

Docket File

OCT 11 1973

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Docket No. 50-251

ENVIRONMENTAL - FILE

Florida Power & Light Company
ATTN: Dr. James Coughlin
P. O. Box 3100
Miami, Florida 33101

Change No. 9
License No. DPR-41

Gentlemen:

By letter dated May 4, 1973, you proposed twenty revisions to the Environmental Technical Specifications attached as Appendix B to Facility Operating License DPR-41 for the Turkey Point Nuclear Plant Unit 4. This proposal also included License DPR-31 on the assumption that the same Appendix B would have been added to that license. By separate action these Environmental Technical Specifications are being added to License DPR-31, including those revisions approved as discussed below.

We have reviewed these proposed changes and approve certain of them. Items 9, 10, 11, 12, 15, 16, 19 and the second parts of 3 and 14 are approved on the basis that all these changes take the form of minor corrections or clarifications. Items 4 and 5 are acceptable in that they involve changes in required frequency of measurement of discharged water for salinity, dissolved oxygen, and turbidity from four times to three times a day, changes which will still provide adequate monitoring while also allowing a more orderly plant operation routine.

We conclude that the changes do not involve significant hazards consideration and there is reasonable assurance that the health and safety of the public will not be endangered. Accordingly, pursuant to Section 50.59 of 10 CFR Part 50, the Technical Specifications of Facility Operating License DPR-41 is hereby changed as set forth in revised pages which are enclosed.

Item 1 is not approved. Data appropriate to be analyzed to ascertain minimum usage of chlorine needed to be effective may well be available from other parts of the Turkey Point Station rather than only from the licensed facilities. The intent of Specification 2.3.b. is that any appropriate data available at the Turkey Point complex be used in this assessment.

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Item 2 is not approved. The intent of Specification 2.6 is to specifically note that additional or revised limitations may become appropriate.

The first part of Item 3 is not approved, since the consent decree was concerned with the entire plant at the Turkey Point site.

Items 6, 7, 8, 13, the first parts of 14 and 17, and 20 are not approved. The impacts which may result upon the environment from discharges from the cooling system will be a result of operation of both licensed and non-licensed facilities at Turkey Point. It is the intent of the specifications referenced in these proposed changes that monitoring of discharges and assessments of impacts be made for discharges from the cooling system even at times when the licensed facilities might not actually be contributing to the discharges; such discharges and their impacts will be additive to those which do result directly from operation of the licensed facilities.

Item 18 and the second part of 17 are not approved. The intent of the last sentences in Specifications 5.4.b.ii(a) and (c) is to specifically note that changes in the plant affecting environmental impacts or in the Environmental Technical Specifications shall be evaluated for safety as well as environmental considerations.

Sincerely,

R. C. DeYoung, Assistant Director
for Pressurized Water Reactors
Directorate of Licensing

Enclosure:

Revised pages (dated 8/10/73)
4, 6, 9, 10, 11, 12, 18,
19, 20, and 21 of Appendix B -
Environmental Technical
Specifications

Staff Evaluation

cc w/enclosures:

Mr. Jack Newman
Newman, Reis & Axelrad
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SURNAME ▶	RCleveland GWknighton	PSeiffert	POeck	GWknighton	DRMuller	REDeYoung
DATE ▶	8/21/73	8/31/73	9/16/73	9/14/73	9/14/73	10/3/73

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DATE ▶						

- b. After completion of the Card Sound Canal and until October 1, 1973, water shall not be discharged at an average 24-hour rate in excess of 2750 cfs into Card Sound and 1500 cfs into Biscayne Bay; thereafter, water shall not be discharged at an average 24-hour rate in excess of 2150 cfs into Card Sound and 2100 cfs into Biscayne Bay.

6. ADDITIONAL LIMITATIONS

Additional or revised limits of operation will be set forth as revisions occur in the mode of operation of the cooling system or as monitoring results indicate to be appropriate.

Bases:

The Final Judgment consent decree (Civil Action No. 70-328-CA in the United States District Court for the Southern District of Florida) and the AEC's Final Environmental Statement for Turkey Point Units 3 and 4 (July 1972) set forth needs for protection of the environment related to operation of this plant. The limits set forth above are in response to the discussions in those documents for temperature, chlorine concentrations, salinity, and velocity and flow of discharge water from the cooling system. In addition, it has been observed that turbidity of discharge water, primarily related to cooling channel construction activity, has a potential for adverse impact on the receiving waters. The limits set forth are expected to provide reasonable assurance that there will be no unacceptable adverse impacts on the environment from normal operation of the licensed facilities. It is recognized that these limits may be appropriately modified as the mode of operation of the cooling system is changed. |Change 9

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- (b) ammonia
- (c) biological oxygen demand and chemical oxygen demand (BOD and COD)

iii. Monthly for

Cu, Zn, Co, As, Hg

c. At mouths of Card Sound Canal and Grand Canal measurements on discharged water shall be made:

i. Not less often than at intervals of three times daily at as equal |Change 9
time intervals as practicable for:

- (a) salinity ± 1 ppt
- (b) dissolved oxygen (D.O.) ± 0.2 ppm

ii. Weekly at low slack tide on a weekday for:

- (a) suspended solids
- (b) dissolved and particulate organic carbon
- (c) total residual chlorine (free and combined forms)
- (d) COD, BOD and ammonia
- (e) pH ± 0.1

Records shall be maintained of additions of chlorine and all other chemicals from the licensed facilities to the water pumped through the licensed facilities.

