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DEPARTMENT OF
ENVIRONMENTAL PROTECTION

AUG 27 2009

SITING COORDINATION

MEMORANDUM TO: Stephanie M. Coffin, Chief
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

FROM: Ryan Whited, Chief
Environmental Projects Branch 2
Division of Site and Environmental Reviews
Office of New Reactors

Patricia J. Vohr
FOR

SUBJECT: ACCEPTANCE REVIEW RESULTS FOR THE TURKEY POINT,
UNITS 6 AND 7, COMBINED LICENSE APPLICATION

The Environmental Projects Branch 2 (RAP2) has completed its acceptance review of the Turkey Point, Units 6 and 7 combined license application (COLA) submitted by Florida Power & Light Company (FPL). This review covered Part 3 (Chapters 1 through 10) of the COLA, which is the environmental report (ER), and Part 6 (Limited Work Authorization and Site Redress Plan) for which RAP2 has primary review responsibilities and, in addition, applicable documentation referenced in NUREG-1555, the Environmental Standard Review Plan, and Regulatory Guide 4.2.

This memorandum summarizes the results of the acceptance review in accordance with NRO-REG-100. The staff interacted with FPL officials on several occasions from July 2008 through August 2009 to discuss information provided in the ER. As a result of our review and these discussions, the staff recommends that the application be accepted.

As will be discussed further, the staff has identified several deficiencies which could impact the environmental review schedule.

Completeness and Sufficiency

During the completeness and sufficiency review process, the U.S. Nuclear Regulatory Commission (NRC) environmental staff identified technical deficiencies in the ER. The identified technical deficiencies will require additional clarification during the review process. Although the staff has identified technical deficiencies, the issues should not prevent the staff from moving forward with the overall environmental review process. A summary of key deficiencies or issues identified in the acceptance review is provided below.

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Site Selection Process – The staff will need additional information on the criteria FPL used, and the process it employed to select potential sites, and to narrow the field of potential sites to the final list of candidate sites.

Aquatic Ecology – The staff expects to request additional biological information for areas likely to be impacted by the construction and operation of the radial wells and the likely transmission line routes.

Hydrology – The staff has a number of questions related to the unusual approach FPL has proposed to obtain cooling water and to dispose of blowdown. The questions relate to how the system will function and to the assumptions underlying the models that FPL used to estimate the impacts of collecting and disposing of this water.

Limited Work Authorization (LWA) – A comprehensive evaluation of the project's environmental impacts is discussed in Part 3 of the COLA. Part 6, which is specific to the LWA, references Part 3 to address the environmental impacts. As such, it will be necessary for FPL to provide a supplement to the ER to address impacts specific to the LWA.

Impacts of Existing Cooling Canals – There is a potential that the staff may need to include in its environmental impact statement (EIS) an evaluation of the ongoing impacts related to the cooling canal system for the existing Turkey Point Units 1 through 4. A more detailed evaluation will be needed to determine the answer to this question. But if these impacts must be included, the applicant will need to provide a significant amount of related information and the issue has the potential to extend the review schedule.

Scheduling

A principal concern is the total number and scope of the technical deficiencies and issues. While resolution of many of the individual deficiencies would not impact the overall environmental review schedule, these deficiencies taken together could present either logistical, collection, or review difficulties during the site audit and the subsequent request for additional information (RAI) process. There is also the potential that if the responses are not adequate and timely, the review process could take longer than currently anticipated. Assuming FPL is able to provide the information in a timely manner, the likelihood of a schedule impact is diminished.

Several issues have been identified that could impact the schedule or resource assumptions for developing an EIS for this application. The staff believes that most of the deficiencies can be addressed during the site audit or through the RAI process. However, the collection of aquatic sampling data, and the availability of information related to alternative sites and hydrology may impact the schedule for the NRC's environmental review.

It will be necessary for FPL to provide a supplemental ER to address impacts specific to the LWA. The ability to meet the existing schedule for processing the COLA is dependent on the applicant's efficiency at proportioning and/or separating LWA environmental impacts.

Review Dependencies

The Turkey Point COLA includes a request for a LWA, and activities specific to the LWA are identified in Part 6. In accordance with 10 CFR 51.49, for any application containing a LWA request, the ER must separately evaluate the environmental impacts and proposed alternatives to the activities proposed to be conducted under the LWA. The ER contained in Part 3 of the COLA is specific to the overall project; however, it will be necessary for FPL to modify the ER in Part 6 to separate and/or proportion impacts specific to the LWA.

The Turkey Point COLA references Revisions 16 and 17 of the AP1000 design control document (DCD), which are undergoing review concurrently with the Turkey Point COLA. Changes to the DCD review schedule could potentially affect the Turkey Point environmental review schedule.

Project No. 0763

ENCLOSURE:

Table 2 – Environmental Report Acceptance
Review Insufficiencies

Enclosure : Table 2. Environmental Report Acceptance Review Insufficiencies. Turkey Point Units 6 and 7

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction.

Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a "No" for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a "Yes" for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
4	Accidents	Ramsdell	ESRP 7.1 Regulatory Guide (RG) 1.145	Are the χ/Q values used for DBA analyses for representative (50%) meteorological conditions? If so, were the procedures used to calculate the χ/Q values consistent with NRC guidance?	Yes	No	Yes	Section 2.7.5 does not describe how the 50% χ/Q values were obtained. This description must be provided.
5	Accidents	Ramsdell	ESRP 7.1	Have the meteorological data on which the χ/Q values are based been provided to the U.S. Nuclear Regulatory Commission (NRC)?	No	No	Yes	The data have been promised.
6	Accidents	Ramsdell	ESRP 7.1	Does the ER list the name for any computer code used to calculate the χ/Q s used for DBAs?	Yes	No	Yes	The ER does not contain an adequate discussion of how the PAVAN code is used to determine the 50% χ/Q s needed for DBAs.
10	Accidents	Ramsdell	ESRP 7.1	Are isotopic source terms provided for each DBA?	Yes	No	Yes	The source term tables provided in the ER (tables 7.1-2 through 7.1-10) are incomplete.
11	Accidents	Ramsdell	ESRP 7.1 10 CFR 50.34(a)(1)(i) RG 1.183	Do the isotopic source terms include the source term for the worst 2-hour period?	Yes	No	Yes	Tables 7.1-2, 7.1-3, 7.1-5, 7.1-7, and 7.1-8 do not include source terms for the worst 2 hr. Table 7.1-4 does not contain a source term for the worst 2 hr for the reactor coolant pump shaft seizure with feedwater. There is no indication that the 0 to 2 hr source term in Table 7.1-9 is for the worst 2 hr.

Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
12	Accidents	Ramsdell	ESRP 7.1 RGs 1.3, 1.4, and 1.183	Do the DBA doses appropriately account for changes in breathing rates?		No	Yes	Yes	The ER DBA calculations are adjustments to the DCD DBA calculations to account for site specific conditions. These conditions do not include breathing rates. The ER and AP1000 DCD Tier 2, Appendix 1A states that the AP1000 conforms to Reg Guide 1.183, which gives the appropriate breathing rates.
14	Accidents	Ramsdell	ESRP 7.1 10 CFR 50.34(a)(1)(i) RG 1.183	1. Are EAB doses calculated for the 2-hour period giving the highest dose? 2. Is the 2-hour period identified?		Yes	No	Yes	Section 7.1.2 states that the DCD EAB doses are for the 2-hr period giving the maximum dose. The worst 2-hr periods are identified for the Reactor Pump Shaft Seizure and loss of coolant accident (LOCA) DBAs (footnotes to the source-term tables). The worst 2-hr period is not identified for the other accidents (probably the first 2-hr period). Note that the χ/Q_s for the LOCA in the AP1000 DCD are different than those used other DBAs.
17	Accidents	Ramsdell	ESRP 7.1	Are the LPZ χ/Q_s calculated consistently with NRC guidance?		Yes	No	Yes	The description of the calculation of LPZ χ/Q_s in Section 2.7.5 is not for 50% χ/Q_s used in ER DBA calculations. Additional explanation of process used to obtain the 50% χ/Q_s is needed.
20	Accidents	Ramsdell	ESRP 7.2	What meteorological data were used in the evaluation? (Check with meteorology reviewer)		Yes	No	Yes	Florida Power & Light Company (FPL) took the year giving highest doses. Instead, FPL should have used the year with median doses or averaged the results.
21	Accidents	Ramsdell	ESRP 7.2	1. What population data were used in the evaluation? 2. Are the data consistent with that presented in the demographic discussion? 3. Are population projections based on the most recent census and appropriate projection techniques? (Check with socioeconomic project reviewer)		Yes	No	Yes	Section 7.2.2 describes the population data used in MACCS2... from SECPOP2000 adjusted to 2080 per Section 2.5.1. The consistency of the starting points needs to be verified. The population projection techniques need to be evaluated by the socioeconomist. The population projection techniques are not clear.
22	Accidents	Ramsdell	ESRP 7.2	What land use data were used in the evaluation? Were they adjusted for potential changes in land use? (Check with land use project reviewer)		Yes	No	Yes	Land use data come from SECPOP2000. There was no discussion of adjustment for increasing population, and only changing the data format was mentioned.
23	Accidents	Ramsdell	ESRP 7.2	Does the ER contain a list of major surface water users within 50 miles of the site, including public water supplies and major industrial and agricultural users? (Check with hydrology project reviewer)		Yes	No	Yes	Table 2.3-24 lists types of surface water users by type in Dade County, and Table 2.3-25 lists surface water users within 10 mi of Units 6 and 7. Table 2.3-24 needs to be expanded to include surface water users in Monroe, Collier, and Broward counties within 50 mi of Units 6 and 7. Direction and distance should be provided for public water supplies and industrial users.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question				5. Remarks/Notes:
				1.	2.	3.	4.	
24	Accidents	Ramsdell	ESRP 7.2	Does the ER contain or refer to a list the postulated severe accidents, their descriptions, and their respective core damage frequencies? If so, is the list consistent with accidents considered in a DCD or FSAR for the reactor type?	Yes	No	Yes	The ER mistakenly refers to accident categories; it should refer to release categories. The release category frequencies are based on DCD Rev 15 probabilistic risk assessment (PRA). The applicant needs to provide assurance that the DCD Rev 15 PRA is applicable to DCD Rev 17.
25	Accidents	Ramsdell	ESRP 7.2	Has the applicant provided electronic copies of the input to and output from the computer code?	No	No	Yes	Unknown.
26	Accidents	Ramsdell	ESRP 7.2	Does the severe accident analysis in the ER consider the atmospheric, surface water, and groundwater pathways?	Yes	No	Yes	Sections 7.2.2 and 7.2.3 are inadequate. They include many unsubstantiated statements, and do not include much of the information that the staff typically includes in its EIS. The discussion of external initiating events has no substance; there is no discussion of initiating events during shut down. The discussion of surface water pathway needs to be based on site specific information. The groundwater pathway discussion needs to provide more site specific details given the heightened sensitivity to ground water releases due to the proposed method for disposal of liquid wastes. It is also inconsistent with the approach staff has taken recently.
27	Accidents	Ramsdell	ESRP 7.2	Does the severe accident analysis include output for socioeconomic, individual and population health effects?	Yes	No	Yes	The ER does not include water ingestion pathway doses by release category, which the staff has included in its EISs.
28	Accidents	Ramsdell	ESRP 7.2	Are these effects adequately reflected in the ER in terms of risk?	Yes	No	Yes	There are missing effects.
29	Accidents	Ramsdell	ESRP 7.2	If the application references a reactor design other than a certified design, does the ER or FSAR list or refer to a list of the dominant severe accident sequences?	No	No	Yes	AP1000 DCD Rev 15 has been certified. Rev. 17 is undergoing review. Rev 17 release category frequencies are based on a level 3 PRA for DCD Rev 15.
30	Accidents	Ramsdell	ESRP 7.3	Does the ER (or SSAR/FSAR or DCD) contain a list of leading contributors to 1. core damage frequency 2. large release frequency and 3. dose consequences with and without mitigation?	No	No	Yes	These lists are in the AP1000 PRA dated 12/2003. This PRA is for an earlier version of the AP1000 design. Its applicability to DCD Rev 17 needs to be verified.
31	Accidents	Ramsdell	ESRP 7.3	Does the ER (or SSAR/FSAR) contain a description of the method, rationale, or process used to identify, screen, and select design alternatives and procedural modifications?	No	No	Yes	This discussion is in the SAMDA analysis in DCD Tier 2 Appendix 1b related to design alternatives. There is no discussion of process of evaluation of procedural alternatives.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question				5. Remarks/Notes:
				1.	2.	3.	4.	
32	Accidents	Ramsdell	ESRP 7.3	Does the ER or other document in the applicant contain the estimated cost, risk reduction, and value impact ratios for the selected severe accident mitigation alternatives (SAMAs) along with the underlying assumptions?	Yes	No	Yes	This information is in the tables in DCD Tier 2 Appendix 1B. However, the analysis is based on a PRA for an earlier DCD version. There is no discussion of the applicability of that PRA to DCD Rev 17.
33	Accidents	Ramsdell	ESRP 7.3	Does the ER or other document in the application contain a list of SAMAs that have been or will be implemented to prevent or mitigate the impacts from severe accidents or to reduce the risk of a severe accident or other statement related to the implementation of SAMAs?	Yes	No	Yes	DCD Tier 2 Appendix B, section 1B.1.2 lists several SAMDA that were included in the AP1000 design. Appendix B and Section 7.3 conclude that there are no remaining SAMDAs that are cost beneficial. Section 7.3.3 states that FPL does not believe that evaluation of administrative SAMAs is appropriate at this time. The ER needs to include a commitment to evaluate administrative SAMAs when procedures are developed, to provide an approximate time scheduler for development of administrative SAMAs, and to discuss what factors, such as risk insights, will be considered when administrative SAMAs are developed.
53	Alternatives Analysis	Cort	ESRP 9.3	A description of the ROI selected by the applicant, including the following: 1. major centers of population 2. areas predicted to be deficient in power 3. water bodies available for cooling 4. railroads, highways, and waterways (existing and planned) 5. topographic features 6. major land-use classifications (e.g., residential and agricultural) and areas reserved for specific uses 7. location and description of existing and planned primary electrical generating stations 8. existing and planned transmission network 9. transmission interconnections with other utilities 10. natural and man-made features (e.g., zones of seismic activity, unusual geologic features, military installations) constituting potential hazards to construction or operation of a nuclear power facility.	1) Yes (2) Yes (3) Yes (4) Yes for candidate sites (5) Yes for candidate sites (6) Yes for candidate sites (7) No (8) Yes (9) Yes (10) Yes for some	Yes for most	Yes	(1) Figure 9.3-3 (2) Figure 9.3-2 (3) Figure 9.3-1 (4) Figures 9.3-9, 9.3-11, and 9.3-14 (5) Nothing on elevation, but other features included in figures 9.3-9, 9.3-11, and 9.3-14 (6) Figures 9.3-9, 9.3-11, and 9.3-14 (7) Not included, but West County site description refers to two new gas-fired plants in construction. (8) Figures 9.3-4, 9.4-11, through 9.4-14 and 2.2-5/ (9) Yes (10) Yes for military installations figures 9.3-9, 9.3-11, and 9.3-14.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question					
				1.	2.	3.	4.	5. Remarks/Notes:	
57	Alternatives Analysis	Cort	ESRP 9.4.3	For alternative transmission corridor routes: 1. maps or aerial photographs showing alternative transmission corridors from station site to inter-connecting points on the existing high voltage system and identifying corridor characteristics (e.g., new lines/towers on existing corridors, widening of existing and new corridors). 2. maps or aerial photographs showing existing and known future generating stations and transmission networks for the service area or affected region. For existing transmission corridors not proposed as alternatives to the proposed system, reasons why they were not considered (e.g., system reliability) should be provided. 3. lengths and widths of corridors for each alternative segment or corridor. 4. number and approximate location of known historic/archaeological sites within 2 km of the alternative corridor. 5. maps or aerial photographs showing approximate locations of Federal, State, or private wildlife refuges or other areas dedicated to ecological preservation, management, or study within 1 km of alternative corridors. (CONTINUED ON NEXT PAGE)	(1) Yes (2) Yes for existing (3) Yes (4) No specifics (5) Yes for some (6) Yes (7) Yes	Yes for most	Yes	(1) Figures 9.4-11 through 9.4-14 (2) Figure 9.3-4 for existing, no information on planned (3) Length included. Minimum and maximum width included, Section 9.4.3.2. (4) Table 9.4-8 refers to distance to cultural and historic landmarks as criteria, but specifics are not included. (5) Maps includes some locations (e.g., national parks), but others are not included. (6) Figures 9.4-11 through 9.4-14 (7) Figures 9.4-11 through 9.4-14.	

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1.	2.	3.	4.	5. Remarks/Notes:
58	Alternatives Analysis	Cort	ESRP 9.4.3	(CONTINUED FROM PREVIOUS PAGE) For alternative transmission corridor routes: 6. corridor proximity to airports, roads, railroads, or other transportation facilities. 7. general land-use characteristics along the alternative corridors expressed as percentages of total corridor length and in terms of intensity of use (e.g., residential density) for the following classifications: - agricultural - forest, woodland - rangeland - recreational or ecologically sensitive areas such as parks, wildlife preserves/refuges or management areas, wetlands, wild and scenic rivers - urban or residential areas - commercial or industrial areas - other potentially significant classifications (e.g., Federally owned lands, Native American tribal lands, ethnic enclaves, or areas of high minority population) - potential geologic hazards (e.g., active faults) that could affect transmission system reliability.				

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
59	Alternatives Analysis	Cort	ESRP 9.4.3	For alternative system design, construction, and maintenance practices, the following information: 1. alternative voltage levels and transmission frequency that are compatible with the existing service area/regional transmission network 2. alternative tower designs for areas of potential visual impact 3. alternative tower heights and conductor-to-ground clearances 4. alternative conductor designs 5. underground placement in areas of potentially high impact 6. alternative construction practices, including vegetation clearing; erosion control; revegetation; access road design, location, and maintenance; tower placement, foundations, and installation; and conductor installation 7. alternative maintenance practices 8. alternative location of auxiliary transmission facilities (e.g., substations, microwave relay stations).	(1) Yes (2) No (3) No (4) No (5) Yes, by reference (6) No (7) No (8) Yes (as part of alternative routing)	Yes for some	Yes if deemed necessary	The focus is on alternative routing and alternative transmission system design is largely unaddressed: (1) Section 9.4.3.1.3 (2) Not included (3) Not included (4) Not include (5) Table 9.4-8 refers to reviews of underground transmission where overhead is not feasible. (6) Not included (7) Not included (8) Not included.	
60	Alternatives Analysis	Cort	ESRP 9.4.3	For the alternative transmission selection process and cost data, the following information is required: 1. discussion of the selection process used to evaluate transmission line routes and the rationale and criteria used to select the proposed route 2. acquisition cost data for the proposed and alternative route corridors 3. construction and maintenance costs for the proposed system and for principal system alternatives 4. estimated transmission line losses for the proposed system and for principal alternatives.	(1) Yes (2) No (3) No (4) Not directly	Yes	Yes	(1) Section 9.4.3 (2) Cost data not included although cost is used as an evaluation criteria for routing. (3) Not included (4) No specific reference to line losses; however, indirectly using distance as proxy.	

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
61	Cultural Resources	O'Neil	36 CFR 800	A description of surveys, consultation with the State Historic Preservation Office (SHPO), and mitigation measures prior to any ground disturbance activities associated with preconstruction or construction activities. NRC expects applicants to provide a plan to identify and protect historic resources during preconstruction activities and to follow that plan during preconstruction activities. NRC notes that Section 110(k) of the National Historic Preservation Act (NHPA; 16 U.S. Code Section 470h-2(k)) prohibits applicants for Federal licenses or permits from intentionally destroying historic properties that may be protected under the NHPA.	Yes	No	Yes	Page 2.5-41 explains that FPL began consultation with the SHPO by letter. There is no copy of the correspondence in the ER. Page 2.5-41 explains that a work plan was prepared within <u>some</u> of the onsite areas that would be used for construction. It is not clear what other onsite areas within the APE need to be considered in this plan. Page 2.5-42 explains a work plan will be developed for offsite construction use areas. There is no timeline associated with the completion of this plan and associated field work. Page 2.5-43 references the notification of tribes; there are no copies of the letters in the ER.	
62	Cultural Resources	O'Neil	ESRP 2.5.3	A description of the cultural history of the region around the proposed plant.	Yes	No	Yes	Page 2.5-41 mentions a work plan that includes a review of pre-contact and historic cultural history, but the information is not included in the ER.	
64	Cultural Resources	O'Neil	ESRP 2.5.3	An appraisal of the cultural sensitivity of the project area based on models of prehistoric and historic occupation.	Yes	No	Yes	Pages 2.5-41 and 42 mention a work plan that includes an appraisal of the cultural sensitivity of the area based, but the information is not included in the ER. This work plan is for onsite construction areas. Offsite construction use areas will develop a separate work plan.	
65	Cultural Resources	O'Neil	ESRP 2.5.3	A summary of land use at the proposed plant location, beginning with the earliest recorded historic settlement.	Yes	No	Yes	Page 2.5-42 mentions a work plan that includes a description of land use history, but the information is not included in the ER. This work plan is for onsite construction areas. Offsite construction use areas will develop a separate work plan.	
66	Cultural Resources	O'Neil	ESRP 2.5.3	The identification of preconstruction and construction activities as defined by the Limited Work Authorization (LWA) Rule.	Yes	No	Yes	The topic is addressed in Table 4.6-1 but additional information will be needed.	
67	Cultural Resources	O'Neil	ESRP 2.5.3	The area of potential effect of proposed plant activities on cultural resources, including a visual Area of Potential Effect (APE) for historic structures and for traditional cultural property (TCP), if appropriate.	Yes	No	Yes	Page 2.5-41 describes the two APEs: direct impacts (physical effects) and indirect impacts (visual). These APEs are associated with a work plan for some of the onsite areas. These APEs have not been approved by the SHPO. Page 2.5-42 describes a work plan that does not exist. This work plan will also have an APE for direct and indirect impacts. There is no timeline associated with the development of this plan or consultation with the SHPO.	

