Army Corps of Engineers Everglades Restoration Project will be invited to provide information as part of the NEPA analysis of this proposed action. The Everglades Restoration Plan will be discussed in Section 2 of the SEIS.

**Comment:** 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. (28-3)

**Comment:** There are new and significant issues related to the context of the plant, including the Biscayne National Park, Everglades National Park, Big Cypress National Preserve, Miccosukee Indian Reservation, and the Everglades Restoration Bill. (57-5)

**Response:** The comments are noted. However, the comments fail to explain how the existence of an Everglades restoration effort is significant and new information that would require further assessment in the SEIS. The appropriate agencies will be contacted to provide information on their perceptions of scoping issues and impacts as a routine fulfillment of Federal responsibilities under NEPA. To the extent that these comments address offsite land use, which is a Category 2 socioeconomic issue, offsite land use will be discussed in Section 2 and 4 of the SEIS.

#### 13. Comments Concerning Alternative Energy Sources

**Comment:** Nuclear is a good alternative to oil - keeps us from being dependent on foreign oil. (1-1)

**Comment:** Without Turkey Point, a new plant would likely have to be built, and a means for transporting the fuel to the plant would have to be constructed. This could mean constructing a new gas pipeline to the site. Windmills would require over 200,00 acres. A solar park would require over 50,000 acres, and both would be less reliable than Turkey Point. Turkey Point's license renewal is the least impact alternative for providing electricity to the South Florida community. (5-6 and 54-6)

**Comment:** It was calculated that propane gas is three times as expensive as electricity from Turkey Point. (10-2)

**Comment:** Could convert Turkey Point to a natural gas plant. (11-1)

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**Comment:** There is a need to do a fair analysis of alternatives so we will not wind up in Dade County without sufficient power if the plant has to be derated or shut down in the future. (11-10)

**Comment:** Renewal of a nuclear plant's license is far more economical than building any type of new electrical facility. (14-6 and 56-6)

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**Comment:** Current land use is for a nuclear plant, so there is no need to disturb new land for a new power plant. (16-3)

**Comment:** The nuclear plant produces no soot or greenhouse gases, and has no adverse effect on one of the most sensitive ecological areas in the country. A fossil plant could not do this. (26-2)

**Comment:** The Service is very concerned about the detrimental impacts that will occur without the power production from the nuclear units. 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. (27-16)

**Comment:** The Service is concerned about the alternatives to license renewal and that it 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. These direct and cumulative impacts related to a large-scale development of this character should be fully identified within the Supplement EIS. (27-15)

**Comment:** An objective review of alternatives and their environmental risks could preclude the need to conduct the expensive and time consuming relicensing process by substituting a more environmentally friendly alternative for the operation of this aged nuclear power plant located in one of the most environmentally sensitive areas in the world. (28-9)

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**Comment:** Nuclear power is clean. The Tampa Tribune recently published an article on fossil fuel emissions and the FDA is considering having warning labels on deepwater pelagic species such as tuna, shark and swordfish due to fossil-fuel emissions. (30-2)

**Comment:** The alternative to Turkey Point is more power plants in the Keys with their unavoidable impact on the fragile Keys environment. Other alternatives, such as the sun which

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Monroe County has in abundance, are not ready to power all the air-conditioners, lights, and countless no vacancy signs. (33-1)

**Comment:** Nuclear power is cleaner than other kinds of power. It provides the power they to keep their agricultural business going. (35-2)

**Comment:** It makes sense to extend the license. If these plants were required to shut down, new and possibly more expensive plants would have to be built in order to provide generation capacity required for an ever increasing population in the area. (36-3)

**Comment:** Look at reasonable alternatives. Look at gas-fired generator, fossil-fuel generator, need to be sure that the extension of the license gets us the best way of generating safe, reliable electricity for the community. (39-2)

**Comment:** Nuclear generation is currently the least expensive method of providing electricity to the area, and produces no pollutants to the air, unlike fossil fuels. (40-3)

**Comment:** NRC should evaluate a full study of alternatives, including those that are more environmentally friendly. (57-9)

**Response:** The comments are noted. Many of the comments support relicensing of Turkey Point. Impacts from reasonable alternatives for the Turkey Point license renewal will be evaluated in Section 8 of the SEIS.

**Comment:** 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 sea grass recovery by potentially ripping it from the bottom, as well as other vegetation. Turbidity is known to limit the photosynthesis of both the phyoplanktonic and sea grass communities that are essential to a healthy marine ecosystem. (27-1)

**Comment:** FPL should consider the possibility of extending the existing and under-utilized fuel pipeline from the former Homestead Air Force Base to the Power Plant as an alternative. (27-2)

**Response:** The comments are noted. The comments refer to fuel delivery to the fossilpowered Units 1 and 2. Fuel delivery to the fossil powered units is not within the scope of 10 CFR Part 51 or 54, as fossil plants are not subject to NRC regulation. The analysis of alternatives in Section 8 of the SEIS will include the possibility of replacing the nuclear plants by

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alternative types of generation, including fossil plants. Section 8 will evaluate the impacts associated with pipelines needed to support alternative forms of generation and the impacts of barge delivery on the Biscayne Bay water quality and ecology.

#### 14. Comments Concerning Safety Issues Within the Scope of License Renewal

**Comment:** The issue of pressure-vessel integrity at Turkey Point and does this reactor have the integrity it needs to have. This needs to be added to the NEPA process because its important to safety and to economics. (11-9)

**Comment:** There is an issue with hurricanes and aging equipment that could increase the risk probability and magnitude of a radiological accident. (11-11)

**Comment:** Need to be sure pressure vessels have the strength and the capacity to continue to operate for another 20 years. (39-1)

**Comment:** The NRC should require that the licensee perform an analysis based on plantspecific surveillance capsule test data, and plant-specific operating history, for both Turkey Point Units 3 and 4, because the rate at which the beltline weld material deteriorates and/or embrittles is plant specific. Such a plant-specific analysis is necessary to prove that an acceptable margin of safety exists for the reactor vessels in both Turkey Point Units 3 and 4 that will enable them to meet the requirements of 10 CFR 50.61 and 10 CFR (c)(1)(ii) during the period of extended operation, because the additional twenty years of operation will cause increased neutron radiation damage to the reactor vessel welds that could further decrease the margin of safety, thereby increasing the probability that a pressurized thermal shock event and resultant meltdown could take place at Turkey Point Unit 3 or 4, either as a result of an internal event or an external event , such as a hurricane, if fracture toughness is not maintained. In the event that such an accident occurs in a hurricane in which emergency response capability is curtailed or restricted, the consequences to the public could also be increased. (28-11)

**Comment:** The age-related degradation of multiple components could increase the chance that several components in the reactor and/or spent fuel pool, could fail simultaneously during a hurricane, thereby reducing the margin of safety 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. The probability of a hurricane's (including a beyond design basis hurricane's) impact on deteriorated plant structures and components and its contribution to risk should be analyzed and discussed in quantitative terms by the licensee in their application or environmental report to meet the requirements of 10 CFR 50.4(a)(1) and also in a site-specific SEIS under NEPA. (28-12)

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**Comment:** Operation of this aged and embrittled nuclear power plant beyond its original license will cause more radioactive fission products to accumulate and could increase the probability and consequences of a nuclear accident, threatening injury to herself, her family and the ecosystem of South Florida. (57-1)

**Comment:** NRC should ensure that the licensee conduct Charpy tests of the pressure vessel welds, because an embrittled pressure vessel would be subject to multiple failures of aging components, including that induced by a hurricane. NRC should evaluate whether multiple-component failure is more likely in an old facility. (57-12)

**Comment:** Hurricane and aging equipment could increase the risk, probability, and magnitude of a radiological accident. (57-13)

**Response:** The comments are noted. To the extent that these comments pertain to aging within the scope of license renewal, these issues will be addressed during the parallel safety analysis review performed under 10 CFR Part 54. Aging management issues are outside the scope of 10 CFR Part 51 and will not be evaluated further in this SEIS. The ability to cope with the effects of severe weather, such as hurricanes and tornados, is specifically addressed in the deterministic review conducted prior to issuance of an operating license. This forms part of a plant's licensing basis, which must be met at all times during the operating life of the plant. Weather events more severe than the plant's design basis have been addressed by the licensee in its individual plant examinations of internal and external events (IPE and IPEEE, respectively). These plant-specific risk studies provide baseline estimates of risk from internal and external events. In evaluating severe accident mitigation alternatives (SAMAs), a license renewal applicant uses risk profiles to identify potential means of further reducing risk (through design alternatives that enhance the ability to prevent or mitigate core damage). Section 5.2 of the SEIS will contain the staff's evaluation of SAMAs.

#### 15. Questions

The following comments were presented in the form of questions during the scoping process. The staff will take note of the questions to the extent that the questions apply to the issues discussed in the SEIS. However, the questions did not provide new information and will not be evaluated further.

#### Water Quality

**Comment:** The cooling canals are unlined, and the water enters Card Sound and Biscayne Bay at 60 to 150 cubic feet per second. What levels of contaminants are migrating to the Sound, and what is appearing in the inshore marine life of Biscayne Bay National Park? (3-1)

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**Comment:** Will the discharge of contaminants to the cooling canals and ultimately to Card Sound increase if Barnwell closes and the Southeast Regional Compact collapses? (3-2)

**Comment:** Do contaminants in the fish and shellfish of Card Sound and Biscayne Bay from Turkey Point discharges pose an unacceptable health risk for consumers of those resources? (3-3)

**Comment:** What are the actual levels of  $CO_2$  production during the fuel fabrication process? (3-6)

**Comment:** What isotopes at what concentrations are present in the water of Lake Warren? (29-3)

**Comment:** What isotopes at what concentrations are present in the sediment of Lake Warren? (29-4)

**Comment:** What volume of water containing radioactive waste, other than condenser cooling water was discharged into Lake Warren in year 2000? (29-5)

**Comment:** What are the daily limits in volume and concentration for each chemical allowed for discharge by the National Pollutant Discharge Elimination System permit? (29-6)

**Comment:** Have there been any requested discharges of toxic chemicals in year 2000? What chemicals, what volume, what concentrations? (29-7)

**Comment:** What are the nonradioactive pollutants present in the water of Lake Warren? What chemicals, what concentrations? (29-8)

**Comment:** What radioactive isotopes have been found in the bay waters outside the Turkey Point plant in year 2000? (29-9)

**Comment:** What nonradioactive pollutants have been found in the bay waters outside the Turkey Point plant in year 2000? (29-10)

**Response:** The questions are noted. Radiological dose, offsite migration of radionuclides, water quality, and uranium fuel cycle impacts are Category 1 issues that were evaluated in the GEIS. Information from routine monitoring programs are available from the State of Florida Department of Health. The requirements in the National Pollutant Discharge Elimination System permit are set by the State of Florida and are not under the jurisdiction of the NRC. The permit is included as part of the applicant's Environmental Report, and will be discussed in

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Section 2.2.3 of the SEIS. The questions provide no new information and, therefore, will not be evaluated further.

## Postulated Accidents

**Comment:** What safety impacts will result from the increased air traffic associated with the proposed change in use of Homestead AFB? (3-7)

**Comment:** If Homestead AFB becomes a space port, what will be the impacts on Turkey Point if a million pounds of liquid hydrogen stored in above-ground tanks near the plant ignite? (3-8)

**Response:** The questions are noted. The impacts associated with postulated accidents resulting from site hazards are evaluated under 10 CFR Part 50 as part of the licensing design basis. In January 2001, the Department of Defense announced that it will allow civilian control and development of a portion of the former Homestead Air Force Base, provided no future airport is located at that site. Should an airport be proposed near any nuclear power plant in the United States, the hazard to continued operation of the plant would be evaluated. The questions provide no new information and, therefore, will not be evaluated further.

#### Summary

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1 The preparations of the plant-specific supplement to the GEIS takes into account all the relevant issues raised during the scoping process that are described above. Concerns related 1 to the environmental license renewal review of Turkey Point were considered during the I development of the draft SEIS for Turkey Point Units 3 & 4. The draft SEIS was available for public comment. Interested Federal, State, and local government agencies; local organizations; and members of the public were given the opportunity to provide additional input to be considered during the development of the final SEIS. Concerns identified that are outside the 1 scope of the staff's environmental review have been or will be forwarded to the appropriate NRC program manager. 1

## Part II - Comments Received on the Draft SEIS

1 Pursuant to 10 CFR Part 51, the staff transmitted the Generic Environmental Impact Statement 1 for License Renewal of Nuclear Plants, Regarding Turkey Point Units 3 and 4, Draft Report for I Comment (NUREG-1437, Supplement 5, referred to as the draft SEIS) to Federal, State, and

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local government agencies as well as interested members of the public. As part of the process to solicit public comments on the draft SEIS, the staff:

- placed a copy of the draft SEIS into the NRC's electronic Public Document Room, its license renewal website, and the Homestead Branch Library located at 700 N. Homestead Boulevard, Homestead, Florida 33030
- sent copies of the draft SEIS to the applicant, members of the public who requested copies, and certain Federal, State, and local agencies
- published a notice of availability of the draft SEIS in the Federal Register on June 22, 2001 (66 FR 33538)
- issued public announcements, such as advertisements in local newspapers and postings in public places, of the availability of the draft SEIS
- announced and held two public meetings in Homestead, Florida, on July 17, 2001, to describe the results of the environmental review and answer related questions
- issued public service announcements and press releases announcing the issuance of the draft SEIS, the public meetings, and instructions on how to comment on the draft SEIS
- established a website to receive comments on the draft SEIS through the Internet.

During the comment period, the staff received a total of 8 comment letters in addition to the comments received during the public meetings.

The staff has reviewed the public meeting transcripts and the 8 comment letters that are part of the docket file for the application, all of which are available in the NRC's electronic Public Document Room. Appendix A, Part II, Section A.1 contains a summary of the comments and the staff's responses. Related issues are grouped together. Appendix A, Part II, Section A.2 contains excerpts of the July 17, 2001, public meeting transcripts, the written statements provided at the public meetings, and comment letters.

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Each comment identified by the staff was assigned a specific alpha-numeric identifier (marker). That identifier is typed in the margin of the transcript or letter at the beginning of the discussion of the comment. A cross-reference of the alpha-numeric identifiers, the speaker or author of the comment, the page where the comment can be found, and the section(s) of this report in which the comment is addressed is provided in Table A-2. The speakers at the meetings are

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listed in speaking order along with the page of the transcript excerpts in this report on which the 1 comment appears. These comments are identified by the letters "TPD" followed by a number 1 that identifies each comment in approximate chronological order in which the comments were 1 made. The written statements (from the public meetings) and written comment letters are also 1 1 identified by the letters "TPD."

The staff made a determination on each comment that it was one of the following:

- a comment that was actually a request for information and introduced no new information. (1)
- (2) a comment that was either related to support or opposition of license renewal in general (or specifically Turkey Point Nuclear Plant) or that made a general statement about the license renewal process. It may have made only a general statement regarding Category 1 and/or Category 2 issues. In addition, it provided no new information and does not pertain to 10 CFR Part 54.
- (3) a comment about a Category 1 issue that
  - provided new information that required evaluation during the review, or (a)
  - provided no new information (b)
- a comment about a Category 2 issue that (4)
  - provided information that required evaluation during the review, or (a)
  - provided no such information (b)
- a comment that raised an environmental issue that was not addressed in the GEIS or the (5) DSEIS
- (6) a comment on safety issues pertaining to 10 CFR Part 54, or
- a comment outside the scope of license renewal (not related to 10 CFR Parts 51 or 54). (7)

There was no significant new information provided on Category 1 issues [(3)(a) above] or information that required further evaluation on Category 2 issues [(4)(a)]. Therefore, the GEIS and draft SEIS remained valid and bounding, and no further evaluation was performed.

1 Comments without a supporting technical basis or without any new information are discussed in this appendix, and not in other sections of this report. Relevant references that address the 1 issues within the regulatory authority of the NRC are provided where appropriate. Many of 1 these references can be obtained from the NRC electronic Public Document Room.

Within each section of Part II of this appendix (A.1.1 through A.1.21), similar comments are grouped together for ease of reference, and a summary description of the comments is given,

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followed by the staff's response. Where the comment or question resulted in a change in the text of the draft report, the corresponding response refers the reader to the appropriate section of this report where the change was made. Revisions to the text in the draft report are designated by vertical lines beside the text.

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Some numbers were initially assigned to portions of verbal or written statements that were later determined not to be comments. These items were removed from the table. As a result, not all numbers are sequential (see Table A-2).

No	S	peaker or	Source	Page of	Section(s) Where	i
TPD09-1	Y	Marsh	Afternoon Meeting Transcript (07/17/01)	A-165	A.1.1	ļ
TPD10-1	c	lvv	Afternoon Meeting Transcript (07/17/01)	A-165	A.1.2	
TPD10-2	С	lvy	Afternoon Meeting Transcript (07/17/01)	A-166	A.1.14	
TPD10-3	С	lvy	Afternoon Meeting Transcript (07/17/01)	A-166	A.1.14	
TPD10-4	С	lvy	Aftemoon Meeting Transcript (07/17/01)	A-166	A.1.14	
TPD10-5	с	lvy	Afternoon Meeting Transcript (07/17/01)	A-166	A.1.14	1
TPD10-6	С	lvy ·	Afternoon Meeting Transcript (07/17/01)	A-167	A.1.1	1
TPD11-1	С	Lanza	Afternoon Meeting Transcript (07/17/01)	A-167	A.1.2	
TPD11-2	С	Lanza	Afternoon Meeting Transcript (07/17/01)	A-167	A.1.2	1
TPD12-1	Α	Penelas	Afternoon Meeting Transcript (07/17/01)	A-167	A.1.2	۱
TPD12-2	Α	Penelas	Afternoon Meeting Transcript (07/17/01)	A-168	A.1.19	1
TPD12-3	A	Penelas	Afternoon Meeting Transcript (07/17/01)	A-168	A.1.2	1
TPD12-4	A	Penelas	Afternoon Meeting Transcript (07/17/01)	A-168	A.1.15	I
TPD12-5	Α	Penelas	Afternoon Meeting Transcript (07/17/01)	A-168	A.1.14	I
TPD12-6	A	Penelas	Afternoon Meeting Transcript (07/17/01)	A-168	A.1.14	I
TPD12-7	Α	Penelas	Afternoon Meeting Transcript (07/17/01)	A-168	A.1.1	I
TPD13-1	1	Toner	Afternoon Meeting Transcript (07/17/01)	A-169	A.1.2	I
TPD13-2	I	Toner	Afternoon Meeting Transcript (07/17/01)	A-169	A.1.2	I
TPD13-3		Toner	Afternoon Meeting Transcript (07/17/01)	A-169	A.1.2	1

 Table A-2.
 Turkey Point Units 3 and 4 SEIS Comment Log

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_No.	S	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
TPD14-1	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-170	A.1.2
TPD14-2	в	Hovey	Afternoon Meeting Transcript (07/17/01)	A-170	A.1.2
TPD14-3	в	Hovey	Afternoon Meeting Transcript (07/17/01)	A-171	A.1.18
TPD14-4	в	Hovey	Afternoon Meeting Transcript (07/17/01)	A-171	A.1.9
TPD14-5	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-171	A.1.9
TPD14-6	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-171	A.1.9
TPD14-7	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-171	A.1.9
TPD14-8	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-171	A.1.9
TPD14-9	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-171	A.1.19
TPD14-10	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-172	A.1.15
TPD14-11	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-172	A.1.8
TPD14-12	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-172	A.1.7
TPD14-13	в	Hovey	Afternoon Meeting Transcript (07/17/01)	A-172	A.1.14
TPD14-14	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-172	A.1.14
TPD14-15	В	Hovey	Afternoon Meeting Transcript (07/17/01)	A-172	A.1.1
TPD15-1	L	Thompson	Afternoon Meeting Transcript (07/17/01)	A-173	A.1.2
TPD15-2	L	Thompson	Afternoon Meeting Transcript (07/17/01)	A-173	A.1.17
TPD15-3	L	Thompson	Afternoon Meeting Transcript (07/17/01)	A-173	A.1.7
TPD15-4	L	Thompson	Afternoon Meeting Transcript (07/17/01)	A-174	A.1.8
TPD15-5	L	Thompson	Afternoon Meeting Transcript (07/17/01)	A-174	A.1.15
TPD15-6	L	Thompson	Afternoon Meeting Transcript (07/17/01)	A-174	A.1.2
TPD15-7	L	Thompson	Afternoon Meeting Transcript (07/17/01)	A-174	A.1.19
TPD15-8	L	Thompson	Afternoon Meeting Transcript (07/17/01)	A-174	A.1.14
TPD16-1	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-176	A.1.9
TPD16-2	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-176	A.1.9

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		Table A			
No.		Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
TPD16-3	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-176	A.1.9
TPD16-4	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-176	A.1.9
TPD16-5	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-177	A.1.9
TPD16-6	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-177	A.1.9
TPD16-7	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-178	A.1.9
TPD16-8	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-178	A.1.9
TPD16-9	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-178	A.1.9
TPD16-10	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-178	A.1.9
TPD16-11	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-178	A.1.9
TPD16-12	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-179	A.1.9
TPD16-13	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-179	A.1.9
TPD16-14	J	Brown	Afternoon Meeting Transcript (07/17/01)	A-179	A.1.9
TPD17-1	Е	Sternglass	Afternoon Meeting Transcript (07/17/01)	A-181	- A.1.9
TPD17-2	Е	Stemglass	Afternoon Meeting Transcript (07/17/01)	<b>A-180</b> <sup>1</sup>	A.1.9
TPD17-3	Е	Sternglass	Afternoon Meeting Transcript (07/17/01)	A-182	A.1.9
TPD17-4	Ε	Sternglass	Afternoon Meeting Transcript (07/17/01)	A-180	A.1.9
TPD17-5	Е	Sternglass	Afternoon Meeting Transcript (07/17/01)	A-181	A.1.9
TPD17-6	Е	Sternglass	Afternoon Meeting Transcript (07/17/01)	A-181	A.1.9
TPD17-7	Е	Sternglass	Afternoon Meeting Transcript (07/17/01)	A-181	A.1.9
TPD17-8	Ε	Sternglass	Afternoon Meeting Transcript (07/17/01)	A-182	A.1.9
TPD18-1	н	Keaton	Afternoon Meeting Transcript (07/17/01)	A-183	A.1.9
TPD18-2	н	Keaton	Afternoon Meeting Transcript (07/17/01)	A-183	A.1.9
TPD18-3	Н	Keaton	Afternoon Meeting Transcript (07/17/01)	A-184	A.1.9
TPD19-1	D	Moeller .	Afternoon Meeting Transcript (07/17/01)	A-185	A.1.9
TPD20-1	м	Oncavage	Afternoon Meeting Transcript (07/17/01)	A-189	A.1.18

Table A-2. Turkey Point Units 3 and 4 SEIS Comment Log

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No.	Speaker or Author		Source	Page of Comment	Section(s) Where Addressed
TPD20-2	М	Oncavage	Afternoon Meeting Transcript (07/17/01)	A-189	A.1.18
TPD20-3	М	Oncavage	Afternoon Meeting Transcript (07/17/01)	A-189	A.1.18
TPD20-4	М	Oncavage	Afternoon Meeting Transcript (07/17/01)	A-190	A.1.18
TPD20-5	М	Oncavage	Afternoon Meeting Transcript (07/17/01)	A-191	A.1.18
TPD20-6	М	Oncavage	Afternoon Meeting Transcript (07/17/01)	A-191	A.1.18
TPD20-7	М	Oncavage	Afternoon Meeting Transcript (07/17/01)	A-191	A.1.18
TPD20-8	М	Oncavage	Afternoon Meeting Transcript (07/17/01)	A-191	A.1.18
TPD20-9	М	Oncavage	Afternoon Meeting Transcript (07/17/01)	A-191	A.1.8
TPD20-10	М	Oncavage	Afternoon Meeting Transcript (07/17/01)	A-191	A.1.18
TPD21-1	D	Jacobs	Afternoon Meeting Transcript (07/17/01)	A-191	A.1.9
TPD21-2	D	Jacobs	Afternoon Meeting Transcript (07/17/01)	A-192	A.1.9
TPD21-3	D	Jacobs	Afternoon Meeting Transcript (07/17/01)	A-192	A.1.9
TPD21-4	D	Jacobs	Afternoon Meeting Transcript (07/17/01)	A-192	A.1.3
TPD21-5	D	Jacobs	Afternoon Meeting Transcript (07/17/01)	A-192	A.1.3
TPD22-1	F	Pitz	Afternoon Meeting Transcript (07/17/01)	A-192	A.1.18
TPD22-2	F	Pitz	Afternoon Meeting Transcript (07/17/01)	A-192	A.1.13
TPD22-3	F	Pitz	Afternoon Meeting Transcript (07/17/01)	A-193	A.1.18
TPD22-4	F	Pitz	Afternoon Meeting Transcript (07/17/01)	A-193	A.1.3
TPD23-1	М	Donworth	Afternoon Meeting Transcript (07/17/01)	A-194	A.1.19
TPD23-2	М	Donworth	Afternoon Meeting Transcript (07/17/01)	A-194	A.1.14
TPD23-3	М	Donworth	Afternoon Meeting Transcript (07/17/01)	A-194	A.1.14
TPD23-4	М	Donworth	Aftemoon Meeting Transcript (07/17/01)	A-194	A.1.14
TPD23-5	М	Donworth	Afternoon Meeting Transcript (07/17/01)	A-194	A.1.14
TPD23-6	м	Donworth	Afternoon Meeting Transcript (07/17/01)	A-194	A.1.2
TPD24-1	D	Friedrichs	Afternoon Meeting Transcript (07/17/01)	A-195	A.1.1