3. TURBIDITY CONTROL

At the mouths of Card Sound Canal and Grand Canal measurements on discharged water shall be made not less often than three times daily at as equal time intervals as practicable |Change 9 for turbidity except when actions other than normal system operations may be expected to result in increased turbidity, in which circumstance measurements shall be done at hourly intervals.

4. FLOW AND VELOCITY OF DISCHARGE WATER

Flow and velocity of cooling system discharges from Grand Canal and Card Sound Canal shall be measured not less often than at hourly intervals.

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- a. Epibenthic biology: Four replicate samples will be collected at each of 12 stations. Collection will be in seining or trawling at monthly intervals and the samples will be analyzed both qualitatively and, where possible, quantitatively for identification of different species present, their relative abundance, biomass, life history stage, and size distribution.
- b. Benthic biology: Replicate benthic grab samples will be collected at the same stations as the epibenthic samples once every two months. Population characteristics, such as species composition, number of individuals, biomass, diversity and richness shall be determined. The data will be analyzed to detect any significant measurable changes in specific components of the benthic community. Samples will be taken to a depth of at least 20 cm, where practicable.
- c. Plankton: Water samples for plankton analysis shall be collected at each of nine stations, including one station each in the intake and both discharge canals.

Phytoplankton: Samples will be taken monthly and analyzed quantitatively in terms of sample volume to establish the dominant genera of the community, biomass, and chlorophyll "a" content. Primary production will be determined monthly.

Zooplankton: Samples will be taken monthly and analyzed quantitatively in terms of sample volume to determine generic composition, biomass and life history stage.

- d. Attached grasses, macroalgae and sponges: Twenty quadrats will be established in Card Sound and Biscayne Bay and examined every two months for biomass, growth, recruitment and relative health of the plant and animal community.
- e. Macroinvertebrates and fish impinged on the traveling screens in a given day (24 hours) three times a week at the licensed facilities will be identified by species, size and quantity, and the data will be recorded in tabular form. In each periodic report the data will be reviewed to determine whether the sampling frequency can be reduced. In the event of exceptional kills on the

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traveling screens or in the cooling system canals, notification shall be made within 24 hours by telephone or telegraph to the Director of the Region II Field Office of the Directorate of Regulatory Operations.

- f. Entrained Organisms: The effect of passage through the licensed facilities on survival of plant and animal forms will be evaluated to the level that present "state-of-the-art" techniques will permit. Representative water samples will be collected once every two weeks at the licensed facilities intake, plant discharge, a point partway down the Card Sound Canal, and at the discharge points of Grand Canal and Card Sound Canal into Biscayne Bay and Card Sound, respectively. The samples will be examined for numbers and kinds of representative organisms and their survival at different locations will be measured by applicable state-of-the-art techniques. Results will be compared with similar samples taken from four points in Biscayne Bay and Card Sound that are outside the influence of power plant operations.

The data obtained from the above programs (paragraphs 1.a through 1.f) shall be analyzed as they are collected and will be compared with model and analytical predictions and preoperational data that have been collected. A report to the AEC of the results of this evaluation will be submitted within 60 days of the end of each six-month period or fraction thereof terminating on June 30 and December 31 of each year. At the end of each year, the program and the need for its continuance will be reevaluated.

- g. Tolerance studies: Laboratory studies will be performed as a supplement to the existing programs being conducted by the University of Miami under AEC/FPL sponsorship to evaluate the effect of short-term exposures to temperatures and salinities that might be experienced under emergency conditions. These studies will be evaluated by July 1, 1974, and a report submitted to the AEC within 60 days thereafter, on the findings and any need for additional information.

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- h. Recovery in discharge areas: Following the construction and completion of the Card Sound control structure and closure of the Grand Canal discharge, quadrat stations in the affected area will be established to determine semiannually the rate of recovery in terms of sedimentation and revegetation by grasses and macroalgae.
- i. Assessment of impacts from turbidity in discharged water:
A program shall be conducted to assess the impacts on the receiving waters and marine ecosystems from turbidity in discharged water from the operation of the licensed facilities and the construction and testing of the cooling channel system. No later than thirty (30) days from the date of issuance of this license, FPL shall submit to the AEC Directorate of Licensing, for review and approval, the program implemented to provide this assessment.