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question				5. Remarks/Notes:
				1.	2.	3.	4.	
68	Cultural Resources	O'Neil	ESRP 2.5.3	A description of past and recent surveys conducted in the areas of potential effect, including the basis for surveys and qualifications of surveyors.	Yes	No	Yes	Page 2.5-42 mentions a work plan that includes a description of surveys in the area, but the information is not included in the ER. Page 2.5-42 mentions the development of a work plan for offsite construction areas that will need to include cultural resource survey information.
69	Cultural Resources	O'Neil	ESRP 2.5.3	The findings of the cultural resources surveys with any comments by the SHPO or others (e.g., tribes and interested parties) related to preconstruction and construction activities.	Yes	No	Yes	Page 2.5-42 mentions a work plan that includes a description of the findings, but the information to back up the findings is not included in the ER. There are no SHPO, Tribal letters, or comments in the ER. Page 2.5-42 mentions the development of a work plan for offsite construction areas. These areas have not been surveyed and there is no timeline for completion in the ER.
70	Cultural Resources	O'Neil	ESRP 2.5.3	An identification of those resources within the area of potential effect determined to be important, that is, either determined eligible for listing in the National Register of Historic Places (NRHP) or considered important under the National Environmental Policy Act (NEPA).	Yes	No	Yes	Page 2.5-42 mentions a work plan that identified resources within the APE for some of the onsite construction areas but the information to back up this statement is not included in the ER. Page 2.5-42 mentions the development of a work plan for offsite construction areas. These areas have not been surveyed and there is no timeline for completion in the ER.
71	Cultural Resources	O'Neil	ESRP 2.5.3	If not all resource surveys have been completed, a description of the agreements and procedures/plans that the applicant has made with the State to ensure completion of surveys in the future.	Yes	No	Yes	Page 2.5-41 and 42 states that FPL has begun consultation with the SHPO. No copy of the consultation letter is included in the ER. A work plan exists for some of the onsite construction areas. The work plan included research and a field assessment. The applicant has committed to continue consultation with the SHPO in accordance with Section 106 of NHPA on page 2.5-41. A work plan will need to be developed for the off-site construction areas. No timeline is defined in the ER for completing the consultation with the SHPO and completing the Section 106 process.
72	Cultural Resources	O'Neil	ESRP 2.5.3	A description of consultation efforts made with Federal and state agencies, Indian tribes, and interested parties.	Yes	No	Yes	Pages 2.5-41 and 43 describe consultation efforts. No copies of the letters are in the ER.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
74	Cultural Resources	O'Neil	ESRP 4.1.3	A description of important cultural and historical resources that could be affected by proposed project construction activities.		Yes	No	Yes	Page 4.1-11 does not describe cultural resources that could be affected by the project. There is reference to a work plan for onsite construction areas. For offsite T-lines and other areas, a work plan will be developed. No timeline associated with this work plan is in the ER.
75	Cultural Resources	O'Neil	ESRP 4.1.3	An assessment of the impacts that could occur to important cultural and historic resources from the proposed construction activities.		Yes	No	Yes	Page 4.1-11 states that there is a low probability for archaeological sites and the areas have been disturbed. There is no data in the ER to support this statement. There is reference to a work plan for onsite construction areas. No assessment for offsite construction has occurred.
76	Cultural Resources	O'Neil	ESRP 4.1.3	The SHPO's comments on the impact of the proposed project on important historic properties (from consultation with State agencies and Native American tribal agencies).		Yes	No	Yes	Page 4.1-11 states that there is a low probability for archaeological sites and the areas have been disturbed. There is no data in the ER to support this statement. There is reference to a work plan for onsite construction areas. SHPO has not concurred with these statements. No assessment for offsite construction has occurred. No consultation with SHPO for offsite construction has occurred.
78	Cultural Resources	O'Neil	ESRP 4.1.3	If located on Federal land, the applicant's procedures for identifying the potential for human remains to occur in the project and for complying with provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) in the event of an inadvertent discovery.		Yes	No	Yes	Page 4.1-12 mentions a work plan that will be developed that will include a training component for identifying potential human remains and understanding what procedures should be followed upon discovery. The work plan does not exist. There is no timeline to develop this work plan.
79	Cultural Resources	O'Neil	ESRP 4.1.3	The proposed avoidance measures and procedures to avoid impacts to important cultural and historical resources during construction, or the proposed mitigation measures.		Yes	No	Yes	Page 10.1-4 identifies procedures that will be developed to address inadvertent discovery of historic, archaeological, or paleontological resources. The procedures do not exist and there is no timeline to develop the procedures in the ER. FPL commits to consultation with the SHPO throughout the ER with regard to developing work plans.
81	Cultural Resources	O'Neil	ESRP 5.1.3	A description of important cultural and historic resources that could be affected during operations or the proposed mitigation measures.		Yes	No	Yes	Page 5.1-6 states that FPL has initiated consultation with the SHPO and is in the process of developing work plans. There is no description of cultural resources that could be affected during operations or proposed mitigation.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question				5. Remarks/Notes:
				1.	2.	3.	4.	
82	Cultural Resources	O'Neil	ESRP 5.1.3	An assessment of the impacts that could occur to important cultural and historic resources from the proposed operations	Yes	No	Yes	Page 5.1-6 does not provide an assessment of the impacts that could occur to cultural resources. FPL is in the process of consulting with the SHPO and developing work plans.
83	Cultural Resources	O'Neil	ESRP 5.1.3	The proposed avoidance measures to avoid impact to important cultural and historical resources during construction.	Yes	No	Yes	Page 5.1-6 The ER does not contain avoidance measures to avoid impacts to cultural resources during construction. FPL has committed to modifying plans that will be developed for construction to include operational procedures as well. These procedures have not been developed and there is no timeline associated with developing them in the ER.
86	Cultural Resources	O'Neil	ESRP 4.7 (proposed)	Cumulative effects have been addressed, including those associated with preconstruction LWA activities.	No	No	Yes	The ER does not contain information on cumulative effects for cultural resources.
87	Cultural Resources	O'Neil	10 CFR 51.45 (c)	A description the environmental impacts of preconstruction activities related to cultural resources at the site and an analysis of the cumulative impacts of the activities to be authorized by the combined license (COL) in light of the preconstruction impacts, as explained in COL/early site permit (ESP)-Interim Staff Guidance (ISG)-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC's public website.	Yes	No	Yes	The ER does not contain an analysis of cumulative impacts. Table 4.6-2 identifies construction vs. preconstruction activities. Indicates 95 % construction. Need to understand rational.
91	Decommissioning	MacLellan	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified activities of other agencies that have occurred or will occur in the region that may contribute to a cumulative impact on decommissioning?	No	No	Yes	Cumulative impacts of decommissioning are not discussed.
92	Decommissioning	MacLellan	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified projects in the region that may contribute to a cumulative impact on decommissioning?	No	No	Yes	Cumulative impacts of decommissioning are not discussed.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question				5. Remarks/Notes:
				1.	2.	3.	4.	
93	Ecology – Aquatic	Ward	ESRP 2.4.2	Is the available site-specific data adequate, accurate, and complete?	No	No	Yes	Page 2.4-19 of ER Rev 0 provides an overview of baseline aquatic results for Card Sound, and discusses species present in the industrial wastewater facility (cooling canals) but does not include supporting data tables. Aquatic samples were not collected from lower Biscayne Bay or areas near Turkey Point. These are areas most likely to be impacted by construction and operation of Units 6 and 7. Further, the ER indicates there will be a need for extensive transmission line construction, but little or no information is provided concerning the potential presence of threatened or endangered (T&E) species, listed, or other representative important species. Additional information will be needed from the applicant or other sources to evaluate the potential impacts of construction and operation.
94	Ecology – Aquatic	Ward	ESRP 2.4.2	Has the applicant included at least one year's worth of baseline aquatic monitoring data of the higher trophic level organisms to characterize adequately the aquatic environment and to identify important species? If the applicant is relying on historical data, is there adequate justification for why that data are appropriate?	Yes	No	Yes	Aquatic baseline data were collected from Card Sound, which are located at the southern end of the site. Data also were available from the industrial wastewater facility. No data were collected from lower Biscayne Bay or Turkey Point, where collector wells will be located. The ER attempts to relate biota in Card Sound to areas near Turkey Point, but more information is needed to evaluate potential impacts of construction and operation of Units 6 and 7.
95	Ecology – Aquatic	Ward	ESRP 2.4.2	Has the applicant identified any onsite waterbodies, streams, or wetland areas? Is sampling data available for these water features? Has the applicant determined if these waterbodies contain any "important" species?	Yes	No	Yes	On Page 2.4-16 of the ER Rev 0, the applicant indicates fish sampling in several areas that would be potentially impacted by construction of Units 6 and 7 will be sampled during summer 2009. These data were not included in ER Rev 0.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
98	Ecology – Aquatic	Ward	ESRP 2.4.2	Did the applicant describe any “important” species and their spatial and temporal distributions on and in the vicinity of the site (discharge area and receiving waterbody), including (as appropriate) their relative abundance, critical habitat, and their life histories: critical life stages, spawning areas, nursery grounds, food habits, feeding areas, wintering areas, and migration areas?	Yes	No	Yes		Additional information is needed to assess the impact of construction activities. Important species are identified, but no data were collected near Turkey Point or from lower Biscayne Bay. These are areas that would be potentially impacted by construction and operation of Units 6 and 7. Information from Card Sound provides narrative information on relative abundances but no data. Life history information was provided only for mangrove rivulus and smalltooth sawfish. Many other species are apparently present.
100	Ecology – Aquatic	Ward	ESRP 2.4.2	Has the applicant identified the location and value of commercial, subsistence and/or recreational fisheries, and the historic and current seasonal harvest by species?	Yes	No	Yes		Pages 2.4-26 – 2.4-30 of ER Rev 0 identify managed species in the vicinity of the plant. Catch/harvest data were not provided but is probably available.
101	Ecology – Aquatic	Ward	ESRP 2.4.2	The applicant identified and described 1. species composition 2. the spatial and temporal distribution 3. abundance 4. other structural and functional attributes of biotic assemblages that could be impacted by the proposed action.	Yes	No	Yes		Species composition and spatial/temporal distribution was provided for Card Sound stations, and for the industrial wastewater facility (cooling canals). No information was provided for areas near Turkey Point, lower Biscayne Bay, or potential transmission line corridors.
103	Ecology – Aquatic	Ward	ESRP 2.4.2	Does the applicant provide information on key indicator organisms that are particularly vulnerable to impacts from plant construction or operation?	Yes	No	Yes		Information for mangrove rivulus and smalltooth sawfish was provided. No information was provided on other listed fish, turtle, or marine mammals identified by the National Marine Fisheries Service (Appendix A, Part 2) that might be susceptible to construction impacts.
107	Ecology – Aquatic	Ward	ESRP 2.4.2	Did the applicant describe the location of any ecological or biological studies of the site or its environs that are recent or currently in progress?	No	No	Yes		On Page 2.3-48 of ER Rev 0, the applicant describes research and educational facilities near the site, but did not describe any current or recent studies.
109	Ecology – Aquatic	Ward	ESRP 4.3.2	Has the applicant identified the construction activities that could impact “important” aquatic species and habitats of the site and vicinity, transmission corridors, and offsite areas?	Yes	No	Yes		ER Rev 0 discusses physical impacts associated with collector well and barge slip/channel construction, but does not address vibration/noise issues associated with construction activities. It also does not address potential hazards to aquatic organisms due to increased barge traffic during construction. Transmission corridors have been identified, but no sampling has been conducted to determine if T&E species are present.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2.	3.	4.	5. Remarks/Notes:
				1.				
111	Ecology – Aquatic	Ward	ESRP 4.3.2	Is there information on the proposed schedule of construction activities as well as timing and duration of the activities?	Yes	No	Yes	Table 3.9-1 describes construction/operation milestones. Additional, more detailed information will be needed to evaluate construction-related impacts associated with collector well installation and transmission line construction.
114	Ecology – Aquatic	Ward	ESRP 4.3.2	Is there information available that can be used to determine how construction activities will impact “important” species and their habitats (e.g., those resulting from scouring and siltation, dredging and soil disposal, and interference with shoreline processes)? Is there information that can be used to estimate the magnitude and duration of such impacts? Consider potential disturbances of benthic areas by the following construction activities: 1. placement of intake and discharge structures 2. channel modifications for navigation or flow control 3. placement and removal of cofferdams 4. construction of bulkheads, piers, jetties, basins, and storm sewers 5. direct dredging, including the area that may be affected by resulting siltation and turbidity 6. percent (or the width and depth) of the waterbody cross section that might be obstructed by construction activity at any time 7. time and duration of such obstruction 8. potential changes to water quality caused by exposure of substrate to contaminants during construction (e.g., dredging for intake channels, cofferdam construction).	Yes	No	Yes	Section 4.3.2.1 provides a good discussion of potential construction-related impacts to aquatic resources, but it does not provide sufficient detail in the following areas: 1. Vibration and noise associated with the construction of the collector wells are not discussed. 2. Potential collision with or injury to turtles, marine mammals, or other aquatic species from increased barge traffic are not discussed. 3. Aquatic areas within new transmission right-of-ways have not been characterized with respect to the presence of T&E or listed species.
116	Ecology – Aquatic	Ward	ESRP 4.3.2	Are there plans for environmental improvement following construction?	Unknown	NA	NA	Additional discussion will be needed at Site Audit
118	Ecology – Aquatic	Ward	ESRP 4.3.2	Are there plans for mitigation of a predicted impact using appropriate measures, which could include alternative placement of structures, alternative schedules, or alternative construction practices?	Yes	No	Yes	Sections 4.3.2.1 and 4.3.2.2 of ER Rev 0 describe general practices but do not discuss placement or schedule changes. Transmission tower location is discussed in Section 4.3.2.3.3