Table A-2 Turkey Point Units 3 and 4 SEIS Comment Log

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		Table A-2	2. Turkey Point Units 3 and 4 SEIS Comm	ent Log	
Speaker or No. Author		Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
TPD24-2	D	Friedrichs	Afternoon Meeting Transcript (07/17/01)	A-195	A.1.14
TPD24-3	D	Friedrichs	Afternoon Meeting Transcript (07/17/01)	A-195	A.1.1
TPD25-1	Α	Velazquez	Afternoon Meeting Transcript (07/17/01)	A-196	A.1.2
TPD25-2	A	Velazquez	Aftemoon Meeting Transcript (07/17/01)	A-196	A.1.19
TPD25-3	Α	Velazquez	Afternoon Meeting Transcript (07/17/01)	A-196	A.1.2
TPD25-4	Α	Velazquez	Afternoon Meeting Transcript (07/17/01)	A-196	A.1.19
TPD25-5	A	Velazquez	Aftemoon Meeting Transcript (07/17/01)	A-196	A.1.7
TPD25-6	Α	Velazquez	Aftemoon Meeting Transcript (07/17/01)	A-196	A.1.15
TPD25-7	A	Velazquez	Aftemoon Meeting Transcript (07/17/01)	A-196	A.1.19
TPD25-8	A	Velazquez	Afternoon Meeting Transcript (07/17/01)	A-196	A.1.2
TPD25-9	Α	Velazquez	Afternoon Meeting Transcript (07/17/01)	A-197	A.1.2
TPD25-10	Α	Velazquez	Afternoon Meeting Transcript (07/17/01)	A-197	A.1.19
TPD25-11	Α	Velazquez	Afternoon Meeting Transcript (07/17/01)	A-197	A.1.19
TPD26-1	R	Rothschild	Afternoon Meeting Transcript (07/17/01)	A-198	A.1.14
TPD26-2	R	Rothschild	Aftemoon Meeting Transcript (07/17/01)	A-198	A.1.18
TPD27-1	L	Dilan 1	Aftemoon Meeting Transcript (07/17/01)	A-199	A.1.1
TPD27-2	L	Dilan	Afternoon Meeting Transcript (07/17/01)	A-199	A.1.19
TPD27-3	L	Dilan	Afternoon Meeting Transcript (07/17/01)	A-199	A.1.14
TPD27-4	L	Dilan	Afternoon Meeting Transcript (07/17/01)	A-199	A.1.2
TPD27-5	L	Dilan	Afternoon Meeting Transcript (07/17/01)	A-199	A.1.14
TPD27-6	L	Dilan 🗟	Afternoon Meeting Transcript (07/17/01)	A-199	A.1.15
TPD27-7	L	Dilan	Afternoon Meeting Transcript (07/17/01)	A-199	A.1.2
TPD27-8	L	Dilan 🕚	Afternoon Meeting Transcript (07/17/01)	A-199	A.1.2
TPD28-1	В	Thompson	Afternoon Meeting Transcript (07/17/01)	A-200	A.1.1
TPD28-2	в	Thompson	Afternoon Meeting Transcript (07/17/01)	A-200	A.1.2

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No.	:	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
TPD28-3	В	Thompson	Afternoon Meeting Transcript (07/17/01)	A-200	A.1.2
TPD28-4	В	Thompson	Afternoon Meeting Transcript (07/17/01)	A-200	A.1.2
TPD28-5	В	Thompson	Afternoon Meeting Transcript (07/17/01)	A-201	A.1.2
TPD28-6	В	Thompson	Afternoon Meeting Transcript (07/17/01)	A-201	A.1.2
TPD28-7	В	Thompson	Afternoon Meeting Transcript (07/17/01)	A-201	A.1.7
TPD28-8	В	Thompson	Afternoon Meeting Transcript (07/17/01)	A-201	A.1.2
TPD28-9	В	Thompson	Afternoon Meeting Transcript (07/17/01)	A-201	A.1.1
TPD29-1	S	Showen	Afternoon Meeting Transcript (07/17/01)	A-202	A.1.9
TPD29-2	S	Showen	Afternoon Meeting Transcript (07/17/01)	A-202	A.1.9
TPD29-3	S	Showen	Afternoon Meeting Transcript (07/17/01)	A-202	A.1.9
TPD29-4	S	Showen	Afternoon Meeting Transcript (07/17/01)	A-202	A.1.9
TPD29-5	S	Showen	Afternoon Meeting Transcript (07/17/01)	A-202	A.1.13
TPD29-6	S	Showen	Afternoon Meeting Transcript (07/17/01)	A-202	A.1.9
TPD30-1	D	Rydholm	Afternoon Meeting Transcript (07/17/01)	A-203	A.1.2
TPD30-2	D	Rydholm	Afternoon Meeting Transcript (07/17/01)	A-203	A.1.14
TPD30-3	D	Rydholm	Afternoon Meeting Transcript (07/17/01)	A-203	A.1.1
TPD31-1		Cullen	Afternoon Meeting Transcript (07/17/01)	A-204	A.1.9
TPD31-2		Cullen	Afternoon Meeting Transcript (07/17/01)	A-204	A.1.15
TPD31-3		Cullen	Afternoon Meeting Transcript (07/17/01)	A-204	A.1.1
TPD31-4		Cullen	Afternoon Meeting Transcript (07/17/01)	A-204	A.1.17
TPD32-1	т	Breslin	August 5, 2001, Letter	A-260	A.1.3
TPD32-2	т	Breslin	August 5, 2001, Letter	A-260	A.1.6
TPD32-3	т	Breslin	August 5, 2001, Letter	A-260	A.1.18
TPD32-4	Т	Breslin	August 5, 2001, Letter	A-260	A.1.3
TPD32-5	т	Breslin	August 5, 2001, Letter	A-260	A.1.13

### Table A-2. Turkey Point Units 3 and 4 SEIS Comment Log

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No.	ę	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed	
TPD32-6	т	Breslin	August 5, 2001, Letter	A-260	A.1.9	
TPD33-1	G	Hogue	July 31, 2001, Letter	A-261	A.1.20	
TPD34-1	J	Lorion	Evening Meeting Transcript (07/17/01)	A-210	A.1.18	
TPD34-2	J	Lorion	Evening Meeting Transcript (07/17/01)	A-216	A.1.18	
TPD34-3	J	Lorion	Evening Meeting Transcript (07/17/01)	A-216	A.1.18	
TPD34-4	J	Lorion	Evening Meeting Transcript (07/17/01)	A-217	A.1.20	
TPD34-5	J	Lorion	Evening Meeting Transcript (07/17/01)	A-217	A.1.18	
TPD34-6	J	Lorion	Evening Meeting Transcript (07/17/01)	A-217	A.1.4	
TPD34-7	J	Lorion	Evening Meeting Transcript (07/17/01)	A-217	A.1.9	
TPD34-8	J	Lorion	Evening Meeting Transcript (07/17/01)	A-217	A.1.18	
TPD34-9	J	Lorion	Evening Meeting Transcript (07/17/01)	A-218	A.1.17	
TPD34-10	J	Lorion	Evening Meeting Transcript (07/17/01)	A-218	A.1.13	
TPD34-11	J	Lorion	Evening Meeting Transcript (07/17/01)	A-218	A.1.4	
TPD34-12	J	Lorion	Evening Meeting Transcript (07/17/01)	A-218	A.1.16	
TPD34-13	J	Lorion	Evening Meeting Transcript (07/17/01)	A-218	A.1.12	
TPD34-14	J	Lorion	Evening Meeting Transcript (07/17/01)	A-219	A.1.15	
TPD34-15	J	Lorion	Evening Meeting Transcript (07/17/01)	A-219	A.1.3	
TPD35-1	D	Moss	Evening Meeting Transcript (07/17/01)	A-214	A.1.2	
TPD35-2	D	Moss ,	Evening Meeting Transcript (07/17/01)	A-214	A.1.9	
TPD35-3	D	Moss	Evening Meeting Transcript (07/17/01)	A-214	A.1.14	1
TPD35-4	D	Moss	Evening Meeting Transcript (07/17/01)	A-214	A.1.19	1
TPD36-1	s	Fletcher	Evening Meeting Transcript (07/17/01)	A-215	A.1.2	1
TPD36-2	s	Fletcher	Evening Meeting Transcript (07/17/01)	A-215	A.1.14	I
TPD36-3	s	Fletcher	Evening Meeting Transcript (07/17/01)	A-215	A.1.2	۱
TPD37-1	s	Kennedy	Evening Meeting Transcript (07/17/01)	A-215	A.1.1	.

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No.		Speaker or Author		Source	Page of Comment	Section(s) Where Addressed
TPD37	-2	s	Kennedy	Evening Meeting Transcript (07/17/01)	A-215	A.1.14
TPD38	9-1	J	Wasolewski	Evening Meeting Transcript (07/17/01)	A-220	A.1.15
TPD38	-2	J	Wasolewski	Evening Meeting Transcript (07/17/01)	A-220	A.1.1
TPD38	-3	J	Wasolewski	Evening Meeting Transcript (07/17/01)	A-220	A.1.11
TPD39	)-1	М	Finlan	Evening Meeting Transcript (07/17/01)	A-220	A.1.1
TPD40	)-1	к	Bailey	Evening Meeting Transcript (07/17/01)	A-221	A.1.9
TPD40	-2	к	Bailey	Evening Meeting Transcript (07/17/01)	A-221	A.1.18
TPD40	-3	к	Bailey	Evening Meeting Transcript (07/17/01)	A-221	A.1.13
TPD40	-4	к	Bailey	Evening Meeting Transcript (07/17/01)	A-221	A.1.9
TPD40	-5	к	Bailey	Evening Meeting Transcript (07/17/01)	A-221	A.1.18
TPD40	-6	к	Bailey	Evening Meeting Transcript (07/17/01)	A-221	A.1.18
TPD41	-1	к	Sovia	Evening Meeting Transcript (07/17/01)	A-222	A.1.2
TPD41	-2	к	Sovia	Evening Meeting Transcript (07/17/01)	A-222	A.1.14
TPD41	-3	к	Sovia	Evening Meeting Transcript (07/17/01)	A-222	A.1.11
TPD41	-4	к	Sovia	Evening Meeting Transcript (07/17/01)	A-222	A.1.2
TPD42	-1	т	Williams	Evening Meeting Transcript (07/17/01)	A-223	A.1.2
TPD42	-2	т	Williams	Evening Meeting Transcript (07/17/01)	A-223	A.1.19
TPD42	-3	т	Williams	Evening Meeting Transcript (07/17/01)	A-223	A.1.11
TPD42	-4	т	Williams	Evening Meeting Transcript (07/17/01)	A-224	A.1.1
TPD42	-5	т	Williams	Evening Meeting Transcript (07/17/01)	A-224	A.1.1
TPD43	-1	R	Hovey	Evening Meeting Transcript (07/17/01)	A-224	A.1.1
TPD43	-2	R	Hovey	Evening Meeting Transcript (07/17/01)	A-225	A.1.1
TPD43	-3	R	Hovey	Evening Meeting Transcript (07/17/01)	A-226	A.1.2
TPD43	-4	R	Hovey	Evening Meeting Transcript (07/17/01)	A-226	A.1.2
TPD43	-5	R	Hovey	Evening Meeting Transcript (07/17/01)	A-226	A.1.9

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		Table A	2. Turkey Point Units 3 and 4 SEIS Comme	nt Log	
No.		Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
TPD43-6	R	Hovey	Evening Meeting Transcript (07/17/01)	A-227	A.1.19
TPD43-7	R	Hovey	Evening Meeting Transcript (07/17/01)	A-227	A.1.11
TPD43-8	R	Hovey	Evening Meeting Transcript (07/17/01)	A-227	A.1.14
TPD43-9	R	Hovey	Evening Meeting Transcript (07/17/01)	A-227	A.1.1
TPD43-10	R	Hovey	Evening Meeting Transcript (07/17/01)	A-226	A.1.9
TPD44-1	L	Thompson	Evening Meeting Transcript (07/17/01)	A-228	A.1.7
TPD44-2	L	Thompson	Evening Meeting Transcript (07/17/01)	A-228	A.1.15
TPD44-3	L	Thompson	Evening Meeting Transcript (07/17/01)	A-229	A.1.19
TPD44-4	L	Thompson	Evening Meeting Transcript (07/17/01)	A-229	A.1.14
TPD44-5	L	Thompson	Evening Meeting Transcript (07/17/01)	A-229	A.1.1
TPD44-6	L	Thompson	Evening Meeting Transcript (07/17/01)	A-229	A.1.2
TPD45-1	н	Keaton	Evening Meeting Transcript (07/17/01)	A-230	A.1.9
TPD45-2	н	Keaton	Evening Meeting Transcript (07/17/01)	A-230	A.1.9
TPD45-3	н	Keaton	Evening Meeting Transcript (07/17/01)	A-231	A.1.9
TPD46-1	D	Moeller	Evening Meeting Transcript (07/17/01)	A-232	A.1.9
TPD46-2	D	Moeller	Evening Meeting Transcript (07/17/01)	A-234	A.1.9
TPD47-1	М	Jonckheere	Evening Meeting Transcript (07/17/01)	A-236	A.1.4
TPD47-2	М	Jonckheere	Evening Meeting Transcript (07/17/01)	A-236	A.1.9
TPD47-3	М	Jonckheere	Evening Meeting Transcript (07/17/01)	A-236	A.1.9
TPD47-4 .	м	Jonckheere	Evening Meeting Transcript (07/17/01)	A-236	A.1.4
TPD48-1	М	Donworth	Evening Meeting Transcript (07/17/01)	A-237	A.1.14
TPD49-1	R	Anderson	Evening Meeting Transcript (07/17/01)	A-238	A.1.7
TPD49-2	R	Anderson	Evening Meeting Transcript (07/17/01)	A-238	A.1.14
TPD49-3	R	Anderson .	Evening Meeting Transcript (07/17/01)	A-238	A.1.17
TPD49-4	R	Anderson	Evening Meeting Transcript (07/17/01)	A-239	A.1.7

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	No.	S	speaker or Author	Source	Page of Comment	Section(s) Where Addressed
1	TPD49-5	R	Anderson	Evening Meeting Transcript (07/17/01)	A-239	A.1.1
I	TPD49-6	R	Anderson	Evening Meeting Transcript (07/17/01)	A-239	A.1.2
I	TPD50-1	М	Oncavage	Evening Meeting Transcript (07/17/01)	A-240	A.1.4
I	TPD50-2	М	Oncavage	Evening Meeting Transcript (07/17/01)	A-240	A.1.17
I	TPD50-3	М	Oncavage	Evening Meeting Transcript (07/17/01)	A-241	A.1.17
I	TPD50-4	М	Oncavage	Evening Meeting Transcript (07/17/01)	A-241	A.1.14
1	TPD51-1	D	Peyton	Evening Meeting Transcript (07/17/01)	A-242	A.1.2
1	TPD51-2	D	Peyton	Evening Meeting Transcript (07/17/01)	A-242	A.1.8
ł	TPD51-3	D	Peyton	Evening Meeting Transcript (07/17/01)	A-242	A.1.1
I	TPD52-1	С	Doherty	Evening Meeting Transcript (07/17/01)	A-242	A.1.1
1	TPD52-2	С	Doherty	Evening Meeting Transcript (07/17/01)	A-243	A.1.14
ł	TPD52-3	С	Doherty	Evening Meeting Transcript (07/17/01)	A-242	A.1.14
I	TPD53-1	М	Richardson	Evening Meeting Transcript (07/17/01)	A-244	A.1.18
I	TPD53-2	М	Richardson	Evening Meeting Transcript (07/17/01)	A-244	A.1.2
١	TPD54-1	С	Broom	Evening Meeting Transcript (07/17/01)	A-245	A.1.1
1	TPD54-2	С	Broom	Evening Meeting Transcript (07/17/01)	A-245	A.1.1
l	TPD54-3	С	Broom	Evening Meeting Transcript (07/17/01)	A-245	A.1.18
1	TPD54-4	С	Broom	Evening Meeting Transcript (07/17/01)	A-246	A.1.2
ł	TPD55-1	W	Shomar	Evening Meeting Transcript (07/17/01)	A-247	A.1.2
l	TPD55-2	W	Shomar	Evening Meeting Transcript (07/17/01)	A-247	A.1.2
1	TPD55-3	W	Shomar	Evening Meeting Transcript (07/17/01)	A-247	A.1.14
1	TPD55-4	w	Shomar	Evening Meeting Transcript (07/17/01)	A-247	A.1.1
ł	TPD56-1	J	Randles	Evening Meeting Transcript (07/17/01)	A-248	A.1.2
I	TPD56-2	J	Randles	Evening Meeting Transcript (07/17/01)	A-248	A.1.19
I	TPD56-3	J	Randles	Evening Meeting Transcript (07/17/01)	A-248	A.1.15

 Table A-2.
 Turkey Point Units 3 and 4 SEIS Comment Log

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		Table A-	2. Turkey Point Units 3 and 4 SEIS Comm	ent Log	
No.		Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
TPD56-4	J	Randles	Evening Meeting Transcript (07/17/01)	A-249	A.1.14
TPD56-5	J	Randles	Evening Meeting Transcript (07/17/01)	A-249	A.1.14
TPD56-6	J	Randles	Evening Meeting Transcript (07/17/01)	A-249	A.1.2
TPD56-7	J	Randles	Evening Meeting Transcript (07/17/01)	A-250	A.1.19
TPD56-8	J	Randles	Evening Meeting Transcript (07/17/01)	A-250	A.1.2
TPD56-9	J	Randles	Evening Meeting Transcript (07/17/01)	A-250	A.1.2
TPD57-1	J	Balfe	Evening Meeting Transcript (07/17/01)	A-250	A.1.18
TPD57-2	J	Balfe	Evening Meeting Transcript (07/17/01)	A-250	A.1.4
TPD57-3	J	Balfe	Evening Meeting Transcript (07/17/01)	A-250	A.1.18
TPD57-4	J	Balfe	Evening Meeting Transcript (07/17/01)	A-250	A.1.17
TPD57-5	J	Balfe	Evening Meeting Transcript (07/17/01)	A-250	A.1.17
TPD57-6	J	Balfe	Evening Meeting Transcript (07/17/01)	A-251	A.1.18
TPD58-1	в	Anderson	Evening Meeting Transcript (07/17/01)	A-251	A.1.1
TPD58-2	в	Anderson	Evening Meeting Transcript (07/17/01)	A-252	A.1.1
TPD59-1	R	Rothschild	Evening Meeting Transcript (07/17/01)	A-252	A.1.2
TPD59-2	R	Rothschild	Evening Meeting Transcript (07/17/01)	A-253	A.1.14
TPD59-3	R	Rothschild	Evening Meeting Transcript (07/17/01)	A-253	A.1.14
TPD59-4	R	Rothschild	Evening Meeting Transcript (07/17/01)	A-254	A.1.17
TPD60-1	s	Collins	August 23, 2001, Letter	A-261	A.1.1
TPD60-2	s	Collins	August 23, 2001, Letter	A-261	A.1.8
TPD60-3	s	Collins	August 23, 2001, Letter	A-261	A.1.8
TPD60-4	s	Collins	August 23, 2001, Letter	A-261	A.1.8
TPD61-1	С	Gonzalez	July 30, 2001, Letter	A-262	A.1.8
TPD61-2	. C	Gonzalez	July 30, 2001, Letter	A-262	A.1.8
TPD61-3	С	Gonzalez	July 30, 2001, Letter	A-262	A.1.8

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	Table A-2.         Turkey Point Units 3 and 4 SEIS Comment Log							
	<u>No.</u>	S	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed		
	TPD62-1	т	Jones	August 27, 2001, Letter	A-264	A.1.2		
	TPD62-2	т	Jones	August 27, 2001, Letter	A-265	A.1.21		
	TPD62-3	т	Jones	August 27, 2001, Letter	A-265	A.1.14		
ļ	TPD62-4	т	Jones	August 27, 2001, Letter	A-265	A.1.21		
	TPD62-5	т	Jones	August 27, 2001, Letter	A-265	A.1.21		
	TPD62-6	Т	Jones	August 27, 2001, Letter	A-265	A.1.21		
	TPD62-7	т	Jones	August 27, 2001, Letter	<sup>-</sup> A-265	A.1.21		
1	TPD62-8	т	Jones	August 27, 2001, Letter	A-265	A.1.21		
	TPD62-9	Т	Jones	August 27, 2001, Letter	A-265	A.1.21		
	TPD62-10	T	Jones	August 27, 2001, Letter	A-265	A.1.21		
	TPD62-11	т	Jones	August 27, 2001, Letter	A-265	A.1.21		
	TPD62-12	т	Jones	August 27, 2001, Letter	A-265	A.1.21		
	TPD62-13	T	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-14	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-15	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-16	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-17	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-18	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-19	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-20	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-21	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-22	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-23	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-24	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
	TPD62-25	т	Jones	August 27, 2001, Letter	A-266	A.1.21		

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Table A-2.         Turkey Point Units 3 and 4 SEIS Comment Log							
No.		Speaker or Author	Source	Page of Comment	Section(s) Where Addressed		
TPD62-26	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
TPD62-27	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
TPD62-28	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
TPD62-29	т	Jones	August 27, 2001, Letter	A-266	A.1.21		
TPD62-30	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-31	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-32	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-33	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-34	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-35	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-36	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-37	T	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-38	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-39	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-40	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-41	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD62-42	т	Jones	August 27, 2001, Letter	A-267	A.1.21		
TPD63-1	E	Johnson	July 17, 2001, Letter	A-267	A.1.1		
TPD63-2	Ε	Johnson	July 17, 2001, Letter	A-267	A.1.2		
TPD63-3	Е	Johnson	July 17, 2001, Letter	A-267	A.1.14		
TPD63-4	Е	Johnson	July 17, 2001, Letter	A-267	A.1.14		
TPD63-5	Е	Johnson	July 17, 2001, Letter	A-267	A.1.14		
TPD63-6	Е	Johnson	July 17, 2001, Letter	A-267	A.1.2		
TPD63-7	·Ē	Johnson	July 17, 2001, Letter	A-267	A.1.2		
TPD63-8	Ε	Johnson	July 17, 2001, Letter	A-267	A.1.2		