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2. Groundwater

- a. Groundwater studies will be conducted through groundwater monitoring at 23 wells which have been drilled south and east of the cooling system area. These wells will be checked monthly for water level, conductivity (salinity), temperature and biocides, and every three months for transmissivity.
- b. A second groundwater program will be conducted in connection with an interceptor ditch located west of the cooling canal system to intercept cooling canal water from flowing westward underground. This program will involve monitoring of 41 wells and 10 surface points for temperature, water level and conductivity (salinity). The monitoring schedule for these locations varies in frequency from monthly to weekly. The monitoring schedule is reviewed on a quarterly basis by FPL with the Central and Southern Florida Flood Control District in consultation with the USGS. The monitoring schedule will continue as long as necessary as determined by the CSFFCD and the USGS.
- c. Copies of reports prepared periodically for paragraphs a. and b. above will be submitted to the AEC simultaneously.
- d. A water temperature survey will be conducted monthly in Biscayne Bay in the vicinity of the Grand Canal discharge and in Card Sound in the vicinity of the Card Sound Canal discharge. Temperatures just below the surface will be determined with calibrated thermocouples and strip chart recorder. Traverses will be made by boat along predetermined

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courses in the areas of interest. Information thus obtained will be used to construct isotherms on a map of the area. In addition, in-depth temperature measurements will be taken at certain locations along the traverses, and noted on the map. The data will be submitted within 20 days of the end of each period. The need for continuance of this program will be reviewed when a pattern is established or at the end of one year.

3. In view of the current testing of the cooling channel system and major changes from the once-through mode of operation, the surveillance program set forth above in sections 4.A.1.a, b, c, d, e, f and 2.d need not be performed during testing while there is no once-through operation. However, all of the above surveillance program or an AEC Staff approved alternative program (consistent with the operating mode determined by the test program) must be instituted no later than January 1, 1974. An alternative program for monitoring during revised mode of operation shall be prepared and submitted to the AEC by October 1, 1973. Until such alternative program is approved, FPL shall initiate the above surveillance program whenever the cooling system is operated in a once-through mode and shall notify the Region II Office of Regulatory Operations and the Directorate of Licensing in accordance with Section 5.4.b.ii.a.

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B. TERRESTRIAL ENVIRONMENT

1. Baseline Program

In order to establish baseline conditions that are characteristic of the South Florida terrestrial ecosystem, an intensive and comprehensive three-year research program shall be conducted to provide control information against which the impact of the cooling canal system can be evaluated. This planned ecological program will include the following:

- a. Definition of different types and relative abundance of natural plant associations as a function of topography over a 10,000-acre tract of land that includes tidal, mangrove salt marshes, freshwater wetlands, and dry land communities. This will include analyses of the characteristics of the soils in which these plants are formed (e.g., depth of organic layer, pH, available nutrients, soil profile, salinity, etc.) as a basis for predicting conditions under which these plant associations will survive.

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5.0 ADMINISTRATIVE CONTROL

Objective: To describe the administrative controls and procedures necessary to implement the environmental technical specifications.

Specification: 1. REVIEW AND AUDIT

The licensee shall be responsible for the establishment, execution and review of the necessary programs to administer the Environmental Technical Specifications (ETS). The licensee may delegate to other organizations the work of establishing and executing portions of the ETS, but shall retain responsibility therefor.

Administrative measures should provide that the individual or group assigned the responsibility for auditing or otherwise verifying that an activity has been correctly performed is independent of the individual or group directly responsible for performing the specific activity. The review function should not be performed by supervisory personnel involved in the activity under review.

The licensee shall establish organizational and administrative procedures that will provide for both management review and independent audit functions for the following areas:

- a. Environmental technical specifications
- b. Results of the environmental monitoring programs prior to their submittal in each semiannual Environmental Monitoring Report.
- c. Proposed changes to the environmental technical specifications and the evaluated impact of the change.
- d. Proposed changes or modifications to plant systems or equipment and the evaluated impact which would require a change in the procedures described in f. below, or which would affect the evaluation of the licensed facilities environmental impact.
- e. Coordination of environmental technical specification development with the safety technical specifications to avoid conflicts and for consistency.
- f. Proposed sampling, analysis, calibration and alarm

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check procedures, as specified in 5.3.a. and any other proposed procedures or changes thereto as determined by the responsible company official to affect the licensed facilities environmental impact. |Change 9

- g. Investigation of all reported instances of violations of environmental technical specifications, including appropriate recommendations to prevent recurrence.