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question				5. Remarks/Notes:
				1.	2.	3.	4.	
119	Ecology – Aquatic	Ward	ESRP 4.3.2	Have any construction activities been evaluated that will result in adverse impacts that cannot be mitigated? Alternatives to mitigate adverse impacts could include using a fish hatchery or habitat restoration to increase natural fish production.	Yes	No	Yes	In Section 4.3.2.4 of ER Rev 0, the applicant assumes only small impacts will result from construction and mitigation is not necessary. If the NRC determines otherwise, additional information may be required concerning mitigation options.
121	Ecology – Aquatic	Ward	ESRP 4.3.2	Are there plans for dewatering surface waters and/or wetlands?	Yes	No	Yes	Additional discussion will be needed at Site Audit
158	Ecology – Aquatic	Ward	ESRP 5.6.2	Has the applicant provided a map of the proposed transmission facilities and included information about important aquatic species or habitats in the vicinity of these facilities?	Yes	No	NA	No definitive information available to confirm the presence or absence of representative important species or T&E or listed species in the transmission line corridors
159	Ecology – Aquatic	Ward	ESRP 5.6.2	Has the applicant identified operational and maintenance activities associated with transmission facilities that could adversely affect “important” aquatic species and habitats? The resources to be considered include marshlands, wetlands, impoundments, and other waterbodies.	Yes	No	NA	Section 5.6.2 of ER Rev 0 discusses this, but there is no data available to confirm the presence or absence of representative important species or T&E in the transmission line corridors.
160	Ecology – Aquatic	Ward	ESRP 5.6.2	Have potential impacts on these resources been identified? These could include heating of waterbodies from removal of shade trees, siltation and turbidity resulting from increased runoff and erosion, runoff of defoliants and herbicides, recreational access by the public, and high-energy electrical fields associated with underwater transmission facilities.	Yes	No	NA	Section 5.6.2 of ER Rev 0 discusses this, but there is no data available to confirm the presence or absence of representative important species or T&E in the transmission line corridors.
161	Ecology – Aquatic	Ward	ESRP 5.6.2	If adverse impacts of sufficient magnitude have been identified, has the applicant identified the potential mitigating actions or alternative practices to limit or avoid the impacts?	Yes	No	NA	ER Rev 0 assumes impacts would be small. If NRC determines otherwise, additional information may be required.
162	Ecology – Aquatic	Ward	ESRP 6.5.2	Did the applicant complete any pre-application monitoring to examine the distribution and abundance of “important” species and habitats? Critical life history information should include parameters such as spawning areas, nursery grounds, food habits, feeding areas, wintering areas, and migration routes to the extent that the proposed project is expected to affect these parameters.	Yes	No	Yes	As described above, pre-application data are available for the industrial waste treatment facility (existing cooling lagoon) and from Card Sound. No data are available for Turkey Point or lower Biscayne Bay- areas likely to be impacted by construction and operation of Units 6 and 7.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
163	Ecology – Aquatic	Ward	ESRP 6.5.2	Is the applicant planning on completing preoperational/ operational monitoring related to aquatic resources? If so, what will each program entail (both in schedule and scope)?	Yes	No	Yes		See above. Also, ER Rev 0 indicates additional sampling at the site will be conducted during the summer of 2009. These data will be needed for NRC review.
170	Ecology – Aquatic	Ward	10 CFR 51.45(c)	A description of the environmental impacts of preconstruction activities related to aquatic ecology at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL in light of the preconstruction impacts, as explained in COL/ESP- ISG-4. The ISG and supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC's public website.	Yes	No	Yes		Preconstruction impacts are discussed in sections 3.7 and 3.9 of the ER, but more information will be required to determine the potential cumulative impacts of the activities.
173	Ecology – Aquatic	Ward	Alternative Site ESRP 9.3)	Has the applicant provided reconnaissance data to characterize the aquatic resource and “important” aquatic species impacts at the alternative sites?	No	No	Yes		General discussion of aquatic resources is present in Section 9.3.3 of ER Rev 0, but no specific reconnaissance data are presented.
174	Ecology – Terrestrial	Sackschewsky	ESRP 2.4.1	Has the applicant identified the species and habitats that will be considered “important” ecological resources (definition of “important” species and habitats is found in Table 2.4.1-1) of the site, vicinity, transmission corridors, and offsite areas for evaluation of potential impacts on them? Did the applicant include a map that identifies “important” terrestrial habitats on and in the vicinity of the site?	Yes	No	Yes		Pages 2.4-1 to 2.4-6 Need more detail on the habitats-the amount and types of wetland and other habitats-especially for offsite areas.
176	Ecology – Terrestrial	Sackschewsky	ESRP 2.4.1	Has the applicant consulted with local offices of the appropriate Federal, State, regional, local, and affected Native American tribal agencies to determine the possible presence of “important” species?	No	No	Yes		There is no clear indication of actual person-to-person exchange of information, but the applicant obtained a lot of information from the agencies via public sources
180	Ecology – Terrestrial	Sackschewsky	ESRP 2.4.1	Did the applicant describe the natural and man-induced effects (e.g., farming, logging, grazing, and burning), preexisting environmental stresses (e.g., infestations, epidemics, and catastrophes), and the current ecological conditions that are indicative of such stresses?	Yes	No	Yes		Pages 2.4-1 and 2.4-2 – A better understanding needs to be developed of how current stresses (especially the artificial surface drainage patterns) are altering the terrestrial environment near the plant site and will affect the impact assessment and analysis of mitigation options.
181	Ecology – Terrestrial	Sackschewsky	ESRP 2.4.1	Did the applicant describe the location of any ecological or biological studies of the site or its environs that are recent or currently in progress?	Yes	No	Yes		Page 2.4-7, Figure 2.4-3 More details regarding methodologies and survey locations are needed.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
183	Ecology – Terrestrial	Sackschewsky	ESRP 2.4.1	Is the available site-specific data adequate, accurate, and complete?	Yes	No	Yes		Additional questions will be brought up at the audit, but this is a reasonable start.
186	Ecology – Terrestrial	Sackschewsky	ESRP 4.3.1	Has the applicant provided information on the location and areal extent of terrestrial habitats/plant communities on the site and along the transmission corridors and at any other offsite areas where construction would occur?	Yes	No	Yes		Page 4.3-12 provides some descriptive text, but more specific details and information are needed regarding amount, types, and locations of habitats, including wetlands disturbed within transmission corridors and other offsite areas.
187	Ecology – Terrestrial	Sackschewsky	ESRP 4.3.1	Has the applicant provided information on the locations of “important” terrestrial species and the location and areal extent of “important” habitats in the vicinity of the site, transmission corridors, and any other offsite areas which would be affected by construction?	Yes	No	Yes		Additional details about the location and distribution of important species in relation to physical disturbances will be needed.
191	Ecology – Terrestrial	Sackschewsky	ESRP 4.3.1	Did the applicant identify the total land area to be disturbed permanently on and in the vicinity of the site, such as for buildings, new ponds and reservoirs, and either any new or existing (expansion areas for) transmission corridors, etc.?	Yes	No	Yes		Sections 4.3.1.1, 4.3.1.2, and 4.3.1.3 Additional detail will be needed regarding what is impacted where, especially for transmission corridors and other offsite areas.
192	Ecology – Terrestrial	Sackschewsky	ESRP 4.3.1	Has the applicant identified the total land area to be disturbed temporarily during construction on and in the vicinity of the site and along transmission corridors and at any other offsite areas, such as equipment storage and construction material laydown areas, borrow areas, haul roads, spoils and waste disposal areas, etc.?	Yes	No	Yes		Sections 4.3.1.1, 4.3.1.2, and 4.3.1.3 More differentiation between permanent and temporary disturbances will be needed.
193	Ecology – Terrestrial	Sackschewsky	ESRP 4.3.1	Has the applicant provided the area of each habitat type/plant community (e.g., wetlands, deciduous forests, agricultural fields, etc.), including “important” habitats, to be cleared or otherwise disturbed (e.g., inundated, drained, etc.) permanently or temporarily on and in the vicinity of the site and along transmission corridors and at any other offsite areas, and how much area is being disturbed relative to the total amount present in the region?	Yes	No	Yes		Covered in sections 4.3.1.1, 4.3.1.2, and 4.3.1.3 Need to develop a table of what is affected and where.
194	Ecology – Terrestrial	Sackschewsky	ESRP 4.3.1	Has the applicant provided a list of any “important” species that could be affected by construction, particularly Federally and State-listed threatened or endangered species, on and in the vicinity of the site and along transmission corridors and at any other offsite areas, and information on the population size/stability of these species in the region?	Yes	No	Yes		Sections 4.3.1.1, 4.3.1.2, and 4.3.1.3 Discussion of Federal T&E species is generally okay, but the coverage of State-listed species is weak. More details on which species will be affected, how, and where will be needed.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question				5. Remarks/Notes:
				1.	2.	3.	4.	
197	Ecology – Terrestrial	Sackschewsky	ESRP 4.3.1	Has the applicant provided documentation of consultation with the appropriate Federal, State, regional, local, and affected Native American tribal agencies, at a minimum the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service, and appropriate State resource agency(ies)?	No	No	Yes	There is no clear indication of person-to-person information exchange in the ER. This information may be located in supporting documentation and State certification documents.
200	Ecology – Terrestrial	Sackschewsky	ESRP 5.3.3.2	Has the applicant identified the concentration of chemicals in cooling tower basins or spray canals on a seasonal basis?	No	No	Yes	Expected constituents and concentrations in the make-up water reservoir are not readily apparent.
202	Ecology – Terrestrial	Sackschewsky	ESRP 5.3.3.2	Has the applicant provided a description “important” terrestrial species and habitats that may be affected by the heat dissipation system?	Yes	No	Yes	More detail on potential effects of salt drift and make-up water reservoir presence and operation on important species will be needed.
207	Ecology-Terrestrial	Sackschewsky	ESRP 5.5.1	Terrestrial ecology at disposal sites other than licensed commercial sites.	NA	No	Yes	Some wastes are going to permitted facilities, others are not indicated. Need to determine if any non-permitted disposal sites will be used.
209	Ecology – Terrestrial	Sackschewsky	ESRP 5.6.1	Has the applicant identified any special right-of-way maintenance practices to minimize adverse effects in “important” habitats (e.g., floodplains, wetlands, natural areas, etc.), including those that could result in beneficial effects on terrestrial biota?	Yes	No	Yes	Suggested (e.g., page 5.6-2) that special care is taken, but we will require more details about the procedures used, and the controls used to implement them.
211	Ecology – Terrestrial	Sackschewsky	ESRP 5.6.1	Has the applicant identified the occurrences of “important” species and habitats, including Federally and State-listed threatened or endangered species and/or Federally designated or proposed critical habitat along the transmission corridors?	Yes	No	Yes	We will require more details re: species and habitats of concern locations, and proposed protection measures.
212	Ecology – Terrestrial	Sackschewsky	ESRP 5.6.1	Has the applicant identified occurrences of invasive species (as defined in Executive Order 13112) along the existing transmission corridors? If so, has the applicant considered how the maintenance of expanded or new transmission corridors could affect the proliferation of such species?	No	No	Yes	There does not appear to be a discussion of invasive species within transmission corridors, described maintenance procedures may not prevent expansion of invasive species.
214	Ecology – Terrestrial	Sackschewsky	ESRP 5.6.1	Has the applicant identified a list of the adverse impacts to habitats and species (particularly “important” habitats and species) from the operation and maintenance of transmission systems and considered measures or controls to limit or otherwise mitigate such impacts?	Yes	No	Yes	More specific information about the affected resources, impacts, and mitigation measures will be needed.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question				5. Remarks/Notes:
				1.	2.	3.	4.	
216	Ecology – Terrestrial	Sackschewsky	ESRP 6.5.1	Did the applicant complete any preapplication monitoring to examine the distribution and abundance of “important” species and habitats? Critical life history information should include parameters such as feeding and wintering areas as well as migration routes to the extent that the proposed project is expected to affect these parameters.	Yes	No	Yes	Generally okay, but more details regarding methodologies and sampling locations will be needed.
217	Ecology – Terrestrial	Sackschewsky	ESRP 6.5.1	Does the applicant plan on completing preoperational/ operational monitoring related to terrestrial resources? If so, what will each program entail, both in schedule and scope?	Yes	No	Yes	Additional details are needed about the construction monitoring of crocodiles and wood storks, and monitoring along water supply line.
221	Ecology – Terrestrial	Sackschewsky	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified the activities of other agencies or organizations that have occurred or will occur in the project area that may contribute to a cumulative impact on terrestrial resources?	Yes	No	Yes	Projects and activities are identified, but their impacts to important species and habitats are not described.
222	Ecology – Terrestrial	Sackschewsky	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified projects in the region that may contribute to cumulative impacts on “important” terrestrial species or habitats?	Yes	No	Yes	Projects and activities are identified, but their impacts to important species and habitats are not described.
223	Ecology - Terrestrial	Sackschewsky	Alternative Site (ESRP 9.3)	Has the applicant provided reconnaissance data to characterize the terrestrial resource and “important” terrestrial species impacts at the alternative sites?	Yes	No	Yes	More detailed data about the types and quantities of resources affected at each alternative site are needed.
229	Hydrology	Breithaupt	ESRP 2.3.1 (estuaries and oceans only)	The following estuary and ocean information should be included: 1. shoreline and bottom descriptions, including seasonal variations because of sediment transport 2. tidal current patterns (velocities and phases), range, and excursion 3. nontidal circulation patterns, including frequency distributions of current speed, direction, and persistence 4. temperature and salinity distribution (horizontal and vertical), including temporal variations 5. detailed bathymetry in the vicinity of the station intake and outfall 6. for estuaries, maximum, average maximum, average, average minimum, and minimum monthly river discharge and flushing characteristics.	1,2,3,4) Yes 5) Yes 6) NA	1,2,3,4) Yes 5) No 6) NA	5) Yes	Section 2.3.1.1.3 is a general description of Biscayne Bay, 5) Figure 2.3-13 Biscayne Bay Bathymetry; more detail near TP would help.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question				5. Remarks/Notes:
				1.	2.	3.	4.	
230	Hydrology	Thorne	ESRP 2.3.1 (groundwater)	The following groundwater information should be included: 1. the areal extent of aquifers, recharge and discharge areas, elevation and depth, and geologic formations 2. piezometric contour maps and hydraulic gradients (historical [if available] and current) 3. flow travel times 4. soil properties, including permeabilities or transmissivities, storage coefficients or specific yields, total and effective porosities, clay content, and bulk densities 5. interactions between site surface and groundwaters 6. historical and seasonal trends in groundwater elevation or piezometric levels; interactions between different aquifers 7. recharge rates, soil moisture characteristics, and moisture content in vadose zone 8. existence of any local aquifers designated or proposed to be designated as "sole source aquifers."	1) Yes 2) Yes 3) No 4) Yes 5) Yes 6) Yes 7) Yes 8) Yes	1) Yes 2) Yes 3) No 4) Yes 5) No 6) No 7) Yes 8) Yes	1-8) Yes	1) Described in Section 2.3.1.2.1.2. Maps showing extents of Biscayne aquifer, upper Floridan aquifer, and Boulder Zone provided in Section 2.3. 2) Piezometric maps for the site (upper Key Largo and lower Ft. Thompson units of the Biscayne Aquifer) and for the upper Floridan from spring and fall 1993. A regional cross-section in Figure 2.3-48 showing flow directions. 3) Travel time not addressed. Flow directions and gradients described in Section 2.3.1.2.2.1. More on vertical gradient between Boulder zone and upper Floridan and on effects of the existing upper Floridan supply well for Unit 5 are needed. 4) Section 2.3.1.2.2.3 and tables 2.3-16, -17, -18, -19 and -20 list data from literature and site tests. 5) GW interaction with Biscayne Bay in 2.3.1.1.3 (very general-may need some numbers). Cooling canal interactions with groundwater (GW) discussed in sections 2.3.1.1.4 and 2.3.1.2.2.5. Also addressed in GW model (FSAR 2.4.12 appendix CC). References for modeling discussion and information on appropriateness of conceptual model and assumptions are needed. 6) Figures 2.3-38 to 2.3-40 show site-specific and regional WL data for Biscayne aquifer. Figure 2.3-41 shows trend in one Floridan well. Are data available for the existing production well? 7) Section 2.3.1.2.2.5 addresses recharge to shallow aquifer. 8) Section 2.3.2.2.3