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No.	Ş	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
TPD63-9	E	Johnson	July 17, 2001, Letter	A-267	A.1.1
TPD64-1	J	Lorion	September 6, 2001, Letter	A-268	A.1.4
TPD64-2	J	Lorion	September 6, 2001, Letter	A-268	A.1.18
TPD64-3	J	Lorion	September 6, 2001, Letter	A-268	A.1.12
TPD64-4	J	Lorion	September 6, 2001, Letter	· A-268	A.1.13
TPD64-5	J	Lorion	September 6, 2001, Letter	A-268	A.1.18
TPD64-6	J	Lorion	September 6, 2001, Letter	A-268	A.1.4
TPD64-7	J	Lorion	September 6, 2001, Letter	A-268	A.1.4
TPD64-8	J	Lorion	September 6, 2001, Letter	A-268	A.1.4
TPD64-9	J	Lorion	September 6, 2001, Letter	A-268	A.1.16
TPD64-10	J	Lorion	September 6, 2001, Letter	A-268	A.1.4
TPD64-11	J	Lorion	September 6, 2001, Letter	A-269	A.1.3
TPD64-12	J	Lorion	September 6, 2001, Letter	A-269	A.1.3
TPD64-13	J	Lorion	September 6, 2001, Letter	A-269	A.1.3
TPD64-14	J	Lorion	September 6, 2001, Letter	A-270	A.1.3
TPD64-15	J	Lorion	September 6, 2001, Letter	A-270	A.1.3
TPD64-16	J	Lorion	September 6, 2001, Letter	A-270	A.1.3
TPD64-17	J	Lorion	September 6, 2001, Letter	A-270	A.1.16
TPD64-18	J	Lorion	September 6, 2001, Letter	A-270	A.1.18
TPD64-19	J	Lorion	September 6, 2001, Letter	A-270	A.1.18
TPD64-20	J	Lorion	September 6, 2001, Letter	A-270	A.1.4
TPD64-21	J	Lorion	September 6, 2001, Letter	A-270	A.1.4
TPD64-22	J	Lorion	September 6, 2001, Letter	A-270	A.1.9
TPD64-23	J	Lorion	September 6, 2001, Letter	A-271	A.1.13
TPD64-24	J	Lorion	September 6, 2001, Letter	A-271	A.1.15

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### Table A-2. Turkey Point Units 3 and 4 SEIS Comment Log

		Table A	2. Turkey Point Units 3 and 4 SEIS Comme	nt Log	· · ·	1
No.	\$	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed	   
TPD64-25	J	Lorion	September 6, 2001, Letter	A-271	A.1.18	I
TPD64-26	J	Lorion	September 6, 2001, Letter	A-271	A.1.18	I
TPD64-27	J	Lorion	September 6, 2001, Letter	A-271	A.1.9	I
TPD64-28	J	Lorion	September 6, 2001, Letter	A-271	A.1.18	I
TPD64-29	J	Lorion	September 6, 2001, Letter	A-272	A.1.18	I
TPD64-30	J	Lorion	September 6, 2001, Letter	A-272	A.1.18	I
TPD64-31	J	Lorion	September 6, 2001, Letter	A-272	A.1.12	I
TPD64-32	J	Lorion	September 6, 2001, Letter	A-272	A.1.12	l
TPD64-33	J	Lorion	September 6, 2001, Letter	A-272	A.1.12	1
TPD64-34	J	Lorion	September 6, 2001, Letter	A-272	A.1.14	ł
TPD64-35	J	Lorion	September 6, 2001, Letter	A-273	A.1.14	1
TPD64-36	J	Lorion	September 6, 2001, Letter	A-273	A.1.12	I
TPD64-37	J	Lorion	September 6, 2001, Letter	A-273	A.1.9	I
TPD64-38	J	Lorion	September 6, 2001, Letter	A-273	A.1.9	I
TPD64-39	J	Lorion	September 6, 2001, Letter	A-273	A.1.4	I
TPD64-40	J	Lorion	September 6, 2001, Letter	A-273	A.1.3	I
TPD64-41	J	Lorion	September 6, 2001, Letter	A-271	A.1.16	ł
TPD64-42	J	Lorion	September 6, 2001, Letter	A-269	A.1.4	I
TPD65-1	М	Oncavage	January 31, 2001, Letter	A-274	A.1.18	I
TPD65-2	М	Oncavage	January 31, 2001, Letter	A-274	À.1.18	l
TPD65-3	М	Oncavage	January 31, 2001, Letter	A-275	A.1.18	I
TPD65-4	М	Oncavage	January 31, 2001, Letter	A-275	A.1.18	۱
TPD65-5	М	Oncavage	January 31, 2001, Letter	A-275	A.1.3	I
TPD65-6	М	Oncavage	January 31, 2001, Letter	A-275	A.1.18	1
TPD65-7	М	Oncavage	January 31, 2001, Letter	A-275	A.1.4	ł

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No.	S	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
TPD65-8	М	Oncavage	January 31, 2001, Letter	A-275	A.1.3
TPD65-9	М	Oncavage	January 31, 2001, Letter	A-275	A.1.3
TPD65-10	м	Oncavage	January 31, 2001, Letter	A-275	A.1.3
TPD66-1	F	Pitz	July 17, 2001, Letter	A-276	A.1.13
TPD66-2	F	Pitz	July 17, 2001, Letter	A-276	A.1.3
TPD66-3	F	Pitz	July 17, 2001, Letter	A-276	A.1.3
TPD66-4	F	Pitz	July 17, 2001, Letter	A-276	A.1.18
TPD66-5	F	Pitz	July 17, 2001, Letter	A-276	A.1.3
TPD66-6	F	Pitz	July 17, 2001, Letter	A-276	A.1.3
TPD66-7	F	Pitz	July 17, 2001, Letter	A-276	A.1.4
TPD66-8	F	Pitz	July 17, 2001, Letter	A-276	A.1.3
TPD67-1	R	Anderson	July 17, 2001, Letter	A-277	A.1.1
TPD67-2	R	Anderson	July 17, 2001, Letter	A-277	A.1.19
TPD67-3	R	Anderson	July 17, 2001, Letter	A-277	A.1.14
TPD67-4	R	Anderson	July 17, 2001, Letter	A-277	A.1.14
TPD67-5	R	Anderson	July 17, 2001, Letter	A-277	A.1.14
TPD67-6	R	Anderson	July 17, 2001, Letter	A-277	A.1.15
TPD67-7	R	Anderson	July 17, 2001, Letter	A-277	A.1.2
TPD68-1	В	Thompson	Handout from Public Meeting (07/17/01)	A-277	A.1.1
TPD68-2	В	Thompson	Handout from Public Meeting (07/17/01)	A-278	A.1.2
TPD68-3	в	Thompson	Handout from Public Meeting (07/17/01)	A-278	A.1.2
TPD68-4	В	Thompson	Handout from Public Meeting (07/17/01)	A-278	A.1.2
TPD68-5	в	Thompson	Handout from Public Meeting (07/17/01)	A-278	A.1.2
TPD68-6	в	Thompson	Handout from Public Meeting (07/17/01)	A-279	A.1.2
TPD68-7	В	Thompson	Handout from Public Meeting (07/17/01)	A-279	A.1.2

Table A-2. Turkey Point Units 3 and 4 SEIS Comment Log

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		Table A	-2. Turkey Point Units 3 and 4 SEIS Comm	ent Log	
No.	:	Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
<b>TPD68-8</b>	В	Thompson	Handout from Public Meeting (07/17/01)	A-279	A.1.9
TPD68-9	В	Thompson	Handout from Public Meeting (07/17/01)	A-279	A.1.9
TPD68-10	В	Thompson	Handout from Public Meeting (07/17/01)	A-280	A.1.2
TPD68-11	В	Thompson	Handout from Public Meeting (07/17/01)	A-280	A.1.1
TPD69-1	D	Moeller	Handout from Public Meeting (07/17/01)	A-286	A.1.9
TPD70-1	D	Peyton	Handout from Public Meeting (07/17/01)	A-287	A.1.1
TPD70-2	D	Peyton	Handout from Public Meeting (07/17/01)	A-287	A.1.14
TPD70-3	D	Peyton	Handout from Public Meeting (07/17/01)	A-287	A.1.19
TPD70-4	D	Peyton	Handout from Public Meeting (07/17/01)	A-287	A.1.2
TPD70-5	D	Peyton	Handout from Public Meeting (07/17/01)	A-287	A.1.19
TPD70-6	D	Peyton	Handout from Public Meeting (07/17/01)	A-287	A.1.1
TPD71-1	R	Andersen	Handout from Public Meeting (07/17/01)	A-289	A.1.7
TPD71-2	R	Andersen	Handout from Public Meeting (07/17/01)	A-289	A.1.14
TPD71-3	R	Andersen	Handout from Public Meeting (07/17/01)	A-289	A.1.17
TPD71-4	R	Andersen	Handout from Public Meeting (07/17/01)	A-290	A.1.2
TPD71-5	R	Andersen	Handout from Public Meeting (07/17/01)	A-290	A.1.2
TPD71-6	R	Andersen	Handout from Public Meeting (07/17/01)	A-290	A.1.2
TPD71-7	R	Andersen	Handout from Public Meeting (07/17/01)	A-290	A.1.1
TPD72-1	J	Mangano	Handout from Public Meeting (07/17/01)	A-294	A.1.9
TPD72-2	J	Mangano	Handout from Public Meeting (07/17/01)	A-294	A.1.12
TPD72-3	J	Mangano	Handout from Public Meeting (07/17/01)	A-294	A.1.9
TPD72-4	J	Mangano	Handout from Public Meeting (07/17/01)	A-294	A.1.9
TPD72-5	J	Mangano	Handout from Public Meeting (07/17/01)	A-294	A.1.9
TPD72-6	J	Mangano	Handout from Public Meeting (07/17/01)	A-296	A.1.9
TPD72-7	J	Mangano	Handout from Public Meeting (07/17/01)	A-297	A.1.9

Table A-2. Turkey Point Units 3 and 4 SEIS Comment Log

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<u> </u>	Table A-2.         Turkey Point Units 3 and 4 SEIS Comment Log							
_No.	Speaker or Author		Source	Page of Comment	Section(s) Where Addressed			
TPD72-8	J	Mangano	Handout from Public Meeting (07/17/01)	A-298	A.1.9			
TPD72-9	J	Mangano	Handout from Public Meeting (07/17/01)	A-298	A.1.9			
TPD72-10	J	Mangano	Handout from Public Meeting (07/17/01)	A-298	A.1.9			
TPD72-11	J	Mangano	Handout from Public Meeting (07/17/01)	A-298	A.1.9			
TPD72-12	J	Mangano	Handout from Public Meeting (07/17/01)	A-298	A.1.9			
TPD72-13	J	Mangano	Handout from Public Meeting (07/17/01)	A-298	A.1.9			
TPD72-14	J	Mangano	Handout from Public Meeting (07/17/01)	A-298	A.1.9			
TPD72-15	J	Mangano	Handout from Public Meeting (07/17/01)	A-298	A.1.9			
TPD72-16	J	Mangano	Handout from Public Meeting (07/17/01)	A-299	A.1.9			
TPD72-17	J	Mangano	Handout from Public Meeting (07/17/01)	A-299	A.1.9			
TPD72-18	J	Mangano	Handout from Public Meeting (07/17/01)	A-299	A.1.9			
TPD72-19	J	Mangano	Handout from Public Meeting (07/17/01)	A-300	A.1.9			
TPD72-20	J	Mangano	Handout from Public Meeting (07/17/01)	A-300	A.1.9			
TPD72-21	J	Mangano	Handout from Public Meeting (07/17/01)	A-300	A.1.9			
TPD72-22	J	Mangano	Handout from Public Meeting (07/17/01)	A-300	A.1.9			
TPD73-1	Α	Penelas	Handout from Public Meeting (07/17/01)	A-308	A.1.1			
TPD73-2	Α	Penelas	Handout from Public Meeting (07/17/01)	A-308	A.1.19			
TPD73-3	Α	Penelas	Handout from Public Meeting (07/17/01)	A-308	A.1.2			
TPD73-4	А	Penelas	Handout from Public Meeting (07/17/01)	A-308	A.1.15			
TPD73-5	А	Penelas	Handout from Public Meeting (07/17/01)	A-308	A.1.14			
TPD73-6	А	Penelas	Handout from Public Meeting (07/17/01)	A-308	A.1.14			
TPD74-1	L	Anthony	Handout from Public Meeting (07/17/01)	A-308	A.1.2			
TPD74-2	L	Anthony	Handout from Public Meeting (07/17/01)	A-309	A.1.1			
TPD75-1	L	Anthony	Handout from Public Meeting (07/17/01)	A-309	A.1.1			
TPD75-2	L	Anthony	Handout from Public Meeting (07/17/01)	A-309	A.1.2			

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No.		Speaker or Author	Source	Page of Comment	Section(s) Where Addressed
TPD75-3	L	Anthony	Handout from Public Meeting (07/17/01)	A-309	A.1.15
TPD75-4	Ľ	Anthony	Handout from Public Meeting (07/17/01)	A-310	A.1.2
TPD75-5	L	Anthony	Handout from Public Meeting (07/17/01)	A-310	A.1.1
TPD76-1	J	Randles	Handout from Public Meeting (07/17/01)	A-310	A.1.1
TPD76-2	J	Randles	Handout from Public Meeting (07/17/01)	A-310	A.1.2
TPD76-3	J	Randles	Handout from Public Meeting (07/17/01)	A-310	A.1.14
TPD76-4	J	Randles	Handout from Public Meeting (07/17/01)	A-310	A.1.19
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TPD76-6	J	Randles	Handout from Public Meeting (07/17/01)	A-310	A.1.15
TPD76-7	J	Randles	Handout from Public Meeting (07/17/01)	A-311	A.1.2
TPD76-8	J	Randles	Handout from Public Meeting (07/17/01)	A-311	A.1.1
TPD77-1	D	Johnson	July 17, 2001, Letter	A-311	A.1.9
TPD78-1	н	Mueller	August 27, 2001, Letter	A-320	A.1.10
TPD78-2	Н	Mueller	August 27, 2001, Letter	A-320	A.1.20
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TPD78-5	н	Mueller	August 27, 2001, Letter	A-321	A.1.15
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TPD78-9	H	Mueller	- August 27, 2001, Letter	A-321	A.1.20
TPD78-10	1 H	Mueller	August 27, 2001, Letter	A-321	A.1.10
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 Table A-2.
 Turkey Point Units 3 and 4 SEIS Comment Log

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# A.1 Comments and Responses

### A.1.1 General Comments in Support of License Renewal at Turkey Point Units 3 and 4

**Comment:** Commissioner Moss supports Turkey Point Power Plant renewal. (TPD09-1)

**Comment:** The City of Homestead supports FP&L and their relicensing. (TPD10-6)

**Comment:** I support Turkey Point Nuclear Plant license renewal application. (TPD12-7)

Comment: Renewing the licenses of Turkey Point Nuclear Power Plant is in the best interest
 of the community and in continuing to provide safe, clean, reliable and low cost electricity to
 customers. (TPD14-15)

Comment: The Dade County Farm Bureau stands unanimously in support of Florida Power
 and Light's relicensing efforts for their Turkey Point Plant. (TPD24-1)

Comment: Despite the loss of revenue sources from other areas, agriculture still is the main
 engine of Dade County, Florida, and we find no reason not to support FPL's relicensing of
 Turkey Point. (TPD24-3)

**Comment:** On behalf of the Vision Council we wish to register our support for the relicensing of the Turkey Point Nuclear Power Plant. (TPD27-1)

**Comment:** I'm here today to speak in favor of the twenty year license renewal and continued operation of the Turkey Point nuclear facility. (TPD28-1)

Comment: 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.
 (TPD28-9)

Comment: 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.
 (TPD30-3)

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**Comment:** I hope you will take your own reports, your own analysis and grant the license renewal here. (TPD31-3)

**Comment:** I'm here to show my support for the renewal of the license of the Turkey Point facility. (TPD37-1)

**Comment:** With the experts they have that know their field, I say let it go, give them the license renewal and go on from there. (TPD38-2)

**Comment:** 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. (TPD39-1)

**Comment:** So please continue and I hope the NRC finds favorably for license renewal. (TPD42-4)

**Comment:** 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. (TPD42-5)

**Comment:** 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. (TPD43-1)

**Comment:** I believe the report reflects a comprehensive assessment of the environmental impacts of license renewal. (TPD43-2)

**Comment:** 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. (TPD43-9)

**Comment:** I believe extending our operations is more than renewing our license. It's about renewing the future of South Florida. (TPD44-5)

**Comment:** 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. (TPD49-5)

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Comment: 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. (TPD51-3)

I Comment: We strongly support Turkey Point's application for license renewal. (TPD52-1)

Comment: I endorse the license extension of the Turkey Point 3 and 4 and why, because in
 my view power plants are a national resource. (TPD54-1)

Comment: 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. (TPD54-2)

Comment: It has been proven and documented time and time again that nuclear energy is
 unquestionably the safest and the most efficient effective and environmentally friendly means of
 producing electricity. (TPD55-4)

Comment: 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. (TPD58-1)

**Comment:** This is a wonderful system we have here. We're relying on the NRC to technically 1 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 1 this country and when you go spend some time in some of these dismal places in Eastern l Europe, the gentleman talked about being stuck in an elevator, it happens. And you greatly 1 1 appreciate the process that we have here and the regulation that we have here and the I 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 1 they live in, the cars they drove and what the power was and what got sprayed around their 1 neighborhood. (TPD58-2)

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**Comment:** 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. (TPD60-1)

**Comment:** I strongly support the Turkey Point Re-licensing effort. (TPD63-1)

**Comment:** I believe strongly that the re-license should be granted. (TPD63-9)

**Comment:** On behalf of the Vision Council, we wish to register our support for the relicensing of the turkey Point Nuclear Power Plant. (TPD67-1)

**Comment:** I am here today to speak in favor of the twenty-year license renewal and continued operation of the Turkey Point Nuclear Facility (TPD68-1)

**Comment:** For these reasons, and in closing, I am asking that the license renewal for the Turkey Point Nuclear Facility be approved (TPD68-11)

**Comment:** 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. (TPD70-1)

**Comment:** 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. (TPD70-6)

**Comment:** 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. (TPD71-7)

**Comment:** I am pleased with the NRC 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 (TPD73-1)

**Comment:** I support and endorse the relicensure of the units at Turkey Point. (TPD74-2)

**Comment:** We extend our support and endorsement of the FPL application for license renewal. (TPD75-1)

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Comment: We recommend the relicensure of FPL when their current license expires.
 (TPD75-5)

Comment: Voice my support for the Turkey Point license renewal (TPD76-1)

Comment: I support the renewal of the Turkey Point license for safe, clean and affordable
 electricity. (TPD76-8)

Response: The comments are noted. The comments are supportive of license renewal at
 Turkey Point Units 3 and 4. The comments provide no new information, therefore, the
 comments will not be evaluated further. There was no change to the SEIS text.

### A.1.2 General Comments in Support of Turkey Point Units 3 and 4

Comment: There is a lot of mis-information being pumped into the public. This is not fair tothe public. (TPD25-8)

Comment: 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.
(TPD25-9)

Response: The comments are noted. The comments refer to the RPHP report. The
 comments provide no new information and, therefore, will not be evaluated further. There was
 no change to the SEIS text.

Comment: The preservation of the site and the species present there will continue during therenewed operating license period. (TPD15-6)

Response: The comment is noted. The comment acknowledges the importance of the
manner in which FPL operates the site to the benefit of wildlife, including threatened and
endangered species (see Section 4.6). The appropriate descriptive information regarding the
plant-specific ecology of the site is addressed in Sections 2.1 and 2.2 of the SEIS. The
comment is noted. The comment is supportive of license renewal at Turkey Point Units 3 and
4, and is general in nature. The comment provides no new information, therefore, the comment
will not be evaluated further. There was no change to the SEIS text.

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**Comment:** I'm here today to speak in favor of Turkey Point. (TPD10-1)

**Comment:** Both the Mayor and I have read the Draft Supplemental Environmental Impact Statement and we are very comfortable. (TPD11-1)

**Comment:** Turkey Point nuclear is one of the safest and best run nuclear plants. (TPD11-2)

**Comment:** 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. (TPD12-1)

**Comment:** 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. (TPD12-3)

**Comment:** 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. (TPD13-1)

**Comment:** The alternatives to continued operation of the plant and the reports do not appear to be economically or environmentally effective. (TPD13-2)

**Comment:** 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. (TPD13-3)

**Comment:** The Turkey Point plant is safe and has a positive impact on the environment. (TPD14-1)

**Comment:** There is a strong case for continued operation of the Turkey Point plant. (TPD14-2)

**Comment:** 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. (TPD15-1)

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1 Comment: The United Way is extremely proud of its partnership with FPL in providing services I for those in need in our community. (TPD23-6)

**Comment:** FPL is a good neighbor. (TPD25-1)

I Comment: You could find a reason to shut down Turkey Point tomorrow. Would that serve a purpose? Would that be in the best interest of the community? No. (TPD25-3) 1

1 **Comment:** 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 1 1 capacity. (TPD27-4)

**Comment:** The nuclear power plant industry has a proven security record and the safeguards 1 and security required at such installations should be known. (TPD27-7) 

1 Comment: 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 1 1 vicinity to the plant. (TPD27-8)

I Comment: On Florida Power and Light property we have what is known as a Join Safety Program, which program through committees insures both the company and union have an 1 equal say to provide for the safety of the employees, safe plan operation, safety to the public 1 1 and environmental protection. (TPD28-2)

**Comment:** The Turkey Point facility has consistently been recognized as being one of the I safest and most reliable nuclear power plants both in the United States and in the world. (TPD28-3) 

1 **Comment:** 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 I . 1994 through 1999. (TPD28-4) 1

**Comment:** In the area of training, both the company and the union have developed and consistently oversee some of the most vigorous training programs within the company for its 1 employees. All employees are also trained on a regular basis for even the unlikely event of an 1 emergency. (TPD28-5)

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**Comment:** Environmentally, the plant must meet very strict and stringent radiation safety standards designed to protect the employees and insure the community health and safety. (TPD28-6)

**Comment:** The employees of Turkey Point nuclear facility and the company have established themselves as good stewards of our environment. They manage to achieve a careful balance between the environment and producing a very cost effective, clean, safe and reliable source of electricity that is possible at all times. (TPD28-8)

**Comment:** The Homestead Air Reserve Station endorses Turkey Point. (TPD30-1)

**Comment:** I reaffirm my support for Turkey Point. (TPD35-1)

**Comment:** The safe operations of the facility out there just continue to be in the foresight on a day in/day out basis. (TPD36-1)

**Comment:** The continued support of this facility of Turkey Point to the City (of Homestead) is just great and needed very much. (TPD36-3)

**Comment:** But I'm here as a concerned citizen in support of FP&L and Turkey Point. (TPD41-1)

**Comment:** 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. (TPD41-4)

**Comment:** 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. (TPD42-1)

**Comment:** And when I look at the evidence presented in the Supplemental Environmental Impact Statement and other license renewal document, I'm assured of the plant's safety and positive impact on our environment. (TPD43-3)

**Comment:** 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. (TPD43-4)

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! Comment: We're committed to safely and reliably operating the Turkey Point power plant long 1 into the future to meet the area's energy needs while protecting the environment. (TPD44-6)

1 **Comment:** 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. (TPD49-6)

**Comment:** I like electricity. I like the people who make electricity. I think electricity is a good thing. (TPD51-1)

I Comment: 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 1 felt very comfortable that it can be done safely and it will continue to generate low cost. 1 1 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 1 I Greater South Dade area. (TPD53-2)

**Comment:** When you walk to the Turkey Point plant, from the security guard that meets you, 1 to the radiation control technicians who escort you around, to the project managers and to the facility managers, you find 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. (TPD54-4)

**Comment:** 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 I 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. (TPD55-1)

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**Comment:** 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. (TPD55-2)

**Comment:** Eighteen years ago, I came 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. (TPD56-1)

**Comment:** 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 came down to Florida and started working for FP&L. 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. (TPD56-6)

**Comment:** 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 do that. (TPD56-8)

**Comment:** 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. (TPD56-9)

**Comment:** 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. (TPD59-1)

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**Comment:** FPL agrees with all of the conclusions and proposed findings in the DSEIS. I (TPD62-1)

**Comment:** Turkey Point has been an excellent neighbor, as witnessed by myself, my company and community. (TPD63-2)

Comment: Turkey Point has an excellent environmental record. It has been demonstrated 1 over the years with their strong commitment to the environment, which is represented by their support of the South Florida Ecosystem, and demonstrated most assuredly by their safety record. (TPD63-6)

Comment: They are rated as one of the most reliable nuclear power plants in the United 1 States and have consistently had "superior" ratings from the regulators, you - the NRC. 1 I (TPD63-7)

1 Comment: Never have I had any alarm or concern as a result of the Power Plant's location, I but only found them to be quiet, outstanding neighbor that serves the local community, and beyond. (TPD63-8)

**Comment:** Thousands upon thousands of South Florida residents are confident of the plant's 1 safety (TPD67-7)

**Comment:** 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. (TPD68-2)

**Comment:** Turkey Point has been consistently recognized as being: One of the safest and most reliable nuclear power plants in both the United States and the World. (TPD68-3)

**Comment:** Turkey Point has been consistently recognized as being: The only nuclear power 1 plant in the U.S. to receive three consecutive superior ratings from its regulator the Nuclear Regulatory Commission, spanning the years of 1994-1999. (TPD68-4)

**Comment:** Safety performance indicators consistently in the top percentile of Nuclear Plants throughout the U.S. (TPD68-5)

**Comment:** The "Quest for Excellence" award from an independent assessor in 1995, 1998. and 2000 for excellence in Nuclear Plant performance. (TPD68-6)

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**Comment:** In the area of training, both the Company and the Union have developed and constantly oversee some of the most rigorous training programs within the Company for its employees. (TPD68-7)

**Comment:** Over the past twenty-eight 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. (TPD68-10)

**Comment:** Since 1995, Turkey Point is the only nuclear plant in the nation to consistently achieve the highest performance rating from the Nuclear Regulatory Commission (TPD70-4)

**Comment:** It's obvious from these figures that nuclear energy provides vital clean air benefits to Florida and the U.S., 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. (TPD71-4)

**Comment:** 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. (TPD71-5)

**Comment:** 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. (TPD71-6)

**Comment:** 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. (TPD73-3)

**Comment:** 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. (TPD74-1)

**Comment:** FPL has not operated detrimentally to the environment even in their periods of heavy power generation. (TPD75-2)

**Comment:** 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. (TPD75-4)

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**Comment:** Plant provides: a wild life reserve, power for our homes, a cleaner environment, 1 jobs to support the community, support for hundreds of business in the way of jobs and material I that is purchased, cheaper electrical bills (TPD76-2)

**Comment:** Turkey Point is rated as one of the safest and most reliable nuclear power plants in the U.S. and world. (TPD76-7)

Response: The comments are noted. The comments are supportive of license renewal at Turkey Point Units 3 and 4. The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

A.1.3 Comments in Opposition to License Renewal at Turkey Point Units 3 and 4

Comment: The Generic Environmental Impact Statement published in 1996 is obsolete in light of much more recent study. (TPD21-4)

Response: The comment is noted. All analyses conducted for Supplemental EISs include l ensuring that potential new and significant information has been identified and reviewed. The purpose of the scoping process is to help identify new and significant information and issues that were not addressed or addressed incorrectly in the GEIS. No such information was 1 identified during the Turkey Point relicensing environmental review. The comment provides no new and significant information and, therefore, will not be evaluated further. There was no 1 change to the SEIS text.