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
237	Hydrology	Breithaupt Thorne	ESRP 2.3.3	The mean, range, and temporal and spatial variations of the surface water and groundwater-quality characteristics. For surface waters: water temperature, suspended solids, total dissolved solids, hardness, turbidity, color, odor, conductivity, dissolved oxygen, biological oxygen demand (BOD), chemical oxygen demand (COD), phosphorus forms (total and orthophosphate), nitrogen forms (ammonia, nitrate, nitrite, organic), alkalinity, chlorides, sulfate, sodium, potassium, calcium, magnesium, heavy metals (e.g., Hg, Pb), pH, phytoplankton (chlorophyll <i>a</i>), and indicator micro-organisms (e.g., total coliform, fecal coliforms, fecal streptococci). For groundwaters: the above-surface water data, minus phytoplankton and with silica, iron, carbon dioxide, and bicarbonate added.		Yes	No	Yes	Spatial distribution of Cl and temporal change of Cl concentration in water produced from Unit 5 supply well are needed. Groundwater - Section 2.3.3.2 and Table 2.3-22 Does not include suspended solids, hardness, turbidity, color, odor, BOD, COD, phosphorus, CO₂, or coliform. However, these may not be applicable for groundwater. GW quality of the boulder zone will be available after a well is completed. Surface water – Section 2.3.3.1 and Table 2.3-31 for Biscayne Bay
242	Hydrology	Thorne	ESRP 3.4.1	Descriptions of anticipated operational modes and the estimated periods of time that the system will operate in each mode including: - for each anticipated operational mode, quantities of heat generated, dissipated to the atmosphere, and released in liquid discharges - for each operational mode, water source and quantities of water withdrawn, consumed, and discharged.		Yes	No	Yes	Information on time for each operational mode is needed. Section 3.4.1 Section 5.3.3.1 cooling tower heat to atmosphere Table 3.4.1 Nominal Service Water Flows and Heat Loads at Different Operational Modes per unit 2) Section 3.3.1 and tables 3.3-1 and 3.3-2
243	Hydrology	Thorne	ESRP 3.4.1	Status of the NPDES permit and any 316(a/b) demonstrations.		Yes	No	NA	The current status of permit application is needed.
257	Hydrology	Thorne	ESRP 3.6.2	The NPDES permit (if available).		Yes	No	Yes	The current permit status for deep well injection is needed.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
263	Hydrology	Thorne Breithaupt	ESRP 4.2.2	The following data should be provided: 1. identification and locations of groundwater and surface-water users and areas that could be impacted by project related construction activities affecting water use 2. predicted impacts on the water users identified in the previous item 3. descriptions of any proposed practices and measures to control construction related water use impacts. Factors to be considered include flooding, drainage, groundwater elevation, erosion, sedimentation, water quality, protection of natural drainage channels and water bodies, protection of shorelines and beaches, restrictions on access to and use of surface water, protection against saltwater intrusion, and handling of fuels, lubricants, oily wastes, chemical wastes, sanitary wastes, herbicides, and pesticides 4. consultations with Federal, State, regional, local, and affected Native American tribal regulators 5. descriptions of proposed means to ensure construction activity compliance with water-quality and water-use standards and regulations 6. water-quality requirements for key elements of aquatic ecosystem and domestic users.	1) Yes 2) Yes 3) Yes 4) Yes 5) Yes 6) NA	1) Yes 2) No 3) No 4) No 5) Yes 6) NA	1-6) Yes	1) Figures 2.3-56 and 2.3-57 show permitted water supply wells and GW protection areas. Table 2.3-30 Public Water Supply Systems in Miami-Dade County FSAR 2.4.12.1.6 Onsite Use of Groundwater 2) Sections 4.2.2.2 and 4.2.3.2 Something in Section 4.2.3.2 on the effects of fill mining operation on GW quality may be needed. 3) Section 4.2.3.1 for SW Something in Section 4.2.3.2 on fill mining operation may be needed. 4) Contacts with "the Seminole and Miccosukee Indian tribes reported that the Indians residing in reservations within 50 mi do not depend on hunting, fishing, or gardening for subsistence." (Section 4.4.3.2 Socioeconomic Impacts) No mention of consultation with NPS regarding groundwater issues 5) Sections 4.1.1.1.2 and 4.6, and Table 4.6-1	

Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
265	Hydrology	Thorne	ESRP 5.2.1	The following list of data should be provided: 1. a quantitative description of present and known future groundwater withdrawals on the site and for distances great enough to cover aquifers that may affect plant water availability or be affected by plant water use. The following should be included for each use: (a) location, depth, and elevation of wells (total and cased) and water levels with respect to the plant, (b) identification of aquifers, and (c) average monthly withdrawal rates. 2. operational activities expected to result in hydrologic alterations within the site and vicinity, along transmission corridors, or at offsite areas. These activities can include dredging operations, operations affecting water levels, and dewatering activities. 3. identification and description of the hydrological alterations resulting from the identified operational activities. These can include changes in the flood handling capability of the floodplain, flow and circulation patterns, erosion subsidence, water availability, and sediment transport.	1) Yes 2) Yes 3) Yes	1) No 2) No 3) Yes	1-3) Yes	1) The only present GW withdrawal onsite is the 14 million gal/day that is permitted to be pumped from the upper Floridan aquifer to supply cooling water to Unit 5 and process water to Units 1 and 2. Information is needed on how much is actually produced, the effect on hydraulic head, and chemical parameters. Planned Radial wells Section 5.2.1.1.8 supported by GW model (FSAR 2.4.12 appendix CC) 2) GW subsections under Section 5.2.1 More information on the GW model used to determine effects dewatering withdrawals on Biscayne aquifer is needed. 3) Table 5.10-1 Summary of Potentially Adverse Impacts of Operation	

Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2.	3.	4.	5. Remarks/Notes:
				1.				
269	Hydrology	Thorne	ESRP 5.2.2	The following list of data should be provided: 1. a quantitative description of present and known future groundwater withdrawals on the site and for distances great enough to cover aquifers that may be adversely affected by the plant. The following should be included for each use: (a) withdrawal location, (b) depth and elevation of wells (total and cased depth) and water levels, (c) identification of aquifers, and (d) average monthly withdrawal rates by use category 2. comparisons of water quantity available to other water users with existing and known future water rights and allocations 3. a quantitative and qualitative description of recreational, navigational, and other nonconsumptive known future water uses. For a 10-km (6-mi) radius, this should include the following: (a) identification of waterbodies and location with respect to the plant, (b) kind and location of activity on the waterbody, and (c) use rate with time variation 4. identification of waterbodies receiving plant effluents and the expected average and maximum flow rates and composition of these effluents 5. predicted impacts to water users or water-use categories described in the "Data and Information" section of this ESRP 6. baseline water-quality data for surface-water and groundwater sources used for and impacted by plant operation (from ESRP 2.3.3).	1) Yes 2) NA 3) Yes 4) Yes 5) Yes 6) Yes	1) No 2) NA 3) Yes 4) Yes 5) Yes 6) No	1) Yes 6) Yes	1) The only present GW withdrawal onsite is the 14 million gal/day that is permitted to be pumped from the upper Floridian aquifer to supply cooling water to Unit 5 and process water to Units 1 and 2. Additional information is needed on how much is actually produced. Section 5.2.1.1.8 Planned radial wells supported by GW model (FSAR 2.4.12 appendix CC) 2) NA 3) Section 2.3.2.1.2 for Biscayne Bay 4) Section 5.2.3.2.4 and Tables 3.6-1, 3.6-2, and 3.6-3 5) Section 5.2.1.1.9 6) Section 2.3.3.1.1 Biscayne Bay Section 2.3.2 and tables 2.3-22 and 2.3-23 provide Biscayne aquifer parameters. More information on baseline GW quality for the Boulder Zone and Upper Floridan aquifer is needed.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
270	Hydrology	Thorne	ESRP 5.2.2	The following list of data should be provided: 1. baseline water-quality data for surface-water and groundwater sources used for and impacted by plant operation 2. descriptions of any proposed practices and measures to control or limit operational water-use impacts 3. summary of statutory and other legal restrictions relating to water use or specific waterbody restrictions on water use imposed by Federal, State, regional, local, or affected Native American tribal regulations 4. Federal, State, regional, local, and affected Native American tribal standards and regulations applicable to water quality and water use (from consultation with Federal, State, regional, local, and affected Native American tribal agencies) 5. descriptions of proposed means to ensure operational compliance with water quality and water-use standards and regulations.	1) Yes 2) Yes 3) Yes 4) Yes 5) Yes	1) No 2) Yes 3) Yes 4) Yes 5) Yes	1) Yes 2) Yes 3) Yes 4) Yes 5) Yes	1) Section 2.3.3.1.1 Biscayne Bay Section 2.3.2 and table 2.3-22 Table 2.3-23 provide Biscayne aquifer parameters More information on baseline GW quality for the Boulder Zone and Upper Floridan aquifer is needed. 2) Section 5.2.3.1.2 "Monitoring wells would be installed and used to monitor the groundwater level and water quality at and near the radial collector well locations to ensure impacts to local water quality, particular surface water quality, are minimal." 3) Table 1.2-1 lists required permits 4) Not specific 5) Section 5-10 and Table 5.10-1.	
271	Hydrology	Thorne	ESRP 5.3.1.1	The following list of data should be provided: 1. bathymetry and sediment characteristics near the intake structure(s) 2. maps depicting station layout with respect to the waterbody, including locations of all intakes and discharges 3. intake flow rates and velocities as a function of plant operating conditions 4. detailed drawings of the intake structure(s), including the relationship of the structure to the water surface (normal and minimum levels) 5. ambient current patterns in the vicinity of the proposed intake structure(s) 6. descriptions of other intake system design and performance characteristics affecting hydrodynamics (e.g., horizontal and vertical approach velocities, geometry of intake canals, and submerged riprap) 7. descriptions of spatial and temporal alterations of the ambient flow field and of any other physical hydrologic effects induced by intake system operation.	1) Yes 2) NA 3) NA 4) Yes 5) NA 6) NA 7) Yes	1) No 4) Yes 7) No	1) Yes 7) Yes	1) Section 2.3.1.1.3 and Figure 2.3-13 for Biscayne Bay bathymetry. More detail near TP would help. 2) No surface water intake structure 3) No surface water intake structure 4) Figure 3.4-2 for radial collector wells 5) No surface water intake structure 6) No surface water intake structure 7) More information on GW model assumptions and uncertainties related to effects of dewatering withdrawals on Biscayne aquifer.	