**Comment:** 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 1 reports and significant research in progress on nuclear reactor emissions and public health. (TPD21-5)

1 **Response:** The comment is noted. Radiation exposures to the public during the license renewal term is a Category 1 issue that was evaluated in the GEIS. Public doses from Turkey Point emissions were specifically evaluated in Section 4.6 of the GEIS, using data from monitored emissions and ambient monitoring. The comment does not provide new information and, therefore, will not be evaluated further. There was no change to the SEIS text.

**Comment:** Leave this license in place until its original expiration date and then come back to the people and talk about renewal. No relicensing at this time. (TPD22-4)

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**Response:** The comment is noted. The 10 year lead time is needed to allow planning for power generation alternatives. The comment provides no new information and therefore will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. (TPD32-1)

**Comment:** I hope the Commission will carefully consider the statement made by one of the speakers, who questioned the validity of the statistical methodology used in the General Environmental Impact Statement. (TPD32-4)

**Comment:** Renewal of an operating license for the Turkey Point Nuclear Power plants is identified under 10 CFR 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. (TPD64-12)

**Comment:** In closing, it is my contention that the NRC's Draft GEIS does not support the premature 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. (TPD64-40)

**Response:** The comments are noted. The comments provide no new information and, therefore, will not be evaluated further. There was no change to the SEIS text.

**Comment:** I don't think you've complied with either the spirit or the intent of the National Environmental Policy Act. (TPD34-15)

**Comment:** No, to relicensing. (TPD66-8)

**Comment:** 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

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1 under 10 CFR. Parts 51, while simultaneously conducting relicensing activities under 10 CFR. 1 Part 54. (TPD64-13)

1 **Comment:** The NRC's Draft GEIS process, which was conducted concurrent with the relicensing process, fails to meet NEPA requirements that an environmental impact assessment 1 must be "prepared early by such an agency...so that it can serve practically as an important 1 1 contribution to the decision-making process and will not be used to rationalize or justify 1 decisions already made." 40 CFR. 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 1 1 construction permit and operating license and that the range of alternatives, or their analysis, 1 should not be limited. (TPD64-14)

1 **Comment:** Section 1502.2 states that, "agencies shall not commit resources prejudicing 1 selection of alternatives before making a final decision (1506.1)." 40 CFR. 1502.2(f). The Commission's conducting of the relicensing review under 10 CFR. Part 54, while at the same I 1 time averring to conduct an objective NEPA process under 10 CFR. Part 51, raises a serious 1 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 1 NEPA? Or will the Commission's EIS process, in the words of one Judge in another NEPA 1 case, "be a classic Wonderland case of first-the-verdict, then the trial? See, Metcalf v. Daley, 1 214 F.3d(9th Cir. 2000). It is my contention that the Draft GEIS is fatally defective and does not 1 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. (TPD64-15) 1

**Response:** The comments are noted. The NRC's obligations under NEPA are to analyze I. environmental impacts and draft an EIS that the Commission can use in making a decision 1 regarding relicensing. Those obligations are different from the NRC's mission as stated in the 1 Atomic Energy Act (AEA), which are to protect public health and safety, and provide for the 1 common defense and security. The NRC makes a decision on relicensing after the staff has provided the Commission with the necessary analyses and documentation required under both NEPA and the AEA. 

1 The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

**Comment:** Like all federal agencies, the NRC is required to implement the policies of NEPA in 1 its decision-making. See 42 U.S.C. 4332; 40 CFR. 1507.1. NEPA requires the NRC to prepare a detailed statement, known as an Environmental Impact Statement (EIS) prior to any "major I 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 1

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to evaluate the consequences of this major federal action prior to commencing the relicensing process under 10 CFR 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. (TPD64-11)

. . .

**Comment:** 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 CFR. 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 CFR. 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. (TPD64-16)

**Response:** The comments are noted. The environmental review process, which is set forth in 10 CFR Part 51, implements the National Environmental Policy Act of 1969 (NEPA). This process provides for the preparation of generic environmental impact statements to avoid the time and expense of repeated reviews of essentially the same material. When an environmental issue has been resolved generically, there is no need to conduct another detailed review of the same issue with respect to a particular application unless there is significant new information related to some aspect of the issue. The technical bases that were considered in developing the GEIS included environmental insights gained from thousands of reactor-years of operating experience, including Turkey Point Units 3 and 4. It addresses and draws generic conclusions on 69 environmental issues associated with license renewal. These are Category 1 issues. The NRC staff reviews all of the information it collects for its review, including public comments collected during the scoping phase, to determine whether there is any new and significant information related to the Category 1 issues. If new and significant information is identified, the NRC staff will evaluate the impacts related to that information. The NRC staff performs site-specific analysis for all of the Category 2 and noncategorized issues that are applicable to each plant that applies for license renewal. There was no change to the SEIS text.

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1 Comment: How can the NRC ignore its own Standard Review Plan? (TPD65-5)

1 Response: The comment is noted. The comment refers to siting hazards and is outside the 1 scope of license renewal. The staff conducted an independent review of the issues as set forth I in NUREG-1555, Supplement 1, the Standard Review Plans for Environmental Reviews for 1 Nuclear Power Plants, Supplement 1: Operating License Renewal. This issue has been referred to the appropriate program office within the NRC. There was no change to the SEIS text.

1 **Comment:** Shouldn't the lead agency for base disposal, the Air Force, be told that there are major safety discrepancies with the NRC methodology concerning the closeness of the 1 proposed commercial airport to the nuclear plant? (TPD65-8)

I Response: The comment is noted and is outside the scope of license renewal. The issue is 1 referred to the appropriate program office within the NRC. It does not add any new information. There was no change to the SEIS text.

**Comment:** 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. 1 (TPD65-9)

**Comment:** Another conflict of interest may arise if the licensee thinks that a negative safety assessment would damage its chances of obtaining a license renewal. (TPD65-10)

**Comment:** 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. (TPD66-5)

**Response:** The comments are noted and are outside the scope of license renewal. They do not add any new information. There was no change to the SEIS text.

1 **Comment:** 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. (TPD66-2)

**Response:** The comment is noted. To the extent that the comment pertains to aging within the scope of license renewal, these issues will be addressed during the parallel safety analysis review performed under 10 CFR Part 54. Aging management issues are outside the scope of 10 CFR Part 51 and will not be evaluated further in this SEIS. The comment provides no new information and, therefore, will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. (TPD66-3)

**Comment:** Leave this license in place until its original expiration date, then come back to the people and talk about renewal. (TPD66-6)

**Response:** The comments are noted. The NRC allows licensees to conduct relicensing analyses before the current operating licenses expire because of the long lead time necessary to replace major power generation. There was no change to the SEIS text.

#### A.1.4 Comments in Opposition to Turkey Point Units 3 and 4

**Comment:** 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 complies with the National Environmental Policy Act. (TPD34-6)

**Response:** The comment is noted. The NRC's obligations under NEPA are to analyze environmental impacts and draft an EIS that the Commission can use in making a decision regarding relicensing. Those obligations are different from the NRC's mission as stated in the Atomic Energy Act (AEA), which are to protect public health and safety, and provide for the common defense and security. The NRC makes a decision on relicensing after the staff has provided the Commission with the necessary analyses and documentation required under both NEPA and the AEA.

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The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. (TPD47-1)

**Response:** The comment is noted. The comment is against license renewal for Turkey Point Units 3 and 4. The comment provides no new information and will not be evaluated further. There was no change to the SEIS text.

L **Comment:** The other thing I wanted to say as a mathematician, this generic study takes, from 1 what I've been told, it takes about 102, the data from 102 power plants, and adds up the ł 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 1 more birds flying there than there would be in some other part of the United States where there 1 are not that many birds and maybe -- that's just an example. But us people here in Homestead 1 and in South Florida would be very concerned about the number of birds that would be flying 1 I 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. (TPD47-4)

**Response:** The comment is noted. This comment requests a site specific analysis because L the commenter assumes that impacts are averaged across all licensed plants. Neither the GEIS nor this SEIS express results in terms of averages across the country in the manner noted by the commenter. The environmental review process provides for the preparation of generic environmental impact statements to avoid the time and expense of repeated reviews of essentially the same material. When an environmental issue has been resolved generically, Ł l there is no need to conduct another detailed review of the same issue with respect to a particular application unless there is significant new information related of the issue. The ľ technical bases that were considered in developing the GEIS included environmental insights 1 gained from thousands of reactor-years of operating experience, including Turkey Point Units 3 L and 4. It addresses and draws generic conclusions on 69 environmental issues associated with 1 1 license renewal. These are Category 1 issues. The NRC staff reviews all of the information it L collects for its review, including public comments received during the scoping phase, to

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determine whether there is any new and significant information related to the Category 1 issues. If new and significant information is identified, the NRC staff will evaluate the impacts related to that information. The NRC staff performs site-specific analysis for all of the Category 2 and noncategorized issues that are applicable to each plant that applies for license renewal. The comment doe not provide any new information. There was no change to the SEIS text.

**Comment:** 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 not 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. (TPD50-1)

**Response:** The comment is noted. The staff reviewed the report from the Energy Study Commission, and found nothing to change staff's analysis and conclusions contained in the SEIS. There was no change to the text of the SEIS.

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**Comment:** 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. (TPD57-2)

**Response:** The comment was noted. Definitions of impact levels were provided in Section 4.0 of the SEIS. There was no change to the SEIS text.

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Comment: These cumulative impacts [from released fission products], which should have
been analyzed in a site-specific SEIS, have not been adequately addressed in the Draft GEIS;
as required by NEPA. (TPD64-6)

1 **Response:** The comment is noted. Radiological effluents, including those into the Turkey Ł Point cooling canals and the resulting radiation exposure to the public and workers were 1 evaluated in the GEIS and determined to be a Category 1 issue. Additionally, Florida Power 1 and Light monitors both gaseous and liquid effluents released from the reactors and maintains an offsite dose calculation manual (ODCM) that describes the methodology and parameters that are used in the prediction of potential offsite doses from radioactive liquid and gaseous 1 1 effluents. These calculations are performed to demonstrate the licensee's compliance with its 1 technical specifications and NRC regulations. The State of Florida also provides environmental 1 monitoring around the Turkey Point Site to ensure that effluent releases are within or below 1 regulatory limits. No new information was provided by the comment. Therefore, the comment will not be evaluated further. There was no change to the SEIS text. 1

Comment: 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 produces, are SMALL. (TPD64-7)

Response: The comment is noted. Rooftop solar applications are discussed in Section 8.2.6.2
of the SEIS. Section 8.2.6.2 concludes that implementation of solar technologies on a scale
large enough to replace Turkey Point Units 3 and 4 would likely result in LARGE environmental
impacts. The text in Section 8.2.6.2 has been editorially modified for clarity. Environmental
issues associated with nuclear waste are Category 1 issues. NRC's findings for issues related
to the uranium fuel cycle and waste management are set out in 10 CFR, Subpart A, Appendix
B, Table B-1. There was no change to the SEIS text.

Comment: 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 CFR. Part 54 of the relicensing process. Despite the fact, that these substantial environmental issues 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. (TPD64-10)

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**Response:** The comment is noted. Section 4.7 contains discussion of all new and potentially significant issues that were raised during the scoping process. In addition, NRC specifically consulted with the US Army Corps of Engineers regarding potential impacts on or conflicts with the Everglades restoration efforts. They did not identify any concerns regarding relicensing of Turkey Point Units 3 and 4, therefore the staff concluded there was no new and significant information with regard to the south Florida ecosystem. There was no change to the SEIS text.

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**Comment:** 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 redevelopment of the Homestead Air Base site within five miles of the plant (TPD64-20)

**Response:** The comment is noted. Evaluation of site hazard issues, such as the Homestead Air Force Base, is part of the current licensing basis and is beyond the scope of the SEIS. There was no change to the SEIS text.

**Comment:** 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. (TPD64-1)

**Comment:** 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 siting of a school two miles from the plant. (TPD64-21)

**Response:** The comments are noted. The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

**Comment:** The power that we get from Turkey Point can easily be replaced by more environmentally benign sources 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"

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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.) (TPD64-39) 1

**Response:** The comment is noted. Alternatives and their impacts were evaluated in Section 8. The comment did not provide new information. There was no change to the SEIS text.

1 **Comment:** 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 1 EIS, not this generic EIS. (TPD34-11)

**Comment:** The NRC has conducted a Generic Environmental Impact Statement (GEIS), 1 rather than a site-specific SEIS that should have reviewed the original Turkey Point. 1 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 1 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 CFR. Part 51, so that it could conduct an environmental analysis 1 concurrent with a relicensing process. The NRC NEPA process appears to be designed to "end 1 run" NEPA and "rubber stamp" the relicensing decision, and does not allow a meaningful choice among alternatives. (TPD64-42)

1 **Comment:** The Draft GEIS for the License Renewal of the Turkey Point Nuclear Power Plants 1 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 1 Policy Act (NEPA). The NRC's failure to prepare a full and objective site-specific Environmental 1 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 1 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. (TPD64-8) 1

Response: The comments are noted. The environmental review process, which is set forth in l 10 CFR Part 51, implements the National Environmental Policy Act of 1969 (NEPA). This process provides for the preparation of generic environmental impact statements to avoid the time and expense of repeated reviews of essentially the same material. When an E 1 environmental issue has been resolved generically, there is no need to conduct another detailed review of the same issue with respect to a particular application unless there is 1

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significant new information related to the issue. The technical bases that were considered in developing the GEIS included environmental insights gained from thousands of reactor-years of operating experience, including Turkey Point Units 3 and 4. It addresses and draws generic conclusions on 69 environmental issues associated with license renewal. These are Category 1 issues. The NRC staff reviews all of the information it receives for its review, including public comments collected during the scoping phase, to determine whether there is any new and significant information related to the Category 1 issues. If new and significant information is identified, the NRC staff will evaluate the impacts related to that information. The NRC staff performs site-specific analysis for all of the Category 2 and noncategorized issues that are applicable to each plant that applies for license renewal. The comments do not provide new information. There was no change to the SEIS text.

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**Comment:** How can a citizen, concerned for his own safety, get information that's exclusively held by the licensee? (TPD65-7)

**Response:** The comment is noted and is outside the scope of license renewal. The issue is referred to the appropriate program office within the NRC. It does not add any new information. There was no change to the SEIS text.

**Comment:** For the sake of political opportunism you would further endanger the health of residents of south Florida. (TPD66-7)

**Response:** The comment is noted. To renew the license for the facility, the staff has to make a determination that the activities authorized by the renewed license will continue to be conducted in accordance with the current licensing basis and that any changes to the current licensing basis are in accordance with the Atomic Energy Act and the Commission's regulations. Therefore, the plant will not be relicensed unless the NRC concludes that it can be operated safely. There was no change to the SEIS text.

#### A.1.5 Comments Concerning Category 1 Water Quality Issues

**Comment:** 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 comments on NPDES requirements is not specific ("...and are not under the jurisdiction of the NRC"). Known permit requirements should be addressed in the FGSEIS. (TPD78-7)

**Response:** The comment is noted. The statement on page A-28 has been changed to reference Section 2.2.3 as the location of a description of the NPDES permit. The description

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of the permit has been revised to include the requirements of the permit as they relate to water quality.

#### A.1.6 **Comments Concerning Category 1 Socioeconomic Issues**

1 **Comment:** Nothing in the handout, "Preliminary Results of Environmental Review of Turkey I Point Units 3 and 4," or the discussion indicated that the looming shortage of technical and 1 scientific personnel in the nuclear industry had been addressed in the general environmental impact statement. 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 1 1 numbers of properly trained workers are essential to the operation of the industry as a whole L 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 1 have been fewer and fewer. What steps has FP&L taken and what steps will it take to ensure 1 adequate numbers of workers under such industry-wide conditions? (TPD32-2)

**Response:** The comment is noted. The Commission's regulations and the plant's license identify critical staff positions for the plant. Experience, training, and qualifications for these critical positions are specified. The NRC will suspend operations of any plant if it cannot meet these requirements. The comment provides no new information, therefore, the comment will I not be evaluated further. There was no change to the SEIS text.

#### A.1.7 **Comments Concerning Category 1 Air Quality Issues**

**Comment:** Turkey Point can continue to produce clean electricity without air pollution or greenhouse gases. (TPD14-12)

**Comment:** Clean air is important to the neighbors of Turkey Point. Turkey Point provides this benefit. (TPD15-3)

**Comment:** Nuclear power doesn't contribute to the greenhouse effect. It doesn't pollute. (TPD25-5)

**Comment:** The company consistently monitors the air and water quality around the plants and surrounding communities to insure these standards are maintained. (TPD28-7)

1 **Comment:** We have been told by our neighbors that clean energy is important to them and we believe Turkey Point provides that benefit. (TPD44-1)

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**Comment:** 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. (TPD49-1)

**Comment:** It's obvious from these figures that nuclear energy provides 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. (TPD49-4)

**Comment:** 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. (TPD71-1)

**Response:** The comments are noted. The comments are supportive of license renewal at Turkey Point Units 3 and 4. The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

#### A.1.8 Comments Concerning Category 1 Land Use Issues

**Comment:** Turkey Point placed over 14, 000 acres of sensitive wetlands with permanent conservation where the lands there were stored and preserved in its natural condition. (TPD14-11)

**Response:** The comment is noted. The Everglades Mitigation Bank is discussed in Section 2.2.1 of the SEIS. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** Turkey Point should operate for an additional twenty years to be able to continue the award winning conservation work that was initiated almost thirty years ago. Turkey Point preserves and protects the environment. Turkey Point operates in harmony with the environment. (TPD15-4)

**Response:** The comment is noted. The impacts of Turkey Point Units 3 and 4 on the environment are discussed in Section 4. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. (TPD20-9)

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1 Response: The comment is noted. NRC responsibility does not include regulating licensee activities outside of nuclear plant operations and licensing. The comment provides no new 1 1 information, therefore, the comment will not be evaluated further. There was no change to the SEIS text. 

1 Comment: I never even considered this thing about Biscayne Bay and the need to camouflage 1 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 1 camouflage it too much. (TPD51-2) 1

1 **Response:** The comment is noted. As discussed in Section 4.7.2, the greatest aesthetic 1 impact of the Turkey Point plant is associated with the two fossil Units 1 and 2. The operations and facilities associated with Units 1 and 2 are outside the scope of relicensing of the nuclear Units 3 and 4, and this SEIS. There was no change to the SEIS text. 

**Comment:** The South Florida Regional Planning Council (SFRPC) noted that the project 1 should be consistent with the goals and policies of the Miami-Dade County comprehensive plan and corresponding land developing regulations. (TPD60-2)

**Comment:** SFRPC recommends that impacts to the natural systems be minimized to the I greatest extent feasible. (TPD60-3)

1 **Comment:** 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. (TPD60-4)

**Comment:** The project should be consistent with the goals and policies of the Miami-Dade 1 County comprehensive plan and its corresponding land development regulations. It is 1 important for the applicant to coordinate permits with all governments of jurisdiction. (TPD61-1)

1 **Comment:** The project is located immediately adjacent to the Biscayne National Park and Biscayne Bay Surface Water Improvement and Management Area (SWIM), natural resources 1 of regional significance designated in the SRPP. The goals and policies of the SRPP should be I observed when making decisions regarding this project. (TPD61-3)

Response: The comments are noted. The South Florida Regional Planning Council submitted 1 a letter to the Florida Costal Management Program on September 20, 2000 as discussed in 1 1 Section 2.2.1 of the SEIS. In its letter the Council stated that: "The license renewal, as 1 proposed, is generally consistent with the goals and policies of the Strategic Regional Policy 1 Plan for South Florida, particularly those regarding land use and public facilities, emergency 1 preparedness, and natural resources of regional significance. Council staff believes enactment

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of the program will further our goals for a more livable, sustainable, and competitive region." The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. (TPD61-2)

**Response:** The comment is noted. The NEPA process analyzes impacts to natural systems and identifies mitigation needs that will minimize any significant impacts. The SEIS analysis did not determine that impacts to natural systems would be significant. Additionally, the NRC staff consulted with other federal agencies regarding impacts to sensitive species and habitats. No significant impacts have been identified. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

A.1.9 Comments Concerning Category 1 Human Health/Radiological Issues

**Comment:** NRC monitors the performance of Turkey Point, as well as other independent agencies. Agencies agree that the operations at Turkey Point 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. (TPD14-4)

**Comment:** There are claims by an activist group opposed to nuclear power called the Tooth Fairy Project that Turkey Point is harming people in Miami-Dade County. These claims are just not true. (TPD14-5)

**Comment:** 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. (TPD14-6)

**Comment:** The environment around the plant is safe for children. 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. (TPD14-7)

**Comment:** The NRC has appropriately addressed these claims in the Draft Supplemental Environmental Impact Statement and concluded the Tooth Fairy study shows no link to adverse health affects. (TPD14-8)

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Response: The comments are noted. The comments are supportive of license renewal at
 Turkey Point Units 3 and 4. This issue is addressed in Section 4.7.1. The comments provide
 no new information, therefore, the comments will not be evaluated further. There was no
 change to the SEIS text.

T **Comment:** The NRC requires that electric utilities measure emissions of radioactive chemical 1 from nuclear reactors and levels of those chemicals in the air, water, soil and food. If these 1 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 1 1 methodology of the Supplement Report. The NRC is not requiring nor has it successfully and 1 thoroughly reviewed 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 E the true indicator of state health of the population. (TPD16-1) 1

1 **Response:** The comment is noted. This comment implies that NRC should measure radioactive substances in persons living near nuclear power plants. Such measurements would I L be misleading and unwarranted for a variety of reasons: Radioactive substances may come from a variety of sources. In the case of strontium 90, for example, the primary source has 1 L always been fallout from atmospheric weapons tests (United Nations Scientific Committee on 1 the Effects of Atomic Radiation (UNSCEAR) 2001a). The comments imply that strontium 90 I measured in people near nuclear plants must have come from nuclear plants, however, there is 1 no factual basis for this claim. Interpretation of measurements of radioactive materials in people 1 is difficult unless one knows what each individual was exposed to, when the exposures I occurred, and by what routes they occurred (ingestion, inhalation, etc.). Travel must be 1 accounted for, since even a couple of days in a high-fallout area could swamp any effect of local exposures if inhalation were suspected to be a primary route. In particular for strontium 1 1 90, dietary contributions from foodstuffs produced out of the region must be considered. Finally, I migration must be accounted for to interpret measurements, because people may have lived somewhere else for the better part of their lives. Substances in the human body are dynamic, 1 not static. This includes radioactive and nonradioactive substances. The dynamic processes I include intake of material; uptake to systemic circulation from the gastrointestinal tract, ł respiratory tract, or skin; translocation throughout the body system; retention over time; and 1 elimination via excretion and radioactive decay. Thus, even in deciduous teeth, the time course of exposure leading to intake and all other dynamic processes must be considered to interpret 1 measurements. Very little Sr-90 is released from a nuclear power reactor, and little if any Sr-90 found in the environment can be directly attributed to reactor effluents. In the year 2000, ł Turkey Point Units 3 and 4 did not release any Sr-90 in their gaseous effluents (FPL 2001). Even in the event that any measurable Sr-90 can be found in a person living near Turkey Point 1 1 or any other nuclear reactor, the Sr-90 cannot be absolutely attributed to the releases from the

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reactor. Additional information has been added to Section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

**Comment:** The NRC electrical utilities, including the Florida Department of Health have made no independent study of cancer in persons living near nuclear reactors from 1957 to 1990. (TPD16-3)

**Response:** The comment is noted. An epidemiological study of the human health effects from Turkey Point is beyond the scope of the license renewal process. Numerous scientifically designed, peer-reviewed studies of personnel exposed to occupational levels of radiation (versus life-threatening accident doses or medical therapeutic levels) have shown minimal effects on human health, and any effects were from exposures well above the exposure levels of the typical member of the public from normal operation of a nuclear power plant. The radiation effects of normal reactor operation on human health are Category 1 issues. Based on the analysis in the GEIS, the Commission made a generic determination that the radiation effects of normal reactor operation during the renewal term on human health would be SMALL. The staff has not identified any significant new information related to the radiation aspects of human health in the ER, the scoping process, its independent review, or in this comment that would call the conclusions of the GEIS into question. Therefore, the staff relies on those conclusions as amplified by supporting information in the GEIS related to the radiation effects of normal operation during the renewal term on human health. Additional information has been added to Section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

**Comment:** The study that was cited by 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. 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. (TPD16-4)

**Response:** The comment is noted. Conclusions that the NCI methodology was flawed are those of the commenter and do not reflect those of the scientific community. It is outside the scope of this environmental review to require additional study. The comment provides no new information relevant to relicensing Turkey Point; therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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

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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. (TPD16-5)

Response: The comment is noted. Control data were not defined in the report from the
Radiation and Public Health project, nor are such data and their uncertainties summarized in
that report. The comment provides no new information, therefore, the comment will not be
evaluated further. There was no change to the SEIS text.

Comment: 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. (TPD16-2)

Comment: What the Radiation and Public Health Project has found in the baby teeth study,
 both nationally and 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.

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. (TPD16-6)

Comment: 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.
 Where as the correlation between strontium 90 levels actually found in human bodies and
 cancer rates seems to be the most reliable method. (TPD21-3)

Comment: 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. (TPD72-22)

**Response:** The comments are noted. Although commercial nuclear power reactors do release Sr-90 into the environment, it is in very small amounts. The amount of Sr-90 released into the environment from a nuclear reactor is so small that it can only be reliably detected in the effluents themselves. During 2000, Turkey Point Units 3 and 4 did not release any Strontium-90 in the gaseous effluents. Liquid effluents containing radioactive materials, including Strontium-90 and Strontium-89 were released into the closed system cooling canals. The only time Strontium was released in the liquid effluents was during the second quarter and the releases were 0.12 MBq (3.2 E-06 Ci) of Strontium-90 and 0.37 MBq (10 E-06 Ci) of Strontium-89 (FPL 2001). For the second quarter of 2000, the total radioactive effluents were about 150 times below NRC regulatory limits (6.63 E-03 percent of applicable limits). The quantity of materials released to the atmosphere and liquid for 2000 are comparable to the quantities released in the past five years and the expected quantities in years to come, including the license renewal period. Any Sr-90 detected in environmental samples (soil or water) is most likely residual fallout from atmospheric nuclear weapons testing, not nuclear power reactor emissions. Likewise, any Strontium-90 found in deciduous teeth is likely from fallout.

Additional information has been added to section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

**Comment:** The data on cancer rates in Southeast Florida. This is not the Radiation and Public Health Project's data. This is public health data from the data base of the SER Group, the Surveillance Epidemiological Report that was set into the process by Richard Nixon when he launched the war on cancer. And so this data is not data that we have generated, but the data that we have analyzed.

The Radiation and Public Health Project has 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.

The Radiation and Public Health Project also found that annual rises and decline in cancer incidence 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.

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. (TPD16-7)

**Response:** The comment is noted. Due to the concern from the issues regarding the increased cancer rates raised by RPHP, the Florida Department of Health chose to also look at

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the cancer rates using the same data used by RPHP. Staff from the Bureau of Environmental 1 Epidemiology interviewed the RPHP staff to determine the source of data and then performed 1 their own calculations and graphed the results. The overall finding was that they could not identify any unusually high rates of cancers in the area, but as would be expected, just by chance, some county rates appear higher than State and national trends and some appear I lower. These rates fluctuate from year to year and in some situations large fluctuations occur 1 with a small number of cases in small underlying county populations. The documentation of the Bureau of Epidemiology calculations and interpretations is included in this appendix (TPD77). Therefore, the claim by the RPHP that there are elevated rates of cancer in the vicinity of the 1 plant are unsubstantiated and refuted by the State of Florida study. Additional information has been added to Section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health. 1

**Comment:** The Radiation and Public Health Project respectfully submits to the Nuclear 1 Regulatory Commission that the Generic Impact Statement is flawed. It says that the baby teeth study does not present new information. This is new and significant information and the 1 first study on the measure of in-body radioactivity, specifically near nuclear power i i 1 plants. (TPD16-8)

**Response:** For the reasons discussed in Section 4.7.1 Evaluation of Potential New and Significant Radiological Impacts on Human Health, the staff has determined that this is not new and significant information. Additional information has been added to Section 4.7.1, Evaluation 1 1 of Potential New and Significant Radiological Impacts on Human Health

1 **Comment:** The GEIS asserts that the doubling in cancer in the past half century is not due to 1 any environmental cause other than cigarette smoking, failing to cite the consideration research 1 which we've documented in The Radiation and Public Health Project's report that links cancer and environmental toxins like radiation. (TPD16-9) · |

1 **Response:** The comment is noted. The conclusions presented with regard to cancer incidents are those of the national agencies responsible for this kind of research, i.e. the National Cancer Institute and the American Cancer Society. The comment provides no new information, 1 therefore, the comment will not be evaluated further. There was no change to the SEIS text.

1 **Comment:** The NRC in this report ignores the rise in cancer rates among children, which also 1 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. (TPD16-10)

**Response:** The comment is noted. The conclusions about cancer rates in Section 4.7.1 are those of the National Cancer Institute and the American Cancer Society and not those of the

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NRC. The NRC relies upon the authoritative scientific analysis and conclusions of these national cancer agencies. The NCI and ACS studies of cancer rates near nuclear power plants do not support the conclusion that cancer rates of any age group are higher near nuclear power plants. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

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**Comment:** The larger GEIS does not mention the increased sensitivity of the fetus and the infant to radiation exposure, which was pointed out in the BEIR V Report through the National Academy of Sciences in 1990, and that report concluded there is no safe, non-linear exposure to radiation. (TPD16-11)

**Response:** The comment is noted. Regardless of whether the GEIS specifically mentions the sensitivity or the fetus and infant to radiation exposure, the regulations for protecting the public are intentionally conservative and provide adequate protection for the public, for all ages and radiosensitivity, including fetuses, infants, and children. FP&L monitors both gaseous and liquid effluents released from the reactors and predicts potential offsite doses from radioactive liquid and gaseous effluents. These calculations are performed to demonstrate the licensees compliance with its technical specifications and NRC regulations. The State of Florida also provides environmental monitoring around the Turkey Point Site to ensure that effluent releases are within or below regulatory limits.

The National Academy of Sciences Committee on the Biological Effects of Ionizing Radiation published its fifth report (BEIR V) just over a decade ago (National Research Council 1990). That report contains mathematical models that predict risk of radiation-induced cancers in human populations over and above the incidence of cancer that occurs in the absence of radiation exposure. The BEIR V committee chose a linear, nonthreshold (LNT) dose-response model for solid cancers and a linear-quadratic (LQ) model for leukemia.

Other national and international organizations have studied the question of radiation and cancer, and generally come up with similar conclusions (International Commission on Radiological Protection (ICRP) 1991, United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) 2001b, National Council on Radiation Protection and Measurements (NCRP) 2001).

The BEIR V report, the UNSCEAR 2000 report, and NCRP Report 136 do not address what is safe or not safe; they merely evaluate excess cancer risk in terms of probabilities. ICRP Publication 60, however, does define safe in the sense of acceptable risk, and this and similar definitions have been reaffirmed by the National Council on Radiation Protection and Measurements (NCRP 1993) and the U.S. Environmental Protection Agency (EPA 1987).

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These implicit definitions of safe are embodied in all U.S. radiation protection regulations, 1 ł including those of the NRC.

There is no human activity without some risk, however slight. Safe does not mean without risk, 1 1 but rather with an acceptably tiny risk. What risk is acceptable from society's standpoint is determined by the political process in the U.S. as spelled out recently, for example, by the U.S. Presidential/Congressional Commission on Risk Assessment and Risk Management (Omenn et al. 1997).

1 The BEIR V report does not state that there is no safe dose of radiation, and such a statement is in conflict with conventional wisdom as embodied in U.S. law, regulation, and political I process.

Additional information has been added to Section 4.7.1, Evaluation of Potential New and 1 Significant Radiological Impacts on Human Health.

1 **Comment:** 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, 1 1 which is also a market for other isotopes. (TPD16-12)

1 Response: The comment is noted. This comment implies that NRC should measure 1 radioactive substances in persons living near nuclear power plants. Such measurements would be misleading and unwarranted for a variety of reasons discussed below: Radioactive 1 substances may come from a variety of sources. 1

1 In the case of strontium 90, the primary source has always been fallout from atmospheric weapons tests (United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) 2001a).

The comments imply that strontium 90 measured in people near nuclear plants must have come from nuclear plants, which is not the case.

1 Interpretation of measurements of radioactive materials in people is difficult unless one knows what each individual was exposed to, when the exposures occurred, and by what routes they 1 l occurred (ingestion, inhalation, etc.). Travel of the individual being studied must be accounted 1 for, since even a couple of days in a high-fallout area could swamp any effect of local exposures if inhalation were suspected to be a primary route. In particular for strontium 90, 1 1 dietary contributions from foodstuffs produced out of the region must be considered. Finally, migration must be accounted for to interpret measurements, because people may have lived J somewhere else for the better part of their lives.

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Substances in the human body are dynamic, not static. This includes radioactive and nonradioactive substances. The dynamic processes include intake of material; uptake to systemic circulation from the gastrointestinal tract, respiratory tract, or skin; translocation throughout the body system; retention over time; and elimination via excretion and radioactive decay. Thus, even in deciduous teeth, the time course of exposure leading to intake and all other dynamic processes must be considered to interpret measurements. Very little Sr-90 is released from a nuclear power reactor, and little if any Sr-90 found in the environment can be directly attributed to reactor effluents. In the year 2000, Turkey Point Units 3 and 4 did not release any Sr-90 in their gaseous effluents (FPL 2001). Even in the event that any measurable Sr-90 can be found in a person living near Turkey Point or any other nuclear reactor, the Sr-90 cannot be absolutely attributed to the releases from the reactor.

Additional information has been added to Section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

**Comment:** In recent years, strontium 90 measurements in milk near nuclear power plants were no longer required these levels were significant. In 1976 milk from dairy farms near the Millstone Plant in Connecticut had the same strontium 90 concentration as at the peak of atomic bomb testing. (TPD16-13)

**Response:** The comment is noted. This SEIS only deals with environmental impacts related to Turkey Point Units 3 and 4 and does not address other nuclear facilities such as Millstone.

Although commercial nuclear power reactors do release *Sr*-90 into the environment, it is in very small amounts. The amount of *Sr*-90 released into the environment from a nuclear reactor is so small that it can only be reliably detected in the effluents themselves. During 2000, Turkey Point Units 3 and 4 did not release any Strontium-90 in the gaseous effluents. Liquid effluents containing radioactive materials, including Strontium-90 and Strontium-89 were released into the closed system cooling canals. The only time Strontium was released in the liquid effluents was during the second quarter and the releases were 0.12 MBq (3.2 E-06 Ci) of Strontium-90 and 0.37 MBq (10 E-06 Ci) of Strontium-89 (FPL 2001). For the second quarter of 2000, the total radioactive effluents were about 150 times below NRC regulatory limits (6.63 E-03 percent of applicable limits). The quantity of materials released to the atmosphere and liquid for 2000 are comparable to the quantities released in the past five years and the expected quantities in years to come, including the license renewal period. Any *Sr*-90 detected in environmental samples (soil or water or milk) is most likely residual fallout from atmospheric nuclear weapons testing, not nuclear power reactor emissions.

Additional information has been added to Section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

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Comment: The Radiation and Public Health Project calls for the postponement of a decision
 on this license application until the local health affects and studies impacting strontium 90 on
 local health affects are thoroughly evaluated. (TPD16-14)

Response: The comment is noted. The health effects from Sr-90 are known and
characterized in a number of studies such as NCRP Report No. 110, Some Aspects of
Strontium Radiobiology (NCRP 1991). Very little Sr-90 is released from a nuclear power
reactor, and little if any Sr-90 found in the environment can be directly attributed to reactor
effluents. In the year 2000, Turkey Point Units 3 and 4 did not release any Sr-90 in their
gaseous effluents (FPL 2001). These releases are typical of the releases in the last five years.

Based on the information provided, no further studies on the health effects in the vicinity of the
Turkey Point Plant are warranted. The comment provides no new information; therefore, the
comment will not be evaluated further. There was no change to the SEIS text.

Comment: The pattern that we see in Dade, with a big peak after the Hurricane Andrew which
 must have distributed radioactive debris all over the area. (TPD17-1)

Response: The comment is noted. This is an unsubstantiated assertion. Environmental
 monitoring by FPL and State of Florida following Hurricane Andrew did not show any increased
 radioactive contamination in the environment. The comment provides no new information,
 therefore, the comment will not be evaluated further. There was no change to the SEIS text.

Comment: This kind of study based on 500 teeth, was repeated in Dade County. 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. These peaks occurred on the top of something else, and that is a very serious problem. (TPD17-2)

Response: The comment is noted. There is no evidence supporting the assertion that there
 were substantial releases of Sr-90 from the facility, and no evidence that the Biscayne Aquifer
 has been contaminated. Additional information has been added to Section 4.7.1, Evaluation of
 Potential New and Significant Radiological Impacts on Human Health.

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**Comment:** We are endangering the welfare of the entire nation by ignoring this kind of data regarding child cancer rates. (TPD17-3)

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**Response:** The comment is noted. Radiation exposure to the public during the license renewal term is a Category 1 issue as evaluated in the GEIS. At the request of Congress, the National Cancer Institute (NCI) conducted a study in 1990, Cancer in Populations Living Near Nuclear Facilities, to look at cancer mortality rates around 52 nuclear power plants, including Indian Point, nine Department of Energy facilities, and one former commercial fuel reprocessing facility. The NCI study concluded from the evidence available, this study has found no suggestion that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby. Additionally, the American Cancer Society has concluded that although reports about cancer case clusters in such communities have raised public concern, studies show that clusters do not occur more often near nuclear plants than they do by chance elsewhere in the population. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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 the striking similarity. This data was obtained from the Dade County Cancer Incident Registry that registers cancer since 1982. (TPD17-4)

**Response:** The comment is noted. This is an unsubstantiated assertion. Environmental monitoring by the State of Florida following Hurricane Andrew did not show any increased radioactive contamination in the environment. Even if the sediments in the cooling canals were contaminated with high levels of Sr-90 (which they are not), a mechanism that explains how these sediments were somehow distributed throughout southern Florida by a hurricane without destroying the canals defies explanation. There was no change to the SEIS text.

**Comment:** 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. (TPD17-6)

**Response:** The comment is noted. The GEIS took into consideration the location of nuclear facilities and major population centers in assessing the human health impacts from radiological releases, and considered the impacts to be generic and thus Category 1.

This unsubstantiated assertion provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

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ļ **Comment:** The cancers are not declining. They are growing among children and this is the 1 zero to nine year group, and they come in spikes that are associated with known events that 1 produce radioactivity into the environment. (TPD17-5)

1 **Comment:** 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. (TPD17-7) 1

**Comment:** 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. (TPD72-7)

1 **Response:** The comments are noted. Due to the concern from the issues regarding the increased cancer rates raised by RPHP, the Florida Department of Health chose to also look at 1 the cancer rates using the same data used by RPHP. Staff from the Bureau of Environmental 1 Epidemiology interviewed the RPHP staff to determine the source of data and then performed 1 1 their own calculations and graphed the results. The overall finding was that they could not 1 identify any unusually high rates of cancers, but as would be expected, just by chance, some 1 county rates appear higher than State and national trends and some appear lower. These 1 rates fluctuate from year to year and in some situations large fluctuations occur with a small number of cases in small underlying county populations. The documentation of the Bureau of L Epidemiology calculations and interpretations is attached as part of the transcript in this 1 appendix. 

Additional information has been added to Section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

I **Comment:** More data from the Center for Disease Control. Dade County white infant mortality incidentally, black is almost twice as high. The data shows 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 1 taking place since 1935, except for the period of bomb testing. Then the Chinese bomb test. 1 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, 1 and then came Chernobyl and it raised it again. And then Hurricane Andrew, still another small peak. (TPD17-8)

**Response:** The comment is noted. The comment infers that when certain activities occurred 1 producing radiological fallout or reactor effluents, the infant mortality rate increased, and

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subsequently decreased when these activities were not occurring. The staff concludes that there are many causes of infant mortality and simply graphing the data and looking for trends or correlations in the data does not establish a cause-and-effect relationship.

Additional information has been added to Section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

**Comment:** The sampling program with the State has found no environmental levels of build-up and concentration of materials. (TPD18-1)

**Comment:** To date the sampling program with the State has not found anything in the environment that would either increase or affect or harm the citizens of the State of Florida, at any one of the nuclear plants. (TPD18-2)

**Response:** The comments are noted. The comments provide information in support of the conclusions presented in the GEIS and reiterated in Section 4.7.1. The comments did not result in a change to the SEIS text.

**Comment:** 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.

The Florida Department of 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. (TPD18-3)

**Response:** This comment refutes the statement by the Radiation and Public Health Project, Inc.(RPHP) that there are large increases in the cancer rates in south eastern Florida counties that are attributable to the Turkey Point and St. Lucie nuclear power facilities.

A summary of the Florida Department of Health's statement regarding the calculations and findings of the data related to cancer rates in the counties near Turkey Point has been added to Section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

**Comment:** The Tooth Fairy report is based on junk science. There is no evidence of increased cancer rates or strontium concentrations in the project area. (TPD19-1)

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1 **Response:** The comment is noted. The comment is supportive of license renewal at Turkey 1 Point Units 3 and 4, and is general in nature. The comment provides no new information; therefore, the comment will not be evaluated further. There was no change to the SEIS text. 1

**Comment:** The GEIS Supplement filed, specifically Section 4.7.1, the statement for Turkey I Point criticizes the baby teeth study for not performing environmental testing for strontium 89. 1 We must realize how inconclusive such testing would be. With a half life of 60.5 days, much of I this radioactivity would decay while this chemical sits in the rad-waste hold-up tank. 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 1 1 more of the activity would be lost as it sits in the lab awaiting testing. (TPD21-1)

1 Response: The comment is noted. The 60.5 day half-life of Sr-89 is sufficiently long that it 1 could be detected in the environment if it was periodically released from the facility. Without 1 detecting Sr-89 in the environment, it is impossible to claim that Sr-90 is from a nuclear reactor and not residual fallout from atmospheric nuclear weapons testing. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to 1 the SEIS text.

Comment: The NRC needs to monitor all gasses and liquid effluents for strontium 90. 1

1 The NRC needs to put monitors in the places where the unplanned, unmeasured radioactivity gets released to the environment. The NRC needs to have random samples of food sources 1 measured for strontium 90, such as local vegetables, fish, blue claw crab, Florida lobster, local I milk and local drinking water.

The NRC needs to publish the NRC's own measurements and strontium 90 levels in baby teeth.

The NRC needs to correlate all the listed monitoring procedures and cancer statistics to accurately find out if or if not there's a significant relation between nuclear plan operations 1 enhancer. (TPD21-2)

1 Response: The comment is noted. The NRC sets limits on radiological effluents, requires 1 monitoring of effluents and foodstuffs to assure those limits are met, and has set dose limits to 1 regulate the release of radioactive material from nuclear power facilities. The regulations are intentionally conservative and provide adequate protection for the public including the most radiosensitive members of the population. FPL monitors its effluent and calculates offsite 1 1 doses caused by radioactive liquid and gaseous effluents. These calculations are performed to 1 demonstrate the licensee's compliance with its technical specifications and NRC regulations. The licensee's Offsite Dose Calculation Manual (ODCM) provides for collection and analysis of

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a variety of samples such as soil, water, plants and animals. NRC does not perform studies of strontium in baby teeth because it is not considered a reliable method to determine public health impacts from releases from nuclear reactors. NRC relies on the studies performed by the National Cancer Institute (NCI) that conducted a study in 1990, "Cancer in Populations Living Near Nuclear Facilities," to look at cancer mortality rates around 52 nuclear power plants, nine Department of Energy (DOE) facilities, and one former commercial fuel reprocessing facility. The NCI study concluded from the evidence available, this study has found no suggestion that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby. Additionally, the American Cancer Society had concluded that although reports about cancer case clusters in such communities have raised public concern, studies show that clusters do not occur more often near nuclear plants than they do by chance elsewhere in the population.

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The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. (TPD29-2)

**Response:** The comment is noted. The National Academy of Sciences' Committee on the Biological Effects of Ionizing Radiation published its fifth report (BEIR V) just over a decade ago (National Research Council 1990). That report contains mathematical models that predict risk of radiation-induced cancers in human populations over and above the incidence of cancer that occurs in the absence of radiation exposure. The BEIR V committee chose a linear, nonthreshold (LNT) dose-response model for solid cancers and a linear-quadratic (LQ) model for leukemia. Other national and international organizations have studied the question of radiation and cancer, and reached similar conclusions (International Commission on Radiological Protection (ICRP) 1991, United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) 2001b, National Council on Radiation Protection and Measurements (NCRP) 2001).

The BEIR V report, the UNSCEAR 2000 report, and NCRP Report 136 do not address what is safe or not safe; they merely evaluate excess cancer risk in terms of probabilities. ICRP Publication 60, however, does define safe in the sense of "acceptable risk," and this and similar definitions have been reaffirmed by the NCRP (National Council on Radiation Protection and Measurements (NCRP) 1993) and the EPA (U.S. Environmental Protection Agency (EPA) 1987). These implicit definitions of "safe" are embodied in all U.S. radiation protection regulations, including those of the NRC. There is no human activity without some risk, however

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Ł slight, so "safe" does not mean "with no risk," but rather "safe" means "with an acceptably tiny risk." What risk is acceptable from society's standpoint is determined by the political process in 1 the U.S. as spelled out recently, for example, by the U.S. Presidential/Congressional Commission on Risk Assessment and Risk Management (Omenn et al. 1997).

The BEIR V report does not state that there is no safe dose of radiation, and such a statement is in conflict with conventional wisdom as embodied in U.S. law, regulation, and political process. No new information was provided by the comment. Therefore, the comment will not be evaluated further. Additional information has been added to Section 4.7.1. Evaluation of Potential New and Significant Radiological Impacts on Human Health.