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2.	3.	4.	5. Remarks/Notes:
				1.				
276	Hydrology	Thorne Myers	ESRP 5.3.2.1	The following list of information on the applicant's models, if used: 1. For numerical models: (a) theory, assumptions, and basis for applicability; (b) procedures used to estimate model parameters (e.g., diffusion coefficients); (c) model verification; and (d) the applicant's predicted temperature distributions, areas for isotherms, dilution rates, and time of passage through plume. 2. For physical models: (a) physical model facilities (e.g., dimensions of the plume and flow rates), (b) modeling techniques and scaling relationships, (c) data collection and analysis techniques (e.g., number and locations of temperature probes, infrared mapping), (d) prototype verification (if any), and (e) the applicant's flow fields and temperature distributions for critical and average hydrological conditions.	1) Yes 2) NA	1) No	1) Yes	References from modeling discussion in FSAR 2.4.12 appendix CC are needed. More information on assumptions and appropriateness of conceptual model basis of the MODFLOW model is needed. Address uncertainties in results caused by the assumptions.
278	Hydrology	Thorne	ESRP 5.5.1	For discharges to water, waste concentrations at the point of discharge, predicted dilution in the receiving waterbody, and estimates of concentrations at various distances from the discharge point.	Yes	No	Yes	Predicted dilution needed.
279	Hydrology	Thorne	ESRP 5.5.1	Ambient concentrations in the receiving waterbody of the chemicals and other materials contained in the waste discharges.	Yes	No	Yes	Site-specific data are needed for the Boulder Zone after the well is completed.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question					
				1.	2.	3.	4.	5. Remarks/Notes:	
291	Hydrology	Thorne	ESRP 6.3	The following list of data describing the HYDROLOGICAL MONITORING should be provided: 1. maps showing: (a) features of the plant and site, including the boundaries and bathymetry of all surface waterbodies (including springs) adjacent to the site both before and after construction activities, (b) the locations of all hydrological (including groundwater monitoring wells), thermal, and aquatic biological monitoring stations, (c) locations of all wells potentially influenced by plant construction and operation, and (d) major geomorphic features (e.g., floodplains) and regional geology 2. site vicinity surface and groundwater average and extreme velocities and flow rates 3. sediment transport (suspended and bed load) characteristics and erodability of the site soil 4. the type and frequency of data collected at each location as well as the duration of each monitoring program 5. descriptions of the monitoring equipment used 6. descriptions of the data analysis procedures used 7. documentation of data quality objectives (if any).	1) Yes 2) NA 3) NA 4) Yes 5) Yes 6) Yes 7) Yes	1) No 2) NA 3) NA 4) No 5) No 6) No 7) No	1) Yes 2) NA 3) NA 4) Yes 5) Yes 6) Yes 7) Yes	1) A map with location of Boulder Zone injection and monitoring wells is needed. 2) No discharge to surface waterbody 3) No discharge to surface waterbody 4) No plans to monitor chemistry of water from the radial collector wells to assess ratio of sea water/groundwater produced Section 5.2.3.1.2 "Monitoring wells would be installed and used to monitor the groundwater level and water quality at and near the radial collector well locations to ensure impacts to local water quality, particular surface water quality, are minimal." – Biscayne aquifer Table 6.6-3 Deep Injection Well Construction and Preoperational Chemical Monitoring. What chemical monitoring is required by the deep injection permit? 5) Need additional information 6) Need to review data analysis procedures 7) Need to review data quality objectives	

Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
292	Hydrology	Thorne	ESRP 6.6	The following list of data describing the CHEMICAL MONITORING should be provided: 1. systems to be sampled 2. location of sampling stations 3. type of sample (e.g., surface grab or depth composite), number of replicates, and method of collecting the sample 4. time of day, time period, and frequency of sampling 5. methods of preserving the samples 6. analytical methods used 7. description of automated monitoring systems used 8. reference or calibration standards used to verify accuracy of methods statistical methods used to interpret results 9. quantitative data on chemical characteristics of surface water and/or groundwater in the site and vicinity, including seasonal ranges and averages and historical extremes 10. data quality objectives 11. quality assurance procedures.	1) Yes 2) Yes 3) No 4) No 5) No 6) No 7) No 8) No 9) No 10) Yes	1) Yes 2) No 3) No 4) No 5) No 6) No 7) No 8) Yes 9) No 10) No	1) Yes 2) Yes 3) Yes 4) Yes 5) Yes 6) Yes 7) Yes 8) Yes 9) Yes 10) Yes	2) Locations needed for upper Floridan monitoring wells Biscayne aquifer wells shown in Figure 2.3-25. Need to demonstrate these are adequate to assess radial well impact on aquifer. 3 - 7) Provide specific information 8) Spatial distribution and temporal trend of Cl in Upper Floridan aquifer are needed. 9) Not mentioned 10) Specific procedures are not described - the Rad monitoring program refers to "Quality Assurance for Radiological Monitoring Programs (Normal Operations) — Effluent Streams and the Environment, Revision 2, 2007" and FSAR Chapter 17 provides general QA references	
296	Hydrology	Thorne	Alternatives Analysis ESRP 9.3)	Has the applicant provided reconnaissance data to characterize the hydrological impacts at the alternative sites?	Yes	No	Yes	Was the use of reclaimed wastewater as a source considered at the other sites, particularly Martin? Also, the determination that the Martin site is not environmentally superior to Turkey Point appears to be based on the construction transportation impacts at Martin being "LARGE." Are these impacts as significant as the potential (risk) for increasing salt-water intrusion into the shallow aquifer at Turkey Point and effects on the National Parks?	
306	Land Use/ Transmission Line	Cort	RG 4.2, Ch. 12; 10 CFR 51.45(d)	Discussion of applicable zoning and land use restrictions.	Yes	No	Yes	Section 2.2.1.1.1 refers to "certain encumbrances on portions of property," but no details are provided. FPL owns "most of the property" within the site, but it is unclear who owns the other portions and how this impacts land usage.	

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
319	Land Use/Transmission Line	Cort	ESRP 2.2.2	Special land-use classifications that would be impacted by the proposed facility (e.g., Native American or military reservations, wild and scenic rivers, State and national parks, national forests, designated coastal-zone areas, floodplains, wildlife refuges, and wilderness areas).	Yes for most features; No for floodplains	Yes	Yes	Yes	Indian reservations (Figure 2.5-25), military (figures 2.1-3/2.5-2, 2.1-4/2.5-8), recreation, parks, refuge areas (Figure 2.5-19, 2.5-20); Floodplains referred to in 2.2 but not identified or characterized on map.
324	Land Use/Transmission Line	Cort	ESRP 2.2.3	Maps showing the major transportation and utility networks within the region.	Yes for transmission, No for gas	Yes	Yes	Yes	Figure 2.2-5 for transmission, some textual discussion of gas pipelines included.
325	Land Use/Transmission Line	Cort	ESRP 2.2.3	Maps showing major public and trust land areas in the region.	No	No	Yes	Yes	Some information on web including Miami-Dade County (http://www.ltanet.org/landtrustdirectory/county.tcl?county_id=12086) and Broward County (http://www.ltanet.org/landtrustdirectory/county.tcl?county_id=12011)
355	Land Use/Transmission Line	Cort	ESRP 4.1.2	Has the visual impact of constructing new corridors or widening existing corridors been addressed?	No	No	Yes	Yes	States that corridor selection process was designed to be sensitive to "environmental and social conditions." Recreation and aesthetics not specifically addressed, but map of routing and selection criteria provided.
368	Meteorology	Ramsdell	ESRP 2.7	Monthly and annual air temperature and dewpoint temperature summaries, including averages, extremes, and diurnal range, and whether these extremes would affect air quality and/or dispersion.	Yes	No	Yes	Yes	Section 2.7.1.3.2. No tables, no discussion of why data for a station 25 mi away and 10 mi inland are relevant to the site. Table 2.7 is not readable in the electronic version of the ER. (better in FSAR) Need period of record for all stations to evaluate extremes. Need discussion of extremes for site based on onsite measurements (data have been collected on site since the early 1970s). The FSAR has more detail, but still no tables.
369	Meteorology	Ramsdell	ESRP 2.7	Monthly and annual summaries, including natural variability, occurrences of heavy fog, and appropriate summaries of other relevant parameters to support the description of impacts resulting from the operation of a closed-cycle heat dissipation system.	Yes	No	Yes	Yes	Section 2.7.4.2 There is a USAF summary of climatological data for Homestead AFB. Need to discuss the possible differences in fog associated with distance from the water and better discussion of relevance of MIA data.
371	Meteorology	Ramsdell	ESRP 2.7	Monthly and annual summaries of atmospheric stability.	No	Yes	NA	NA	Section 2.7.4.5 Seasonal and annual summary provided in Table 2.7-9 should be sufficient.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question				5. Remarks/Notes:
				1.	2.	3.	4.	
372	Meteorology	Ramsdell	ESRP 2.7	A description or reference to models and assumptions used to determine χ/Q and relative deposition (D/Q).	Yes	No	Yes	Much of the discussions in sections 2.7.5.1 and 2.7.5.2 including tables 2.7-13 and 2.7-14 are only relevant to the safety review. There is no discussion of the unnumbered table at the end Section 2.7.5.2 (page 2.7-31). There must be a description of the how these numbers were derived.
373	Meteorology	Ramsdell	ESRP 2.7	Short- and long-term diffusion estimates of χ/Q and/or D/Q and the period of onsite meteorological data used in the calculations.	Yes	No	Yes	Section 2.7.6.1, first bullet at top of page 2.7-33 reference to Table 2.7-5 is wrong. No reference provided for locations of receptors of interest. No reference in Section 5.4.2 either. The locations of the closest residence and closest garden at the end of Section 2.7.6.2 on page 2.7-34 are inconsistent with the statement in Section 2.7.6.2 in the middle of page 2.7-33 that each residence was assume to have a garden.
377	Meteorology	Ramsdell	ESRP 4.4.1, 5.3.2.1, and 5.3.3.1	Is the meteorological information suitable to provide estimates of the impact of construction activity (needed for ESRP 4.4.1), plant operation (for ESRP 5.3.2.1), and heat dissipation system effects (for ESRP 5.3.3.1) on the atmosphere and air quality?	Yes	No	Yes	Cooling tower analysis based on Miami Airport data. The impact of cooling towers should be addressed using onsite meteorological data as much as possible. At a minimum, site wind and stability data should be used.
378	Meteorology	Ramsdell	ESRP 5.4.1 and 5.4.2	Are the locations of the nearest receptors in each 22.5-degree sector for the transport and diffusion calculations clearly identified (for ESRPs 5.4.1 and 5.4.2)? Is enough information provided to allow staff to evaluate the concentrations and deposition values at these locations?	Yes	No	Yes	Basis for location of receptors is not provided in sections 2.7.6.2 or 5.4.1.
429	Radiological Health	MacLellan	ESRP 5.4.1	The nearest present and known future locations from which an individual can obtain aquatic food and/or drinking water.	Yes	No	Yes	Sect. 5.4.1.1 Liquid releases only to non-potable aquifer. Aquatic food not mentioned. May consider no liquid release means no pathway to food. Say use defaults from RG 1.109.
432	Radiological Health	MacLellan	ESRP 5.4.1	For each liquid radwaste discharge, the transit time from input to a facility discharge stream to the point at which the stream enters an unrestricted area, and the stream discharge in m ³ /sec.	Yes	No	Yes	Limited information on potential escape of effluent from aquifer. A better explanation of the regional movement of water in the Boulder Zone is needed in relation to potential exposure pathways. FSAR Section 2.4.12.1.3.3 describes the Floridian Aquifer System, but it does not provide information on the regional flow. The complete story of this potential dose pathway needs to be discussed.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
433	Radiological Health	MacLellan	ESRP 5.4.1	The following distributional data for each of the 22.5-degree radial sectors centered on the 16 cardinal compass directions for radial distances of 2, 4, 6, 8, 10, 20, 40, 60, and 80 km (1.2, 2.5, 3.7, 5, 6.2, 12, 25, 27, and 50 mi) from the reactor: 1. projected population for five years from the time of the licensing action under consideration 2. present annual meat production (kg/yr) 3. present annual milk production (L/yr) 4. present annual vegetable production (kg/yr) 5. estimate of direct radiation doses from sources within the site.	No	No	Yes	Figure 2.5-2 Year 2000 population data by sector at mile radii to 5 mi then at 10 mi and multiples thereof to 50 mi. Population estimates for 2010 on in 10-year increments in Table 2.5-1. Table 2.7-16 has sector, distance, and χ/Q for EAB, residence/meat animal, vegetable garden, Unit 7, school, and property boundary. Table 5.4-1 contains exposure pathway parameters, and Table 5.4-2 provides direction and distance of maximally exposed individual. No milk animals within 5 mi of site per Section 5.4.1.2. Table 2.7-17 X/QD/Q 176 points, but not referenced in text. Reference is in Table 5.4-1, which provides total production rates for 50-mi radius, but not by sector. Dose estimates for 60 years after licensing, not 5 years. Section 5.4.1.3 states that dose rates from radiation sources within the site are negligible.	
465	Non-radiological Human Health	Bunn	ESRP 5.3.4	Has the applicant evaluated whether the potential exists for a detrimental impact from the thermal discharge on the concentration of etiological agents on the receiving waters?	Yes	No	Yes	The Florida Department of Environmental Protection regulates deep aquifer injection of wastewaters. The health concerns in that process need to be discussed (Section 5.3.4.1, pp. 5.3-11 and -12).	
466	Non-radiological Human Health	Bunn	ESRP 5.3.4	Has the applicant consulted with the State's public health department to adequately characterize the state's level of concern?	No	Yes	NA	This is a requirement in ESRP 5.3.4 and not a requirement for applicant. NRC staff should contact the State's public health department for input to EIS.	
468	Non-radiological Human Health	Bunn	ESRP 5.3.4	Has the applicant discussed the identification of etiological agents or diseases of concern for the plant proposed and the region where the plant is to be built? What is the incidence of infection in the region of influence?	No	No	Yes	Statement that "the etiological agents of concern are primarily found in freshwater" and "they would not be present in the makeup water from the radial collector wells" is contradictory with the list of etiological agents mentioned at the beginning of the section. <i>Vibrio</i> spp. are of concern in saline waters and the incidence of occurrence needs to be discussed (Section 5.3.4.1, pp. 5.3-11 and -12).	
469	Non-radiological Human Health	Bunn	ESRP 5.3.4	Has the applicant discussed procedures for protecting workers during activities with the cooling towers?	Yes	No	Yes	References to plant procedures for protecting workers around cooling towers and wastewater streams needs to be provided (Section 5.3.4.1, pp. 5.3-11 and -12).	

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
474	Non-radiological Human Health	MacLellan	ESRP 5.5.1	For discharges to land (other than at licensed commercial waste disposal sites), size and location of disposal sites, quantity and composition of wastes, and method of disposal (e.g., burial, combustion, and evaporation).	Yes	No	Yes		Section 5.5.1.1 doesn't provide size of onsite disposal site.
475	Non-radiological Human Health	MacLellan	ESRP 5.5.1	Plans for ultimate treatment and/or restoration of retired disposal sites (other than licensed commercial sites).	Yes	No	Yes		Retired sites not addressed.
488	Non-radiological Human Health	Bunn	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified other industrial activities that have occurred or will occur in the project area that may contribute to a cumulative impact with etiological agents?	No	No	Yes		Cumulative impacts from all operations at Turkey Point were not discussed (Section 5.11.8, pp. 5.11-11).
490	Non-radiological Human Health	Bunn MacLellan	ESRP 5.3.4	There are no technical deficiencies in support of resources for evaluating non-radiological human health sections mentioned in Review Interfaces in ESRP 5.3.4.	No	No	Yes		Information on the discharge to the deep aquifer is needed, but it is not in Chapter 5 and not complete in Section 3.4. For example, information is needed on the salinity and biocide concentration in discharge to confirm impact statement.
492	Non-radiological Human Health	MacLellan	10 CFR 51.45(c)	A description the environmental impacts of preconstruction activities related to non-radiological human health at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL in light of the preconstruction impacts, as explained in COL/ESP-ISG-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC's public website.	Yes	No	Yes		Preconstruction, LWA, and Construction schedules and workforces are discussed in Section 3.10, but the preconstruction/construction ratio is not provided. The ratio also cannot be calculated from the provided data because the Preconstruction and LWA workforces are combined.
512	Site and Technical Overview	Bryce McInturff	ESRP 2.1	High-oblique aerial view or perspective drawing of the site with an indication of the facility boundary (facility site should occupy about 10% of the view).	Yes	No	Yes		Outline of facility boundary not shown Figure 2.1-2
514	Site and Technical Overview	Bryce McInturff	ESRP 3.1	Topographic maps of the proposed site and vicinity (refer to ESRP 2.2) showing facility and station layout, the exclusion area, site boundary, liquid and gaseous release points (and their elevations), meteorological towers, the construction zone, land to be cleared, waste disposal areas, and other buildings and structures (both temporary and permanent) associated with the project.	Yes	No	Yes		Figure 2.7 does not show all features
524	Site and Technical Overview	Bryce McInturff	ESRP 4.7, 5.11	Information on cumulative impacts (both construction and operational impacts) of relevant actions within the identified geographic area.	Yes	No	NA		Section 5.11, Table 5.11-1 Reviewers for a number of other subjects have commented on the need for additional information on cumulative impacts.

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Row	Discipline	Subject Matter Expert	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	1.	2.	3.	4.	5. Remarks/Notes:
526	Site and Technical Overview	Bryce McInturff	ESRP 5.10	Proposed design or planned control program in each of the above areas.	Yes	No	NA		Table 5.10-1. See comments on cultural and aquatic ecology reviews
534	Site and Technical Overview	Bryce McInturff	RG 4.2, Rev 2: Page 5-3	Information concerning any cumulative buildup of radionuclides in the environment, such as in sediments.	Yes	No	NA		Sections 5.11.6 and 5.4.4. Discussion of radionuclide buildup was minimal
536	Site and Technical Overview	Bryce McInturff	10 CFR 51.50(c)	Does the ER satisfy 10 CFR 51.50(c) by identifying procedures for reporting and keeping records of environmental data, and any conditions and monitoring requirements for protecting the non-aquatic environment, proposed for possible inclusion in the COL as environmental conditions in accordance with 10 CFR 50.36b? This information may be found in an EPP. [NOTE - The EPP is sometimes in the ITAAC folder and is not part of the ER]	Yes	No	Yes		Part 10, License Condition 10, Appendix A (Draft Environmental Protection Plan – Non-radiological) Reporting and records procedures provided in the ER was minimal
547	Socioeconomics and Environmental Justice	Niemeyer	ESRP 2.5.2	Regional tax structure and distribution of the present revenues to each jurisdiction and district.	Yes	No	Yes		To get an accurate data set, 10 years of property tax payments made to the County are needed as well as the percentage of County tax revenues that Units 3 and 4 represent for those 10 years. Also an explanation for the drastic decrease and increase in taxes paid to the County in Table 2.5-19 is needed.
550	Socioeconomics and Environmental Justice	Niemeyer	ESRP 2.5.2	Information on highways and transportation systems, for example: 1. regional and local highway systems, including carrying capacity and condition of roads and highways 2. availability and type of public transportation 3. modifications that might affect traffic flow to and from the station site.	Yes	No	Yes		Further Review of the barging during construction is needed. Is 80 per unit a high end or low end number? How will this affect those around FPL (i.e., nearby park users)? During the PreAp, it was mentioned that barges run aground in Biscayne Bay. This is not addressed in the ER. Further review of the 36 trips per hour for fill is needed. Is 36 a high or low end number? How long will they be trucking in fill?
558	Socioeconomics and Environmental Justice	Niemeyer	ESRP 4.4.1	Predicted noise levels at sensitive areas identified in the first item listed above.	Yes	No	Yes		Further review is needed on the noise level at nearby parks (i.e., Biscayne National and Homestead Bayfront Park).
562	Socioeconomics and Environmental Justice	Niemeyer	ESRP 4.4.2	Taxes by type and jurisdiction to be paid during construction.	Yes	No	Yes		Further review of tax impacts may be needed. The ER states that the assessed value of Units 6 and 7 is unknown; therefore, the taxes are unknown.
588	Transportation	Daling	ESRP 3.8	Does the applicant estimate the heat load in a spent fuel shipping cask and compare the result to 10 CFR 51.52 Table S-4 conditions (i.e., 250,000 Btu/hr [-73 kW])?	No	NA	Yes		Unable to locate heat load estimate in ER. Not a significant deficiency.

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