**Comment:** 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. (TPD29-3)

**Response:** The comment is noted. The assertion that strontium 90 concentrations are increasing is incorrect: data presented in the UNSCEAR 2000 report show clearly that this Ł isotope is declining on both local and worldwide scales over the past decades. During the year 2000, Turkey Point Units 3 & 4 released no Sr-90 in their gaseous effluents. In liquid effluents, 1 they only released 0.12 MBq (3.2 E-6 Ci), which was less than 0.01 percent of the total quantity of radioactive material released into the cooling canals. These releases are typical for the last 5 years of Turkey Point's operation, and are not considered a major component of the plants effluents. 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:** 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. (TPD29-4)

**Response:** The comment is noted. Very little Sr-90 is released from a nuclear power reactor, and little if any Sr-90 found in the environment can be directly attributed to reactor effluents. In the year 2000, Turkey Point Units 3 and 4 did not release any Sr-90 in their gaseous effluents (FPL 2001). Even in the event that any measurable Sr-90 can be found in a person living near Turkey Point or any other nuclear reactor, the Sr-90 cannot be absolutely attributed to the releases from the reactor. Due to the concern from the issues regarding the increased cancer rates raised by RPHP, the Florida Department of Health chose to also look at the cancer rates using the same data used by RPHP. Staff from the Bureau of Environmental Epidemiology interviewed the RPHP staff to determine the source of data and then performed their own calculations and graphed the results. The overall finding was that they could not identify any

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unusually high rates of cancers, but as would be expected, 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. The documentation of the Bureau of Epidemiology calculations and interpretations is attached as part of the transcript in this appendix.

Section 4.7.1 contains additional discussion of this topic.

**Comment:** 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. (TPD29-1)

**Comment:** The question of the safety of normal operations emissions should have been answered a long time ago. Determine the radiation cancer link before proceeding. Find the answer. Put public health first. (TPD29-6)

**Response:** The comments are noted. Radiological effluents and the resulting radiation exposure to the public and workers was evaluated in the GEIS and determined to be a Category 1 issue. No new information was provided by the comment. Therefore, the comments will not be evaluated further. There was no change to the SEIS text.

For additional information concerning a cancer risk and the cause-effect relationship between cancer and radiological effluent releases from Turkey Point Units 3 & 4, see Section 4.7.1.

**Comment:** 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 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. (TPD32-6)

**Response:** The comment is noted. The NRC is not complacent when it comes to protecting public health and safety. The NRC relies on a strategy of establishing conservative limits and ensuring that those limits are not exceed. The National Academy of Sciences' Committee on the Biological Effects of Ionizing Radiation published its fifth report (BEIR V) just over a decade ago (National Research Council 1990). That report contains mathematical models that predict risk of radiation-induced cancers in human populations over and above the incidence of cancer that occurs in the absence of radiation exposure. The BEIR V committee chose a linear,

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nonthreshold (LNT) dose-response model for solid cancers and a linear-quadratic (LQ) model for leukemia.

Other national and international organizations have studied the question of radiation and cancer, and reached similar conclusions (International Commission on Radiological Protection 1 [ICRP] 1991, United Nations Scientific Committee on the Effects of Atomic Radiation [UNSCEAR] 2001b, National Council on Radiation Protection and Measurements [NCRP] 1 | 2001).

ł. The BEIR V report, the UNSCEAR 2000 report, and NCRP Report 136 do not address what is safe or not safe; they merely evaluate excess cancer risk in terms of probabilities. ICRP ł Publication 60, however, does define safe in the sense of "acceptable risk," and this and similar 1 1 definitions have been reaffirmed by the National Council on Radiation Protection and Measurements (NCRP 1993) and the U.S. Environmental Protection Agency (EPA 1987). 1 These implicit definitions of "safe" are embodied in all U.S. radiation protection regulations, including those of the NRC. L

There is no human activity without some risk, however slight, so "safe" does not mean "with no risk," but rather "safe" means "with an acceptably tiny risk." What risk is acceptable from society's standpoint is determined by the political process in the U.S. as spelled out recently, for i example, by the U.S. Presidential/Congressional Commission on Risk Assessment and Risk Management (Omenn et al. 1997). Additionally, the fact that studies by both the American Cancer Society and the National Cancer Institute found no increase in cancer mortality in the vicinity of nuclear plants only underscores the adequacy of the limits established by the NRC.

Additional information has been added to section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

**Comment:** Recently many problems have come to light as a result of the relicensing activities for Turkey Point. There are new and significant information about the baby teeth study. (TPD40-1)

Response: The comment is noted. As discussed in Section 4.7.1 of the SEIS, information on baby teeth is neither new nor significant. There was no change to the SEIS text.

**Comment:** Recently many problems have come to light as a result of the relicensing activities for Turkey Point. The releases of radioactive waste into the environment. (TPD40-4)

**Response:** The comment is noted. Radiological effluents and the resulting radiation exposure to the public and workers was evaluated in the GEIS and determined to be a Category 1 issue.

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The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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 power plants. (TPD43-5)

**Comment:** 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. (TPD43-10)

**Response:** The comments are noted. The comments are supportive of license renewal at Turkey Point Units 3 and 4. The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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.

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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." (TPD45-2)

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Comment: "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." (TPD45-3)

Response: The comments are noted. This statement refutes the statement by the Radiation
and Public Health Project, Inc. (RPHP) that there are large increases in the cancer rates in
south eastern Florida counties that are attributable to the Turkey Point and St. Lucie nuclear
power facilities. A summary of the Florida Department of Health's statement regarding the
calculations and findings of the data related to cancer rates in the counties near Turkey Point
has been added to Section 4.7.1, Evaluation of Potential New and Significant Radiological
Impacts on Human Health.

Comment: The Tooth Fairy Project is a fairy tale. (TPD46-1)

Response: The comment is noted. The comment provides no new information; therefore, the
 comments will not be evaluated further.

Comment: 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. (TPD31-1)

Comment: Now of course, issues dealing with the Tooth Fairy Project and other issues were
brought to my attention and when it 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

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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. (TPD35-2)

**Comment:** Up to date we have found a stable environment, no increases in radiation and no increases in radionuclides that can be found in the environment. (TPD45-1)

**Comment:** 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. (TPD46-2)

**Comment:** The U.S. Nuclear Regulatory Commission (U.S. NRC) has concluded in the draft Environmental Impact Statement that the environmental impacts of offsite radioactive releases from nuclear plants are small. Equally important, the U.S. NRC has rejected the allegations of the proponents of the "Tooth Fairy" project that increases 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. (TPD69-1)

**Response:** The comments are noted. The comments provide no new information, therefore, the comments will not be evaluated further. These comments did not result in a change to the text of the SEIS.

**Comment:** 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. (TPD47-2)

**Response:** The comment is noted. The assertion regarding strontium 90 levels in Miami Beach is unsubstantiated, and the staff is unable to postulate a reasonable transport system that would result in the highest concentrations being present in Miami Beach. Radiological effluents and the resulting radiation exposure to the public and workers was evaluated in the GEIS and determined to be a Category 1 issue. No new information was provided by the comment. Therefore, the comment will not be evaluated further. This comment did not result in a change in the SEIS text.

**Comment:** 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

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scientists that are going to support you, and you're saying that we're finding scientists that 1 support us. (TPD47-3)

1 **Response:** The comment is noted. The NRC typically does not establish panels of scientists 1 to evaluate research. Analysis of the research performed by organizations is outside the scope of license renewal for Turkey Point Units 3 and 4. No new information was provided by the comment. Therefore, the comment will not be evaluated further. There was no change to the SEIS text.

1 **Comment:** NEPA also requires the consideration of "cumulative impacts" in assessing the 1 proposed action, such as the impact that radioactive emissions from the plant may have had. 1 and may continue to have, on wildlife and the human environment. (TPD64-22)

Response: The comment is noted. Cumulative radiological impacts were evaluated in the 1 GEIS. Environmental monitoring of fish and wildlife is conducted routinely by the Plant and by ł the Florida Department of Health. The results of those studies have not shown any 1 1 accumulation of radioactive components in the environment. No indication of "cumulative 1. impacts<sup>\*</sup> have ever been found. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text. L

**Comment:** The fact that the Turkey Point reactors are located in a hurricane region presents 1 "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 1 maximum hurricane, it is essential to ensure that critical components do not lose the ability to 1 perform their intended safety function. Age related stress, corrosion and metal fatigue of both 1 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 1 I accident more severe than other plants. (TPD64-27)

1 **Response:** The comment is noted. NRC regulations under 10 CFR 51.53 require license 1 renewal applicants to consider alternatives to mitigate severe accidents if the staff has not previously evaluated SAMAs for the applicant's plant in an environmental impact statement or related supplement or in an environmental assessment. The staff's evaluation of this analysis is presented in Section 4.7.3 and Section 5.1.2 of the SEIS.

1 The ability to implement protective actions, such as evacuation for the public is considered an L operational issue, and not related to license renewal. The issue of evacuation during an emergency, whether for a hurricane or other event is assessed under the current operating 1 1 license for Turkey Point Units 3 and 4. There was no change to the SEIS text.

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**Comment:** 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. (TPD34-7)

**Comment:** 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. (TPD64-37)

**Comment:** 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 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. (TPD64-38)

**Response:** The comments are noted. Radiological effluents, including those into the Turkey Point cooling canals and the resulting radiation exposure to the public and workers were evaluated in the GEIS and determined to be a Category 1 issue. Additionally, Florida Power and Light monitors both gaseous and liquid effluents released from the reactors and maintains an offsite dose calculation manual (ODCM) that describes the methodology and parameters that are used in the prediction of potential offsite doses from radioactive liquid and gaseous effluents. These calculations are performed to demonstrate the licensee's compliance with its technical specifications and NRC regulations. The State of Florida also provides environmental monitoring around the Turkey Point Site to ensure that effluent releases are within or below regulatory limits. The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

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Comment: Environmentally, the plant must meet very strict and stringent radiation safety
 standards designed to protect the employees and ensure the community health and safety.
 (TPD68-8)

**Comment:** The Company consistently monitors the air and water quality at the plant and surrounding communities to ensure these standards are maintained. (TPD68-9)

**Response:** The comments are noted. The comments are supportive of license renewal at Turkey Point Units 3 and 4. The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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? (TPD72-1)

**Response:** The comment is noted. The question was addressed by the National Cancer 1 Institute and the American Cancer Society, as stated in Section 4.7.1 of the SEIS. No increase 1 in cancer rates has been found near nuclear power plants. The NRC's regulatory limits for 1 radiological protection are set to protect workers and the public from the harmful effects of 1 1 radiation on humans. The limits were based on the recommendations of standards-setting organizations. Radiation standards reflect extensive scientific study by national and 1 international organizations (International Commission on Radiological Protection [ICRP], ł National Council on Radiation Protection and Measurements, and National Academy of 1 Sciences) and are conservative to ensure that the public and workers at nuclear power plants 1 are protected. The NRC radiation exposure standards are presented in 10 CFR Part 20. 1 1 "Standards for Protection Against Radiation," and are based on the recommendations in ICRP 1 26 and 30. Numerous scientifically designed, peer-reviewed studies of personnel exposed to occupational levels of radiation versus life-threatening accident doses or medical therapeutic 1 levels) have shown minimal effect on human health, and any effect was from exposures well above the exposure levels of the typical member of the public from normal operation of a 1 nuclear power plant.

The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

Comment: Does the buildup of nuclear waste from reactor operations pose a threat to the
 health of local residents? (TPD72-3)

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**Response:** The comment is noted. The NRC assumes, the commenter refers to onsite storage of spent nuclear fuel. Onsite storage of spent nuclear fuel is a Category 1 issue. The impacts of onsite storage of spent fuel during the renewal term are evaluated in Chapter 6 of the SEIS. The Commission found (10 CFR Part 51, Subpart A, Appendix B, Table B-1) that spent fuel from an additional 20 years of operation can be safely accommodated onsite at all plants if a permanent repository or monitored retrievable storage is not available, and that the associated impacts are SMALL. This is a Category 1 issue for which the staff found no new and significant information. This comment did not result in modification of the SEIS text.

**Comment:** Current regulatory policies do not include an adequate risk assessment for lowdose exposures. (TPD72-4)

**Response:** The comment is noted. On the contrary, a tremendous amount of excellent scientific work has been completed over the course of the twentieth century, and renewed efforts are ongoing (see, for example, the U.S. Department of Energy Low-Dose Research Program at http://lowdose.org and review the history provided at this web site).

While current U.S. radiation dose limits (NRC 1993) are based on the ICRP's 1977 guidance (International Commission on Radiological Protection (ICRP 1977) as published by the U.S. Environmental Protection Agency (EPA 1987), the evidence gathered since that time has not changed the risk assessment significantly. See, for example, summaries by NCRP (National Council on Radiation Protection and Measurements (NCRP) 2001) and UNSCEAR (United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) 2001b). These risk assessments, which incorporate the latest scientific research from around the world, generally rule out the existence of radiation risks that differ much from the ICRP guidance of 1977. Managing radiation risks using current dose limits and ALARA programs is consistent with safety as defined by the political process in the U.S.

The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. (TPD72-5)

**Response:** The comment is noted. Strontium 90 (Sr-90) is produced in roughly 5.8% of nuclear fissions in a reactor's fuel elements, and undergoes radioactive decay with a half-life of almost 29 years. Sr-90, and its radioactive decay product yttrium 90 (Y-90), are not harmful

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unless they are near or inside the body. They are easily shielded if outside the body, resulting in no radiation exposure.

1 The statement is made in the comment that the NRC does not require environmental 1 measurements of Sr-90. On the contrary, licensees perform environmental monitoring for radionuclides in the vicinity of each nuclear reactor. In the case of Turkey Point, these I measurements are performed by the State of Florida. Based on the results of their i environmental monitoring program, no elevated levels of radionuclides in the environment attributed to plant operation were detected.

Compared to other radionuclides, both natural and human-made, Sr-90 isn't one of the more toxic. For example, naturally-occurring thorium 230 is 700 times more radiotoxic for inhalation.

The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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 1 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. (TPD72-6)

1 **Response:** The comment is noted. This comment on the Turkey Point SEIS implies that 1 claimed statistical associations between cancer rates and reactor operations are cause-andeffect relationships. The NRC does not agree with the results presented by the RPHP, nor does the Florida Department of Health. Cancer incidence rates in Miami-Dade do not show the 1 trends suggested by the RPHP, nor is there support for the inference regarding elevated levels of strontium-90 in teeth attributable to the operation of the Turkey Point Plant.

Many scientists have addressed the question of when one can decide that an association is 1 causal, that is, when two things that appear to be associated over time can lead one to deduce that one causes the other.

A simple counter example helps illustrate this point. A college professor gives the following 1 example of a causal inference: "In the winter I wear galoshes. In the winter I get colds. Therefore, galoshes cause colds." There's no argument that a strong statistical association exists between exposure to galoshes and the health effect of colds. There is, however, an argument about whether galoshes cause colds. So, how does one go about addressing whether this association is really causation?

Here are some of the major factors to consider before inferring that a statistical association is a causal one (Hill 1965):

- 1. Strength: Is a large effect observed, e.g., 32-fold lung cancer increase in heavy smokers?
- 2. Consistency: Is the effect consistently observed across studies?
- 3. Specificity: Does the effect occur in specific persons, for particular sites and types of disease.
- 4. Temporality: Does exposure precede disease? Is there a suitable latent period between exposure and clinical symptoms?
- 5. Biological Gradient: Is there a dose-response curve in which increasing dose leads to increasing response?
- 6. Biological Plausibility: Is there a plausible biological mechanism for the observed association?
- 7. Coherence: Does the cause-and-effect inference seriously conflict with generally known facts of the natural history and biology of the disease?

- 8. Experiment: Does intervention reduce or prevent the association?
- 9. Analogy: Do other, similar agents produce the effects?

The bottom line is that strong statistical association alone does not prove causation. The RPHP work fails to meet many of these criteria, even if the strontium measurements were the result of the nuclear power plant operations. In particular, they fail to meet criteria 1, 2, 3, 4, and 6. Epidemiology is the study of patterns of health and disease in human populations. In 1995 an international group of experts assembled to help determine how to use epidemiology studies for risk assessments. Their work has been published (Federal Focus Inc. 1996) and a non-copyrighted summary can be found on the internet at <u>http://www.pnl.gov/berc/epub/risk/index.html</u>. In relation to the SEIS for Turkey Point, the cancer rate is only relevant with regard to the impacts from Turkey Point. See TPD 16, Comment 12 to address the cancer rates in southeast Florida. Based on a number of related comments, additional information has been added to section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

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Comment: The Gould report was not available to the NRC at the time that the GEIS waswritten.

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. (TPD72-8)

Response: The comment is noted. The staff agrees with the comment, but not the
 conclusions in the Gould report. The document being referred to is the Generic Environmental
 Impact Statement for License Renewal (GEIS), which was published in 1996. Section 4.7.1 of
 the SEIS provides a staff response to the Gould report as well as a subsequent study
 presented by the Radiation Public Health Project (2001) on the same subject. This comment
 did not result in modification the SEIS text.

Comment: 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. (TPD729)

Response: The comment is noted. For the reasons discussed in Section 4.7.1 Evaluation of
 Potential New and Significant Radiological Impacts on Human Health, the staff has determined
 that this is not new and significant information. This comment did not result in a change to the
 text of the SEIS.

Comment: Only one study 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 (TPD72-10)

Response: The comment is noted. There is general consensus that there were no
 discernable increases in cancer mortality or morbidity around TMI-2 after the 1979 accident.
 The releases resulting from the Chernobyl accident were many orders of magnitude higher than
 routine plant releases, and are in no way comparable to the routine releases from Turkey Point.
 See Section 4.7.1 for additional discussion.

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**Comment:** 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.

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 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. (TPD72-11)

**Response:** The comment is noted. Regardless of whether the GEIS specifically mentions the sensitivity of the fetus and infant to radiation exposure, the regulations for protecting the public are intentionally conservative and provide adequate protection for the public, for all ages and radiosensitivity, including fetuses, infants, and children. FP&L monitors both gaseous and liquid effluents released from the reactors and predicts potential offsite doses from radioactive liquid and gaseous effluents. These calculations are performed to demonstrate the licensees compliance with its technical specifications and NRC regulations. The State of Florida also provides environmental monitoring around the Turkey Point Site to ensure that effluent releases are within or below regulatory limits.

The National Academy of Sciences Committee on the Biological Effects of Ionizing Radiation published its fifth report (BEIR V) just over a decade ago (National Research Council 1990). That report contains mathematical models that predict risk of radiation-induced cancers in human populations over and above the incidence of cancer that occurs in the absence of radiation exposure. The BEIR V committee chose a linear, nonthreshold (LNT) dose-response model for solid cancers and a linear-quadratic (LQ) model for leukemia.

Other national and international organizations have studied the question of radiation and cancer, and generally come up with similar conclusions (International Commission on Radiological Protection (ICRP) 1991, United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) 2001b, National Council on Radiation Protection and Measurements (NCRP) 2001).

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1 The BEIR V report, the UNSCEAR 2000 report, and NCRP Report 136 do not address what is safe or not safe; they merely evaluate excess cancer risk in terms of probabilities. ICRP 1 Publication 60, however, does define safe in the sense of acceptable risk, and this and similar definitions have been reaffirmed by the National Council on Radiation Protection and Measurements (NCRP 1993) and the U.S. Environmental Protection Agency (EPA 1987). 1 1 These implicit definitions of safe are embodied in all U.S. radiation protection regulations, 1 including those of the NRC. There is no human activity without some risk, however slight. Safe does not mean without risk, but rather with an acceptably tiny risk. What risk is acceptable from society's standpoint is determined by the political process in the U.S. as spelled out recently, for 1 example, by the U.S. Presidential/Congressional Commission on Risk Assessment and Risk I Management (Omenn et al. 1997). The BEIR V report does not state that there is no safe 1 dose of radiation, and such a statement is in conflict with conventional wisdom as embodied in U.S. law, regulation, and political process. Additional information has been added to Section 1 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health 

**Comment:** 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. 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. (TPD72-12)

**Response:** The comment is noted. The comment is outside the scope of license renewal. Furthermore, there is wide variability of Sr-90 values in soil across the United States. Decisions made based on average U.S. soil values are of limited value because of this variability. See Section 4.7.1 for additional discussion. This comment did not result in modification the SEIS text.

**Comment:** 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). The rate of rhabdomyosarcoma in
western Suffolk County NY, near a number of nuclear reactors, is 15 times higher than the
national rate. (TPD72-13)

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**Response:** The comment is noted. The information provided in the SEIS with regard to rhabdomyosarcoma is a direct statement from the recognized national authority on cancers, the American Cancer Society, and a leading research hospital (St. Jude Children's Research Hospital). It is not based on extrapolations as is the article referenced by Mangano et al. The cancer rates in the vicinity of a single plant, as referred to in the Gould et al. article, do not represent trends across the nation with regard to rates near nuclear plants. This has been demonstrated by the National Cancer Institute's study of cancer rates near nuclear plants versus areas remote from nuclear plants. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

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**Comment:** No association has been documented between the incidence of rhabdomyosarcoma and any environmental condition, including radiation exposure.

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In 1991, University of Pittsburgh researcher published a study showing that children of women who received X-rays during pregnancy had twice the risk of developing the disease. 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. (TPD72-14)

**Response:** The comment is noted. The conclusions presented in the SEIS with regard to rhabdomyosarcoma and radiation exposure are those of the American Cancer Society, which was based on a review of all available data, including those referenced in this comment. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. 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 the increase is due to factors other than tobacco. Children are most susceptible to the effects of environmental toxins such as radiation. (TPD72-15)

**Response:** The comment is noted. The conclusions about cancer rates in Section 4.7.1 are those of the National Cancer Institute and the American Cancer Society and not those of the NRC. The NRC relies upon the authoritative scientific analysis and conclusions of these national cancer agencies. The NCI and ACS studies of cancer rates near nuclear power plants do not support the conclusion that cancer rates of any age group are higher near nuclear power plants.

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The comment provides no new information and will not be evaluated further. There was no change to the text.

**Comment:** It is not apparent that the Gould report included control groups.

The baby teeth study contains several control groups, including temporal controls, distance 1 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 1 about 60% below that of those born near reactors. In addition, Sr-90 levels in 19 teeth of 1 children born in San Luis Obispo County CA, after startup of the Diablo Canyon nuclear 1 reactors in the mid-1980s, are 50% higher than for children born before the reactors opened. 1 Additional control data are being analyzed. (TPD72-16)

**Response:** The comment is noted. Control data were not defined in the report from the Radiation and Public Health project, nor are such data and their uncertainties summarized in 1 that report. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** The Gould report does not report factors such as where the mother lived while pregnant, nor consider the sources of food that the children may have consumed.

1 The [Gould] 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. (TPD72-17)

Response: The comment is noted. The comment is a rebuttal by the Radiation Public Health 1 Program (RPHP) to a statement made in Section 4.7.1 of draft Supplement 5 to the GEIS that 1 concluded that the Gould report does not report factors that influence the source of any I. I radioactivity in baby teeth such as where the mother lived while pregnant, nor considers the source of food that the children may have consumed. The Gould report does not present any 1 data that would allow a reviewer to determine where teeth came from, nor are summaries presented with regard to concentrations in various subgroups, e.g., children whose mothers 1 consumed only bottled water. Furthermore, no data are presented, nor are the samples 1 screened by, what food stuffs or food sources were used during any time prior to collection of the sample. Because strontium behaves similarly to calcium in biological systems, the primary Î source of uptake is food rather than water, which is apparently the only behavioral factor addressed by the commenter's research.

The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. The cancer rates in Miami-Dade County and in Martin/St. Lucie Counties are the highest of all these. (TPD72-18)

**Response:** The comment is noted. As stated in the SEIS, the American Cancer Society report is one of two studies of cancer rates near reactors done by the United State's premier science agencies responsible for cancer research. The other was by the National Cancer Institute. Both studies resulted in the same conclusion: no suggestion that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby.

Due to the concern from the issues regarding the increased cancer rates raised by RPHP, the Florida Department of Health chose to also look at the cancer rates using the same data used by RPHP. Staff from the Bureau of Environmental Epidemiology interviewed the RPHP staff to determine the source of data and then performed their own calculations and graphed the results. The overall finding was that they could not identify any unusually high rates of cancers, but as would be expected, 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. The documentation of the Bureau of Epidemiology calculations and interpretations is attached as part of the transcript in this appendix. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. (TPD72-19)

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Response: The comment is noted. The commenter requests a site-specific safety analysis of
the impact of Hurricane Andrew on the Turkey Point Plant. Such an evaluation is outside the
scope of license renewal. The impacts of hurricane force winds and storm surges on the plant
were analyzed as part of the original plant application, and is found in the licensee's safety
analysis report. The comment provides no new information, and therefore, will not be
evaluated further. The comment did not result in a modification of the SEIS text.

Comment: 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. (TPD72-20)

Response: The comment is noted. The state of Florida monitors concentrations of
radionuclides on fish and shellfish in Biscayne Bay near the cooling canals. All concentrations
have been and continue to be within the State and Federal permissible limits. The comment
provided no new information and did not result in changes to the text.

Comment: 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 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 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. (TPD72-21)

Response: The comment is noted. To the extent that the comment pertains to aging within
 the scope of license renewal, these issues will be addressed during the parallel safety analysis

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review performed under 10 CFR Part 54. Aging management issues are outside the scope of 10 CFR Part 51 and will not be evaluated further in this SEIS. The comment provides no new information and, therefore, will not be evaluated further. There was no change to the SEIS text.

**Comment:** Radiation and Public Health Project, Inc. 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 of Health...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. (TPD77-1)

**Response:** The comment is noted. This comment refutes the statement by the Radiation and Public Health Project, Inc.(RPHP) that there are large increases in the cancer rates in south eastern Florida counties that are attributable to the Turkey Point and St. Lucie nuclear power facilities.

A summary of the Florida Department of Health's statement regarding the calculations and findings of the data related to cancer rates in the counties near Turkey Point has been added to Section 4.7.1, Evaluation of Potential New and Significant Radiological Impacts on Human Health.

## A.1.10 Comments Concerning Category 1 Aquatic Issues

**Comment:** Clarification is needed regarding environmental impacts of the existing recirculating cooling canal system. (TPD78-1)

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**Comment:** 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. (TPD78-10)

**Response:** The comments are noted. A new Section 4.74 has been added to the SEIS to address this issue.

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# A.1.11 Comments Concerning Category 1 Terrestrial Issues

Comment: 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.
(TPD38-3)

Comment: 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. (TPD43-7)

Response: The comments are noted. The comments are supportive of license renewal at
 Turkey Point Units 3 and 4. The comments provide no new information, therefore, the
 comments will not be evaluated further. There was no change to the SEIS text.

Comment: 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. (TPD41-3)

Comment: Two things, however, remain as my most important reason for supporting therenewal of license at Florida Power and Light nuclear facility.

I ... Number two, what would happen to the local environment should Florida Power and Light beI denied relicensure?

I The vast expanse of primitive wetlands, the natural areas that Florida Power and Light are
I responsible for, we must keep that in mind when it comes to license renewal. By renewing the
I license it is my opinion that they're going to be able to continue to maintain and improve what
I they've already started. (TPD42-3)

Response: The comments are noted. The comments acknowledge the importance of the
manner in which FPL operates the site to the benefit of threatened and endangered species
(see Section 4.6). The appropriate descriptive information regarding the plant-specific ecology
of the site is addressed in Section 2 of the SEIS. The comments provide no new information,
therefore, the comments will not be evaluated further. There was no change to the SEIS text.

Comment: 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

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GSEIS (sic) should specify the types and quantities of herbicides applied, and the alternatives to spraying plants with defoliants. (TPD78-3)

**Comment:** Similarly, the FGSEIS (sic) 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 ground water 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. (TPD78-4)

**Response:** The comments are noted. Information on the herbicides used was added to the discussion in Section 2.1.7 and Section 4.2 of the SEIS. In general, herbicide use, as well as mechanical control of vegetation, within power line rights-of-way was evaluated in the GEIS and found to be of small significance at all plants. The GEIS was reviewed by EPA and this conclusion was not called into question at that time. The EPA comments do not provide additional information that would change that conclusion. Hence, the conclusion in the GEIS is retained in the SEIS.

**Comment:** 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. (TPD78-11)

**Comment:** 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. (TPD78-12)

**Response:** The comments are noted. A new Section 4.7.4 has been added to the SEIS to address this issue.

A.1.12 Comments Concerning Category 1 Postulated Accidents Issues

**Comment:** 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. (TPD34-13)

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Response: The comment is noted. The commenter requests a site-specific safety analysis of the impact of Hurricane Andrew on the Turkey Point Plant. Such an evaluation is outside the scope of license renewal. The impact of hurricane force winds and storm surges on the plant were analyzed as part of the original plant application, and is found in the licensee's safety analysis report. The comment provides no new information, and therefore, will not be evaluated further. The comment did not result in a modification of the SEIS text.

Comment: 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. (TPD64-3)

**Response:** The comment is noted. The risk from severe weather conditions, resulting in high I winds and flooding, were considered as part of the licensee's individual plant examination of 1 external events. In response to an NRC staff request for additional information (memo from 1 1 J. H. Wilson, NRC to T. F. Plunkett, FPL, dtd 31 Jan 2001, ML010320326) the applicant addressed the risk from hurricanes and demonstrated that the risk was small (memo from 1 R. J. Hovy, FPL, to NRC, dtd 30 Mar 2001, ML011000182). The staff agreed with the 1 licensee's assessment and provided the basis for this conclusion in Section 5.2.2.2 of the 1 ł SEIS. There was no change to the SEIS text.

1 **Comment:** 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 1 be deposited on an open body of water that could increase the dose to the population after the 1 accident. According to NUREG-0769, Addendum1; NUREG-0440, interdiction has the potential to reduce the dose by factors of from 2 to 10. Interdiction, which according to NUREG-1437, 1 1 page 5-63, could consist of "preventing use of the water or making contaminated food difficult 1 to obtain" may be difficult at this site on Biscayne Bay. NUREG-1437 page 5-94 states that 1 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 Ł designated sole source of drinking water for millions of people in South Florida. (TPD64-31) L

Comment: The Draft GEIS on Turkey Point should also analyze whether the dose from an accident at Turkey Point could exceed those in Section 5 of NUREG 1437, Volume 1 in a site-specific SEIS. For instance, Section 5.3.3.4.5 entitled "Ocean Sites" says that Seabrook has the "potential for producing a larger maximum individual doses than that of the LPGS 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

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LPGS generic ocean site. Page 5-85 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 (LPGS) results" contained in Table 5.24 and, thus, these issues should have been analyzed in the Draft GEIS supplement or in a site-specific SEIS. 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 GEIS 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. (TPD64-32)

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**Comment:** 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 SEIS 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 conclusion 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. (TPD64-33)

**Response:** The comments are noted. Table B-1 of 10 CFR Part 51 Appendix A states that the probability weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to ground water, and societal and economic impacts from severe accidents are small for all plants. The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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.

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1 The Licensee's Turkey Point site is probably the most unsafe site to store nuclear wastes in the 1 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 1 1 waste that will be created. The special circumstances that occur at Turkey Point are far too I important to be dismissed generically and should have been addressed in a site-specific SEIS and even the Draft GEIS that was conducted. (TPD64-36) 1

**Response:** The comment is noted. Absent new and significant information, the Commission's regulations (10 CFR Part 51) treat all spent fuel pool accidents, irrespective of what caused the 1 accident, as a generic Category 1 event, not requiring a site-specific analysis. The Commission 1 1 has made a distinction between reactor accidents and spent fuel accidents. In the past, the 1 NRC has considered the effects of severe weather phenomenon, including hurricanes, on 1 reactors generally. However, in NUREG-1738 (February 2001), the staff examined the effect of hurricanes as well as other external events on spent fuel pools in particular, and found the risks "very low" or negligible. The provisions of 10 CFR Part 51 cover environmental issues related 1 to onsite spent fuel storage generically, and all such issues, including accident risk, fall outside 1 the scope of license renewal.

1 Emergency response issues are considered current operating issues, and are not within the scope of license renewal. The GEIS describes onsite storage of low level waste during the 1 1 license renewal period as a generic Category 1 issue of SMALL potential impact not requiring a site-specific analysis.

1 The comment provides no new information; therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**1** Comment: Does the aging of reactors increase the chance of a serious accident? (TPD72-2)

1 **Response:** The comment is noted. Aging management issues are outside the scope of the 10 CFR Part 51 NEPA review, and will not be evaluated further in this SEIS. The comment 1 provides no new information and, therefore, will not be evaluated further. There was no change to the SEIS text.

# A.1.13 Comments Concerning Category 1 Uranium Fuel Cycle and Waste Management Issues

**Comment:** Upon the global environment in health we have a monster waiting to be unleashed about 400 million metric tons of spent nuclear fuel, which is festering like a boil on the face of humanity.

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The spent nuclear fuel 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 real and it is extremely dangerous to humanity. (TPD22-2)

**Comment:** 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 waste. (TPD29-5)

**Comment:** 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. (TPD32-5)

**Comment:** That (nuclear waste) 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 personal opinion here, I don't think they should be creating that nuclear waste. (TPD34-10)

**Comment:** Recently many problems have come to light as a result of the relicensing activities for Turkey Point.

The storage of high level waste. (TPD40-3)

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**Comment:** Additionally, according to NUREG CR 4982, Severe Accidents in Spent Fuel Pools in Support of Generic Issue 82, 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. (TPD64-4)

**Comment:** 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. (TPD66-1)

**Response:** The comments are noted. Onsite storage of spent nuclear fuel is a Category 1 issue. The safety and environmental effects of a long-term storage of spent fuel onsite has been evaluated by the NRC and, as set forth in the Waste Confidence Rule, the NRC generically determined that such storage could be accomplished without significant environmental impact. In the Waste Confidence Rule, the Commission determined that spent fuel can be stored onsite for at least 30 years beyond the licensed operating life, which may include the term of a renewed license. At or before the end of that period, the fuel would be moved to a permanent repository. The GEIS and the SEIS are based upon the assumption that storage of the spent fuel onsite is not permanent. No new information was provided by the

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1 comments. Therefore it will not be evaluated further. This comments did not result in a change 1 to the text of the SEIS.

**Comment:** The environmental risks for the continued operation of the Turkey Point reactors, 1 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 1 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 1 1 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 1 1 operation of this aged nuclear power plant located in one of the most environmentally sensitive areas in the world. (TPD64-23) 1

1 **Response:** The comment is noted. The comment suggests that impacts from the uranium fuel cycle were underestimated, thereby making impacts of alternatives appear worse than for 1 relicensing. Onsite storage of spent nuclear fuel is a Category 1 issue. The safety and 1 1 environmental effects of a long-term storage of spent fuel onsite has been evaluated by the 1 NRC and, as set forth in the Waste Confidence Rule, the NRC generically determined that such storage could be accomplished without significant environmental impact. In the Waste 1 Confidence Rule, the Commission determined that spent fuel can be stored onsite for at least 1 30 years beyond the licensed operating life, which may include the term of a renewed license. At or before the end of that period, the fuel would be moved to a permanent repository. The 1 GEIS and the SEIS are based upon the assumption that storage of the spent fuel onsite is not 1 permanent. No new information was provided by the comment. Therefore it will not be evaluated further. There was no change to the SEIS text.

## 1 A.1.14 Comments Concerning Category 2 Socioeconomic Issues

**Comment:** One of the most troubling aspects of deregulation is the disposition of the millions 1 of dollars held for the decommissioning of Turkey Point. I urge the NRC to become significantly 1 involved in this issue. If private companies are allowed to get control of this money and the 1 usual activities of mergers and acquisitions and spin-offs and selling of assets and bankruptcies 1 all occur, we may never see this money again. That would be a real environmental impact, new and significant. (TPD50-4)

**Response:** The comment is noted. NRC regulations require that funds be available to 1 decommission nuclear power plants. The applicable regulations are at 10 CFR 50.75. The comment, however, is beyond the scope of license renewal. This comment did not result in modification of the SEIS text.

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## Comment: Page 1-8 Line # 4

The number 13,000 homes is incorrect. The correct number is "over 250,000 homes" (TPD62-3)

Response: The comment is noted. The comment resulted in modification of the SEIS text.

**Comment:** 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 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. (TPD64-34)

**Response:** The comment is noted. There was extensive interviewing of several government and private social service agencies in Miami-Dade County. One of the purposes of the interviews was to identify any subsistence farming or subsistence fishing among low income or minority populations. No such activities were uncovered.

In addition, the NRC sent a letter to Miccosukee and other Native American tribes in the area. The letter informed them of the public meetings, invited them to attend and raise any concerns that the re-licensing of Turkey Point Units 3 and 4 would have on their traditional way of life. The tribes did not raise any concerns before the preparation of the draft SEIS (December 2000) or on the draft SEIS itself (July 2001). The GEIS evaluated the radiological consequences of accidents and determined they were SMALL at all sites. There was no change to the SEIS text.

**Comment:** 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. (TPD64-35)

**Response:** The comment is noted. There was extensive interviewing of several government and private social service agencies in Miami-Dade County. One of the purposes of the

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1 interviews was to identify any subsistence farming or subsistence fishing among low income or 1 minority populations. No such activities were uncovered. There was no change to the SEIS text.

1 **Comment:** The impact of Turkey Point present in the community is very significant. Turkey Point employs 800 people and another 500 seasonal workers. (TPD10-2) 

**Comment:** The spouses of Turkey Point employees are our teachers, our nurses, other 1 members in the work force for our community. (TPD10-3) 1

Comment: We know what the loss of economic generator is to this community because we've 1 had that happen to us, and that's in the form I can relate it to. Homestead Air Force Base. (TPD10-4)

1 **Comment:** Turkey Point employees get involved in community activities, volunteerism, the donations to the United Way. We can count on the employee and the company of FP&L. (TPD10-5) 1

**Comment:** Turkey Point employees are caring neighbors to communities surrounding the 1 plant. Its employees make significant contributions to the community and to civic organizations. (TPD12-5)

**Comment:** 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. (TPD12-6)

1 **Comment:** Turkey Point is an important economic factor in the community. The payroll for around 800 employees tax dollars, purchases and contributions to local United Way agencies help in the area. (TPD14-13)

**Comment:** Turkey Point employees are active in their churches, in scout organizations, PTA, little leagues and even local Government. (TPD14-14)

**Comment:** Taking away Turkey Point would have a big impact on the community. (TPD15-8)

I **Comment:** Florida Power and Light, the IBEW and its employees raise over a million dollars for community needs in Miami-Dade county. Turkey Point itself employees contribute over 1 \$150,000.00. (TPD23-2)

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**Comment:** In terms of services this 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. (TPD23-3)

**Comment:** Turkey Point itself has 62 leadership givers which is a tremendous commitment. These are people who give \$1,000.00 or more to United Way for health and human services. (TPD23-4)

**Comment:** 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. (TPD23-5)

**Comment:** FPL actively supports the community and are a part of the community and help and aid and assist in every way possible agriculture in Dade County. (TPD24-2)

**Comment:** Because of the facilities at FPL, the Scout Camp, provides the perfect facility to train leaders. The facilities are also used to train Boy Scouts in the Atomic Energy Merit Badge. (TPD26-1)

**Comment:** Turkey Point facility is an important economic engine in itself. The number of people employed and their wage base is unparallel in our area. (TPD27-3)

**Comment:** 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. (TPD27-5)

**Comment:** 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. (TPD30-2)

**Comment:** They've been good neighbors in this community for many, many years. (TPD35-3)

**Response:** The comments are noted. The comments are supportive of license renewal at Turkey Point Units 3 and 4, and are general in nature. The comments provide no new information; therefore, the comments will not be evaluated further. There was no change to the SEIS text.

**Comment:** I'm here tonight on behalf of the City of Homestead though, because the plant is a necessity to our local economy as well, ... (TPD36-2)

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1 Comment: I would like to comment concerning the relationship as far as a good neighbor that 1 the Turkey Point facility has had with our police department over the years. It's been very I 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 1 1 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, I 1 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 1 to let us use their training facility on a regular basis for firearms regualification. We probably 1 1 utilize the site once a month for tactical training. Their training house is there that they provide along with the range gualification courses that they provide us. (TPD37-2)

Comment: 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. (TPD41-2)

**Comment:** The payroll for 800 some employees, tax dollars, purchases and contributions to local United Way agencies help in this area. 1

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. (TPD43-8)

**Comment:** Our neighbors have told us that taking away Turkey Point would have a big impact on this community and we agree with that conclusion. (TPD44-4)

**Comment:** 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 1 services here in the Homestead Florida City area and those services include scouting, mentoring, youth programs, early childhood development programs, therapeutic programs, et cetera.

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 1 community.

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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. (TPD48-1)

**Comment:** Second, license renewal will preserve good jobs for this area and will continue to support the economy (TPD49-2)

**Comment:** For years Turkey Point and its employees have contributed to the United Way, Boys Scouts and Girls 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. (TPD52-2)

**Comment:** Besides being one of the 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. (TPD52-3)

**Comment:** 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. (TPD55-3)

**Comment:** 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. (TPD56-4)

**Comment:** 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 or business. (TPD56-5)

**Comment:** 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

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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. (TPD59-2)

Comment: 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. (TPD59-3)

Comment: 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. (TPD63-3)

Comment: I know, and have known, several employees who work at the Plant and live in the
 surrounding areas who participate in numerous civic organizations and support our local
 community events. (TPD63-4)

Comment: 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. (TPD63-5)

Comment: 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. (TPD67-3)

Comment: 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, it's non polluting power and its tremendous payroll impact.
 (TPD67-4)

Comment: 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 a responsible citizen. (TPD67-5)

Comment: Whereas, Florida Power and Light's Turkey Point Plant is located in the
 Homestead/Florida City area and provides 900 jobs. (TPD70-2)

Comment: 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.
(TPD71-2)

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**Comment:** 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. (TPD73-5)

**Comment:** 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. (TPD73-6)

**Comment:** Financial security for employees, contractors and support business who employ several thousand people. (TPD76-3)

**Response:** The comments are noted. Socioeconomic issues specific to the plant are Category 2 issues and are addressed in Section 4.4 of the SEIS. The comments support license renewal at Turkey Point Units 3 and 4. There was no change to the SEIS text.

A.1.15 Comments Concerning Category 2 Threatened and Endangered Species Issues

**Comment:** You can go to any of the discharge canals in power plants and you are going to see the family of manatees, especially in the winter months. They go there because it is warm. (TPD25-6)

**Comment:** 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. (TPD31-2)

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**Response:** The comment is noted. The manatee is not found in the closed cooling canal system at the Turkey Point site. It is, however found in the drainage canals to the west and south of the closed cooling canal system, in the turning basin used by the fossil units, and in Biscayne Bay. The comment acknowledges the importance of the manner in which FPL operates the site to the benefit of threatened and endangered species (see Section 4.6). The appropriate descriptive information regarding the plant-specific ecology of the site is addressed in Section 2 of the SEIS. There was no change to the SEIS text.

**Comment:** 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

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I 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 a that. (TPD34-14)

1 **Response:** The comment is noted. The NRC consulted with the US Fish and Wildlife Service and National Marine Fisheries Service, the agencies responsible for determining impacts to 1 species protected under the Endangered Species Act. These agencies found that relicensing 1 1 would have no significant effects on these species. In addition, impacts of accidents are not required for analysis under ESA under US Fish and Wildlife Service guidelines. The comment 1 provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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 1 the project. The NRC failed to ask the FWS to study the impact that offsite consequences from 1 1 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 1 threatened and endangered species that inhabit this vast ecosystem, and that could be 1 adversely affected by the proposed action. (TPD64-24)

1 **Response:** The comment is noted. Under ESA guidelines, federal agencies are required to 1 address the impacts of proposed federal actions on species listed for protection under the ESA. ESA guidelines do not require addressing impacts of accidents. The NRC evaluates the impacts on Federally-protected species of routine operations only. There was no change to the SEIS text.

Comment: 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. (TPD12-4)

1 **Comment:** Turkey Point remains a guardian of our natural resources. Only about a tenth of 1 the property is used for power production and most of the land provides a home to about seventeen threatened or endangered species. The American crocodile has found safe haven 1 and a nesting ground in the plant cooling canals. This is one of the three areas in the country 1 1 where the crocodile is living and indeed thriving. (TPD14-10)

**Comment:** In recognition of efforts in land preservation, FPL was presented the Edison Electric Institute Environmental Award for Turkey Point's land management work earlier this 1 year, and the Greater Miami Chamber of Commerce Environmental Award in 2000, both 1 recognizing FPL's efforts for preservation and education on the endangered American I crocodile. (TPD15-5)

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**Comment:** Turkey Point has done a remarkable job in protecting and increasing the population of the endangered American crocodile. (TPD27-6)

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**Comment:** And every year we're producing, or the cooling canal system is producing over 300 crocodile babies. It's really a very good significant environment story. (TPD38-1)

**Comment:** 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. (TPD44-2)

**Comment:** 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. (TPD56-3)

**Comment:** Just one example is the remarkable job they have done in protecting and increasing the population of the endangered American Crocodile. (TPD67-6)

**Comment:** 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. (TPD73-4)

**Comment:** 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. (TPD75-3)

**Response:** The comments are noted. The comments acknowledge the importance of the manner in which FPL operates the site to the benefit of threatened and endangered species (see Section 4.6). The appropriate descriptive information regarding the plant-specific ecology of the site is addressed in Section 2 of the SEIS. The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

**Comment:** We have Protection of the some of the last salt water crocks and rare bird of south Florida. (TPD76-6)

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Response: The comment is noted. The comment provides no new information and will not be evaluated further. It is noted that the comment is in support of license renewal of Turkey Point 1 Units 3 and 4. There was no change to the SEIS text.

L **Comment:** Page A-18; The GSEIS should provide more detailed responses to specific 1 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 (sic). (TPD78-5)

Response: The comment is noted, Consultation with U.S. Fish and Wildlife Service was initiated and a Biological Assessment submitted. On December 7, 2001, the FWS informed the 1 NRC that, based on the biological assessment, the proposed relicensing of the Turkey Point Plant is not expected to significantly impact fish and wildlife resources. The results of this consultation have been incorporated into the final SEIS in Section 4.6.

## A.1.16 Comments Concerning Related Federal Projects

**Comment:** 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...

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. (TPD34-12)

**Response:** The comment is noted. NRC consulted with other federal agencies responsible for protection of plants, fish, and wildlife resources in the area, as well as with the US Army Corps of Engineers, which is responsible for restoration of the Everglades ecosystem. None of these agencies, nor any member of the public, nor the staff's review, identified any causal link between operation over an additional 20 years and adverse impact to the Everglades. There was no change to the SEIS text.

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**Comment:** 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. (TPD64-9)

**Comment:** 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 CFR. 51.53(c) 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 fail (sic) swoop, the ASLB swept a very important environmental issue that should be analyzed in a sitespecific SEIS under the proverbial rug. (TPD64-17)

**Response:** The comments are noted. NRC consulted with other federal agencies responsible for protection of plants, fish, and wildlife resources in the area, as well as with the US Army Corps of Engineers, which is responsible for restoration of the Everglades ecosystem. None of these agencies, nor any member of the public, nor the staff's review, identified any causal link between operation over an additional 20 years and adverse impact to the Everglades. There was no change to the SEIS text.

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**Comment:** 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

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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. (TPD64-41)

Response: The comment is noted. It is true that cooperating agencies have joint
 responsibility for the proposed action. In the case of Turkey Point relicensing, the agencies
 mentioned in the comment did not share in the proposed action, and therefore are not
 cooperating agencies. However, NRC did specifically consult with these agencies regarding
 potential impacts of relicensing. There was no change to the SEIS text.

# A.1.17 Comments Concerning Alternatives

Comment: 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 torelicensing. (TPD50-2)

Response: The comment is noted. Information on the proposed pipeline from Grand Bahama
 Island to Port Everglades and the Gulfstream Natural Gas System pipeline from Mobile,
 Alabama to Palm Beach County, Florida has been added to Section 8.2.2 of the SEIS.

Comment: 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. (TPD15-2)

Response: The comment is noted. Environmental impacts associated with various
 alternatives to renewal of the operating licenses for Turkey Point Units 3 and 4 are discussed in
 Section 8 of the SEIS. There was no change to the SEIS text.

Comment: I moved from the northeast because of the pollution and I know that comes from
fossil plants and I don't want to see any more fossil plants down here in South Florida.
(TPD31-4)

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**Response:** The comment is noted. Air quality impacts from Turkey Point Plant operations were evaluated in the GEIS and found to be minimal. The comment provides no new information and, therefore, will not be evaluated further.

**Comment:** The study of alternatives I think was very obscure. As I just said, in the report is 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 environment. Some of it's in the environment for hundreds of thousands of years. (TPD34-9)

**Response:** The comment is noted. Rooftop solar applications are discussed in Section 8.2.6.2 of the SEIS. Section 8.2.6.2 concludes that implementation of solar technologies on a scale large enough to replace Turkey Point Units 3 and 4 would likely result in LARGE environmental impacts. The text in Section 8.2.6.2 has been editorially modified for clarity. Environmental issues associated with nuclear waste are Category 1 issues. NRC's findings for issues related to the uranium fuel cycle and waste management are set out in 10 CFR, Subpart A, Appendix B, Table B-1.

**Comment:** 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. (TPD49-3)

**Response:** The comment is noted. Alternative power generation is addressed in Section 8 of the SEIS. The comments provides no new information, and supports license renewal at Turkey Point Units 3 and 4. There was no change to the SEIS text.

**Comment:** The Draft SEIS also needs to look at the conversion of the Fort St. Vrain 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.

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Natural gas conversion along with Project Calypso should be the strongest alternative to the license renewal in the Final SEIS. (TPD50-3)

**Response:** The comment is noted. Conversion of Turkey Points Units 3 and 4 to a natural gas fired combined cycle plant would have environmental impacts that are generally comparable to those for a new combined cycle plant as discussed in Section 8.2.2 of the SEIS. An exception would be that a smaller amount of land would need to be disturbed with conversion. Overall, however, the environmental impacts associated with conversion would be greater than renewal of the OLs for Units 3 and 4. An additional disadvantage of conversion is that it is unlikely that

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conversion activities could begin until Units 3 and 4 are permanently shut down. Until the
 conversion is completed, FPL would be without the 1386 MW(e) generated by Units 3 and 4.
 There was no change to the SEIS text.

Comment: Modern technology, there's plenty of modern technology that seems to be beingignored. (TPD57-4)

Comment: One thing mentioned is fear of the economy dropping. But if we focus on newenergy there will be a new economy that will come about. (TPD57-5)

Response: The comments are noted. The comments are general in nature. The comments
provide no new information, therefore, the comments will not be evaluated further. There was
no change to the SEIS text.

Comment: 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. (TPD59-4)

Comment: Renewal of Turkey Point's license is far more economical than building a new
 power plant. (TPD71-3)

Response: The comments are noted. The comments are supportive of license renewal at
 Turkey Point Units 3 and 4. The comments provide no new information, therefore, the
 comments will not be evaluated further. There was no change to the SEIS text.

# A.1.18 Comments Concerning Safety

Comment: The performance of Turkey Point is top notch, thanks to the 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. The employees have also
 worked diligently through effective maintenance programs to sustain the option for continued
 plant operations well beyond the initial forty year license. (TPD14-3)

Comment: 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. (TPD20-1)

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**Comment:** Isn't there a legal requirement for the NRC, not the licensee, to provide a safety evaluation for a final EIS? (TPD20-4)

**Comment:** Another conflict of interest may arise if the licensee thinks that a negative safety assessment would damage its chances of obtaining a license renewal. (TPD20-10)

**Comment:** Request a call for safety hearings for the Turkey Point plant. (TPD22-1)

**Response:** The comments are noted. Operational safety is outside the scope of the evaluation under 10 CFR Part 51. The results of the NRC staff's review of the licensee's aging management programs for structures, systems, and components within the scope of license renewal and conducted pursuant to 10 CFR Part 54 will be documented in a safety evaluation report separate from this SEIS. There was no change to the SEIS text.

**Comment:** A study of spent fuel consequences by Brookhaven National Laboratories, that was commissioned by the Nuclear Regulatory Commission stated 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 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. (TPD20-2)

**Response:** The comment is noted. The Commission's regulations (10 CFR Part 51) treat all spent fuel pool accidents as a generic Category 1 event, not requiring a site-specific analysis. The assumptions in the Brookhaven National Laboratories report (NUREG/CR-6451) are very conservative and were never endorsed by the NRC. A more recent study on spent fuel pool risk (Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants, NUREG-1738) concluded that the risks from spent fuel pools are low and well within the Commission's safety goals. NUREG-1738 found that the consequences of an accident involving a spent fuel pool fire resulting in a large radioactive release could be significant. However, because of the low likelihood of occurrence of such an event, the overall risk to the public is low. Although NUREG-1738 is directed at quantifying the risk for decommissioning reactor spent fuel pools, the results are arguably bounding for operating reactor spent fuel pools. There was no change to the SEIS text.

**Comment:** How can the NRC ignore its own standard review plan? (TPD20-5)

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Response: The comment refers to siting hazards and is outside the scope of license renewal.
 The staff conducted and independent review of the issues as set forth in NUREG-1555,
 Supplement 1, the Standard Review Plans for Environmental Reviews for Nuclear Power
 Plants, Supplement 1: Operating License Renewal. There was no change to the SEIS text.

Comment: 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." 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 the 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. The Judge asked
them "where in the GEIS is the safety study for spent fuel pool damage caused by hurricanes?"
The lawyers had no answers. (TPD20-3)

Comment: 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? (TPD20-6)

Comment: How can a citizen concerned for its own safety get information that's exclusivelyheld by the licensee? (TPD20-7)

Comment: 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? (TPD20-8)

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**Response:** The comments are noted and are outside the scope of license renewal. These issues, related to operational safety, have been referred to the appropriate program office within the NRC. They do not add any new information. There was no change to the SEIS text.

**Comment:** 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. (TPD26-2)

**Response:** The comment is noted. To the extent that the comment pertains to aging within the scope of license renewal, these issues will be addressed during the parallel safety review performed under 10 CFR Part 54. Aging management issues are outside the scope of 10 CFR Part 51 and will not be evaluated further in this SEIS. The comment is noted and is supportive of nuclear power. The comment provides no new information and, therefore, will not be evaluated further. There was no change to the SEIS text.

**Comment:** The last speaker from the public attending the meeting 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. (TPD32-3)

**Response:** The commenter is referring to a verbal comment made by another member of the public, at the July 17, 2001 evening public meeting at Homestead, FL. The statement made by the member of the public referred to his experience at nuclear and non-nuclear facilities. It is not clear whether the plants he referred to as only caring about "delivering the product" were nuclear or non-nuclear plants. On a daily basis, NRC resident inspectors monitor the performance of nuclear power plants. On a quarterly basis, nuclear power plants submit performance indicators on the plant's performance. If the performance indicators cross established thresholds, the NRC staff will take an escalating series of actions until performance improves.

On a monthly basis the NRC staff reviews the trend in allegations received concerning each nuclear power plant. If there is an increasing trend of allegations, the staff conducts a more thorough analysis of the potential causes of the increasing trend. If the staff finds that work environment issues are contributing to the trend, it will engage the licensee to address the work environment issues.

In addition to the monthly review of allegations, the staff also assesses the work environment during inspections of the licensee's corrective action program. As part of this inspection, the NRC staff asks licensee employees how licensee management reacts when they raise safety or

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regulatory issues. Through these mechanisms, the NRC already monitors the performance of
 all nuclear power plants.

The comment is noted. The comment provides no new information, therefore, the comment will not be evaluated further. There was no change to the SEIS text.

Comment: 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.
(TPD34-3)

1 Response: The comment is noted. The Commission's regulations (10 CFR Part 51) treat all spent fuel pool accidents as a generic Category 1 event, not requiring a site-specific analysis. 1 A recent study on spent fuel pool risk (Technical Study of Spent Fuel Pool Accident Risk at 1 Decommissioning Nuclear Power Plants, NUREG-1738) concluded that the risks from spent fuel pools are low and well within the Commission's safety goals. NUREG-1738 found that the ł consequences of an accident involving a spent fuel pool fire resulting in a large radioactive 1 release could be significant. However, because of the low probability of occurrence of such an 1 1 event, the overall risk to the public is low. Although NUREG-1738 is directed at quantifying the risk for decommissioning reactor spent fuel pools, the results are arguably bounding for 1 operating reactor spent fuel pools. There was no change to the SEIS text. 1

**Comment:** Speaker comments that "nuclear power plants can be dangerous". (TPD34-2)

Comment: 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. (TPD34-5)

Comment: Therefore, the Miami Group of Sierra Club calls for safety hearings and an
 Environmental Impact Statement that studies the site specific health and safety issues.
 (TPD40-6)

Comment: 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. (TPD53-1)

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**Response:** The comments are noted. The comments provide no new information, therefore, the comments will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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. (TPD54-3)

**Response:** The comment is noted. Safety issues are outside the scope of this SEIS. It is noted that the comment is in support of license renewal of Turkey Point Units 3 and 4. There was no change to the SEIS text.

**Comment:** 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. (TPD64-2)

**Response:** The comment is noted. The NRC will not relicense a facility unless it can be operated safely. There was no change to the SEIS text.

**Comment:** 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 (sic) hurricane; (TPD64-18)

**Comment:** 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 siting of Turkey Point in a hurricane zone in light of Hurricane Andrew, (TPD64-19)

**Response:** The comments are noted. This is outside the scope of the SEIS. There was no change to the SEIS text.

**Comment:** Relicensing a twenty-nine year old nuclear power plant, a renewal that isn't 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.

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Add this increase 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?

1 The current operating permit does not expire for ten to twelve years. Why can't we wait until then?

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. (TPD22-3) 1

**Comment:** Speaker had comment regarding "specific concern about vessel and annealing the vessel and annealing or the need for annealing." (TPD34-1)

**Comment:** 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. (TPD34-8)

**Comment:** Recently many problems have come to light as a result of the relicensing activities for Turkey Point.

The deterioration of aging plant safety components. (TPD40-5)

**Comment:** Number one, it's an old facility. (TPD57-1)

I **Comment:** The operation of these aged and embrittled nuclear power reactors for twenty years beyond the original license will cause more radioactive fission products to accumulate 1 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 1 includes priceless Everglades and Biscayne National Parks. (TPD64-5)

**Comment:** An analysis of the aging reactor pressure vessels at Turkey Point and any impacts 1 that such aging could have on the human environment were not analyzed in the Draft GEIS. 1 Such an analysis was necessary, not only to ensure the public health and safety, but also for 1 the cost benefit analysis of alternatives required by NEPA. The replacement cost of the reactor 1 pressure vessels at Turkey Point could be prohibitive and annealing would create further 1 1 environmental issues that should have been addressed. It is my understanding that no nuclear power plant has ever replaced its vessel. (TPD64-25)

**Comment:** Additionally, the Draft GEIS did not analyze in a site-specific fashion whether the 1 age-related degradation of multiple components at Turkey Point could increase the chance that

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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. (TPD64-26)

**Comment:** 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, 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. (TPD64-28)

**Response:** The comments are noted. To the extent that the comments pertain to aging within the scope of license renewal, those issues will be addressed during the parallel safety analysis review performed under 10 CFR Part 54. Aging management issues are outside the scope of 10 CFR Part 51 and will not be evaluated further in this SEIS.

As discussed in Section 3.7.3 of this SEIS, the adequacy of a plant's design basis is outside the scope of license renewal. The impacts, or potential impacts, of hurricanes on Turkey Point Units 3 and 4 were addressed during the design review conducted before the operating licenses were issued. Emergency response issues are considered current operating issues, and are not within the scope of license renewal.

The comments provide no new information and, therefore, will not be evaluated further. There was no change to the SEIS text.

**Comment:** 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 2,572,526 people presently living within 50 miles of the Turkey Point plants. According to a chart entitled "Regional Population Distribution year 2025," there will be 3,952,697 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

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proposed action may have on the rapidly growing population in the South Florida area. (TPD64-29)

1 **Comment:** 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 1 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 CFR.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. (TPD64-30)

Response: The comments are noted. The staff evaluated impacts under current population conditions. Safety reviews and emergency preparedness are an ongoing process at all plants, including Turkey Point, and is outside the scope of license renewal. There was no change to the SEIS text.

**Comment:** The runway (for the Homestead Air Force Base that is being considered for conversion to a commercial airport) is located 4.9 miles from the Turkey Point Nuclear Plant and I feel there is a significant safety hazard. (TPD65-1)

Response: The comment is noted. The Record of Decision for disposition of Homestead Air 1 Force Base does not include conversion to a commercial airport. This issue has been referred to the appropriate NRC program office. There was no change to the SEIS text.

**Comment:** Recently many problems have come to light as a result of the relicensing activities for Turkey Point.

The commercial airport safety assessment. (TPD40-2)

**Comment:** I believe the NRC wrongly used a DOE air crash formula instead of their own 1 1 Standard Review Plan, NUREG-0800. The twin 400 foot smokestacks were omitted from the 1 calculations, the bird airstrike hazard was underestimated, and foreign general aviation as a crash prone category was completely ignored. (TPD65-2)

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**Response:** The comments are noted. This issue is an operational safety issue, and therefore, is outside the scope of license renewal. The comments have been referred to the appropriate NRC program office. There was no change to the SEIS text.

**Comment:** 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 work would just go to dust? (TPD57-3)

**Comment:** 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? (TPD57-6)

**Comment:** I am upset that I cannot get the necessary information that was used to calculate air crashes into Turkey Point. (TPD65-3)

**Comment:** Isn't there a NEPA requirement for the NRC, not the licensee, to provide a safety evaluation for an Final SEIS? (TPD65-4)

**Comment:** 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? (TPD65-6)

**Comment:** 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. (TPD66-4)

**Response:** The comments are noted. Operational safety issues are outside the scope of this SEIS. There was no change to the SEIS text.

# A.1.19 Comments Regarding a Need for Power

**Comment:** 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. (TPD12-2)

**Comment:** Another factor to consider is Turkey Point's ability to help meet Florida's energy needs. Turkey Point Power can help sustain the economic growth and maintain the quality of life in the area. The plant is strategically located in the FPL generating system and Turkey Point is among the lowest cost producers of electricity in the FPL system, so it will help keep electric bills low. (TPD14-9)

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Comment: An important environmental benefit 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. (TPD15-7)

1 Comment: Turkey Point meets the energy needs in our community. (TPD23-1)

Comment: Nuclear energy is one of the most reliable sources of energy that we have today.
 (TPD25-2)

I Comment: Nuclear power is the most reliable source of energy that we have today.I (TPD25-4)

Comment: ... there are pros and cons, and I believe that nuclear power far out-weighs the
 benefits that we derive from it... (TPD25-7)

Comment: Today we are seventy percent dependent on foreign oil, and If we lose power we
 would have to come up with alternatives for sources of energy, and not next week, not ten
 years from now. We need today. (TPD25-10)

I Comment: Nuclear power is the answer. (TPD25-11)

**Comment:** One of the things we do have in South Florida is adequate power. (TPD27-2)

Comment: I want to certainly ask that you renew, if you will, their license so they continue to provide power to this community. (TPD35-4)

Comment: Two things, however, remain as my most important reason for supporting therenewal of license at Florida Power and Light nuclear facility.

I Number one, the abundance of locally generated affordable power (TPD42-2)

Comment: 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. (TPD43-6)

Comment: FPL must provide power plants to keep up with this growing demand and insure an
 ample supply of electricity. (TPD44-3)

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**Comment:** 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. (TPD56-2)

**Comment:** The power that we produce out there, we strive to make cheaper power. (TPD56-7)

**Comment:** One of the things we do have is adequate power. (TPD67-2)

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**Comment:** Turkey Point generated over 1,400 million watts of electricity, enough to supply the annual needs of approximately 250,000 homes (TPD70-3)

**Comment:** We believe Turkey Point is both safe and cost efficient, ensuring safe, high-quality, low-cost power. (TPD70-5)

**Comment:** 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. (TPD73-2)

**Comment:** Turkey Point is the lowest cost producer of electricity in the FPL system (TPD76-4)

**Comment:** Electricity provided from Turkey Point powers an area from Miami International Airport and south. (TPD76-5)

**Response:** The comments are noted. The need for power is specifically directed to be outside the scope of license renewal (10 CFR 51.95 (c)(2)). The comments are in support of license renewal of Turkey Point Units 3 and 4. The comments provide no new information and, therefore, will not be evaluated further. There was no change to the SEIS text.

## A.1.20 General Comments

**Comment:** The Department of Interior has reviewed the Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 5 Regarding Turkey Point Units 3 and 4 and has no comments at this time. (TPD33-1)

**Response:** The comment is noted. There was no change to the SEIS text.

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Comment: Speaker comments "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 1 1 leave it to future generations -- but public involvement is very important." (TPD34-4)

1 Response: The comment is noted. The NRC agrees that public involvement is very important to the regulation of nuclear energy. There was no change to the SEIS text. 1

I Comment: More detail is also needed regarding the facility's compliance with 40 CFR Part 112, regarding storage of petroleum products. (TPD78-2) 1

1 **Response:** The comment is noted. Turkey Point Units 3 and 4 are exempted from review and filings under 40 CFR Part 112 because their diesel storage tanks are less than 1 million gallons in size. This exemption is certified under 40 CFR Part 112.20 paragraph e, Appendix C. There 1 1 was no change to the SEIS text.

1 **Comment:** 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 1 I concerns. (TPD78-6)

1 Response: The comment is incorrect. Water quality impacts due to barge deliveries are 1 addressed in the SEIS under the Alternatives Section (8.2.4), as stated in the response to the comment. Current barge traffic supports only the fossil Units 1 and 2; therefore current barge impacts on water quality are outside the scope of this SEIS. There was no change to the SEIS text.

**Comment:** 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, 1 and the applicant (Florida Power and Light) has had numerous inspections of its facilities by EPA for compliance with this EPA program. (TPD78-8)

Response: The comment is noted. The nuclear power plants are excepted from this requirement because the storage for the diesel generators is less than the 1 million gallon minimum set 40 CFR Part 112. There was no change to the SEIS text.

**Comment:** The table should be amended to include this approval requirement, as well as any I regulatory authority the U.S. Coast Guard has via The Oil Pollution Act of 1990, Facility I Response Plan (FRP) requirements for oil storage facilities. A release or discharge from these

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facilities could potentially present a significant or substantial harm to the environment. (TPD78-9)

**Response:** The comment is noted. This comment refers only to the operation of the fossil plants, not the nuclear facilities. There was no change to the SEIS text.

## A.1.21 Editorial Comments

**Comment:** Page 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 land use information is immaterial and should be deleted. (TPD62-13)

**Response:** The comment is noted. Table 2-11 of the SEIS provides information on the land use status of the potentially affected environment. This information is potentially useful to readers of the SEIS regardless of FPL's plans regarding refurbishment or FPL's tax payments. There was no change to the SEIS text.

**Comment:** Page 2-4, Line # 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. (TPD62-4)

**Comment:** Page 2-43, Line # 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. (TPD62-14)

**Response:** The comments are noted. The first paragraph of Section 2.2.8.4 points out that visual and noise impacts from Units 1 and 2 are not considered in the SEIS. The information on the stacks is presented as part of the environmental setting to the same extent as is the rest of the built and natural environment of the site. There was no change to the SEIS text.

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Comment: Page 2-37, Table 2-8

1 Because Turkey Point is located in a high population area that has no growth control measures 1 (Page 4-21, beginning on line 14), the Table 2.8 housing information is immaterial and should 1 be deleted. (TPD62-11)

Comment: Page 2-39, Line # 1

1 Education information is pertinent only if an applicant plans refurbishment. Because FPL plans no refurbishment (Chapter 3), the education information should be deleted. (TPD62-12)

1 **Comment:** Page 2-45, Table 2-13

The age distribution information is immaterial and should be deleted. (TPD62-15)

Comment: Page 2-43, Line # 13

The transient population information is immaterial and should be deleted. (TPD62-16)

Comment: Page 2-47, Section 2.2.8.6 

1 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 1 section. With the exception of the tax information (on page 2-50), the economic information is 1 1 not relevant and should be deleted. (TPD62-17)

1 **Response:** The comments are noted. Section 2 describes the current baseline of socioeconomic activity in the study region. It serves as the basis for evaluation of the relicensing (Section 4) and alternatives (Section 8). There was no change to the SEIS text.

Comment: Page 4-7, Line # 36

I 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 1 with cooling ponds are applicable to Turkey Point Units 3 and 4. (TPD62-19)

1 **Response:** The comment is noted. Evaluation of impacts on fish and wildlife is not limited by the designation of the cooling canal waters as not being waters of the United States. There was no change to the SEIS text.

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## Comment: Page 4-25, Line # 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. (TPD62-22)

**Response:** The comment is noted. Although there is substantial circumstantial evidence that historic properties are not likely to be found at the Turkey Point site, a survey for cultural resources and historic properties has not been conducted at the site or along associated transmission corridors. Lacking such site-specific survey information it is not possible to conclude that there is no potential for discovery of previously unknown sites. The wording is appropriate for the information available. There was no change to the SEIS text.

Comment: Page 4-40, Line # 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 cancers 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." (TPD62-28)

**Response:** The comment is noted. The proposed text is consistent with the updated information provided in Section 4.7.1. The comment resulted in modification of the SEIS text.

Comment: Page 4-42, Line # 32-41.

The GDC are not applicable to Turkey Point as stated. The Criterion 2 reference is correct as it is referenced in the SAR. The SRP is not applicable to Turkey Point which was licensed before issuance of the SRP in 1987. (TPD62-29)

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# Appendix A

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**Comment:** Page 1-5, Line # 26-27

1 Should read "contain an analysis of any Category 1 issues unless there is new and significant 1 information on a specific issue - this is pursuant to 10 CFR 51.53 (c) (3) (iii) and (iv)." I (TPD62-2)

Comment: Page 2-5, Line # 17

Delete the words "equilibrium core" and "rate". This clarifies the sentence. (TPD62-5) 1

**Comment:** Page 2-7, Line # 15 1

1 Revise sentence to read, "FPL does not use biocontrol chemicals in the circulating water system." (TPD62-6)

I Comment: Page 2-7, Line # 23

1 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 1 accordingly. (TPD62-7)

**Comment:** Page 2-13, 4-24 Line # 15, 38

Change "an additional" to "Up to an additional...". (TPD62-8)

Comment: Page 2-20, Line # 1

It is unclear what boilers are being referred to. The nuclear plant does not have boilers. (TPD62-9)

Comment: Page 2-21, Line # 8

I Replace "Within southern Biscayne Bay, Card Sound, and the Turkey Point cooling canal I system are..." with "Within the vicinity of Turkey Point are..." As written, the sentence implies 1 that there are 11 protected species within the cooling canal system, an implication that is 1 incorrect and inconsistent with the rest of the paragraph. (TPD62-10)

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#### Appendix A

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#### **Comment:** Page 2-50, Line # 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. (TPD62-18)

Comment: Page 4-22, Line # 24

Change the wording to read, "FPL assumed an increase of 60 employees during the license renewal period." (TPD62-20)

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**Comment:** Page 4-22, Line # 25

Change 185 to 184. The environmental report states that there will be 184 new jobs. (TPD62-21)

Comment: Page 4-33, Line # 29

Revise the bullet to read, "Continue to deny public access to the canals." Other bullets should also be stated in terms of continuing action. (TPD62-23)

Comment: Page 4-36, Line # 3

The word "states" should be "asserts." (TPD62-24)

**Comment:** Page 4-36, Line # 6

The words "referred to" should be "alleges." (TPD62-25)

Comment: Page 4-36, Line # 8

The word "stated" should be "asserts." (TPD62-26)

**Comment:** Page 4-37, Line # 31, 32

"FPL 2000c" is an incorrect reference for the REMP Report. (TPD62-27)

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# Appendix A

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Comment: Page 5-2, Line # 21

Delete "and Section 5.1 of this SEIS" and add at the end of the sentence "and briefly discussed in Section 5.1 of this SEIS." (TPD62-30)

**Comment:** Page 5-3, Line # 29

Insert after the word "events", "including for example hurricanes and flooding". (TPD62-31)

**Comment:** Page 5-6, Line # 28

Change "core melt accidents" to "postulated core melt scenarios". (TPD62-32)

Comment: Page 5-19, Sec. 5.2.5 second line

Change sentence to read, "The cost estimates conservatively excluded the cost...". (TPD62-36)

**Comment:** Page 5-19, 2nd paragraph 5th 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...". (TPD62-37)

Comment: Page 8-24, Line # 6

Insert the word "partially" between the words "pipeline through". (TPD62-39)

Comment: Page 8-24, Line # 29

Replace the word "approximately" with "more than...". North of Lake Okeechobee to Turkey Point would be between 100 and 200 miles. (TPD62-40)

**Comment:** Page 8-60, 8-61 See also Table 8-9 Line # 29, 3 respectively

The 186 MW(e) shortfall (1386-1200) would have to be made up by MW and MW-hrs. Running Turkey Point 1 & 2 at a higher capacity factor will not affect peak megawatt output. (TPD62-41)

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