2. ACTION TO BE TAKEN IF A PROTECTION LIMIT IS EXCEEDED

- a. Exceeding a protection limit should be promptly reviewed as specified in Section 5.1.
- b. As specified in Section 5.4.b., a separate report for each occurrence should be prepared. This report should include an evaluation of the cause of the occurrence, a record of the corrective action taken, and recommendations for appropriate action to prevent or reduce the probability of a recurrence.
- c. The circumstances of the occurrence should be reported to the AEC as specified in Section 5.4.b.

3. OPERATING PROCEDURES

- a. Detailed written procedures, including applicable checkoff lists and instructions, should be prepared, approved as specified in Section 5.3.b. and adhered to for operation of all systems and components involved in carrying out the environmental monitoring program. Procedures should include sampling, instrument calibration, analysis, and actions to be taken when limits are approached or exceeded.

Calibration frequencies for instruments used in performing the measurements required by the environmental technical specifications should be included.

Testing frequency of any alarms should be included. These frequencies should be determined from experience with similar instruments in similar environments and from manufacturers' technical manuals.

- b. All procedures described in 5.3.a above, and changes thereto, should be reviewed and approved, as specified in Section 5.1, prior to implementation. Temporary changes to procedures

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which do not change the intent of the original procedure may be made, provided such changes are approved by two members of the company management staff. Such changes should be documented, subsequently reviewed and approved on a timely basis.

4. PLANT REPORTING REQUIREMENTS

- a. A Semiannual Environmental Monitoring Report covering the previous six months operations should be submitted within 60 days after January 1 and July 1 of each year. The first such period should begin with the date of initial criticality. In the event that some results are not available within the 60 day period, the report should be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

These reports should include the following:

- i. Records of monitoring requirement surveys and samples.
- ii. Analysis of environmental data.
- iii. Records of changes in survey procedures.
- iv. List of any special environmental studies related to the licensed facilities not required by the environmental technical specifications.
- v. Records of any violations of the environmental technical specifications.
- vi. Records of changes as described in Section 5.4.b.

b. Non-Routine Reports

- i. In the event that a protection limit is exceeded, or the occurrence of an unusual event associated with construction or operation of the licensed facilities involves a significant environmental impact, a report should be made within 24 hours by telephone or telegraph to the Director of the Region II Office of Regulatory Operations, followed by a written report within 10 days to the Director of Licensing (cc to Director of the Region II Regulatory Operations Office).

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The written report and to the extent possible the preliminary telephone or telegraph report should:

- (a) describe, analyze and evaluate implications, (b) determine the cause of the occurrence, and (c) indicate the corrective action (including any significant changes made in procedures) taken to preclude repetition of the occurrence and to prevent similar occurrences involving similar components or systems.

ii. Changes

- (a) When a change to the plant (that affects the environmental impact evaluation contained in the Environmental Report or the Environmental Statement) or to the environmental monitoring procedures or equipment is planned, a report of the change should be submitted to the AEC for information prior to implementation of the change. This is not intended to preclude making changes on short notice that are significant in terms of decreasing adverse environmental impact. However, these changes should be promptly reported. The report should include an evaluation of the impact of the change for both environmental and safety considerations.
- (b) All documentation concerning changes or additions to permits and certificates required by Federal, State, local and regional authorities for the protection of the environment should be submitted to the Deputy Director of Reactor Projects, Directorate of Licensing USAEC, for information. The submittal should include an evaluation of the environmental impact of the change.
- (c) Request for changes in environmental technical specifications should be submitted to the Deputy Director of Reactor Projects, Directorate of Licensing, USAEC, for prior review and authorization. The request should include an evaluation of the impact of the change for both Safety and Environmental considerations.

5. RECORDS RETENTION

- a. Records and logs relative to specifications contained in Section 5.0 of the environmental technical specifications should be retained for five years except as described in 5.5.b. below.
- b. All records and logs relative to the following areas should be retained for the life of the licensed facilities:

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UNITED STATES ATOMIC ENERGY COMMISSION

ENVIRONMENTAL EVALUATION BY THE DIRECTORATE OF LICENSING

DOCKET NOS. 50-250 AND 50-251

FLORIDA POWER AND LIGHT COMPANY

INTRODUCTION

By letter dated May 4, 1973, Florida Power and Light Company proposed twenty revisions to the Environmental Technical Specifications attached as Appendix B to Facility Operating License DPR-41 for the Turkey Point Nuclear Plant Unit 4. This proposal also included License DPR-31 on the assumption that the same Appendix B would be added to that license. This has been accomplished by Amendment 1 to DPR-31 dated

EVALUATION

We have reviewed these proposed changes and approve the following:

Items 9, 10, 11, 12, 15, 16, 19, and the second parts of 3 and 14.

These changes take the form of minor corrections or clarifications. Items 4 and 5 are acceptable since they involve changes in required frequency of measurement of discharged water for salinity, dissolved oxygen, and turbidity from four times to three times a day; changes which will still provide adequate monitoring while also allowing a more orderly plant operation routine. No safety related systems are affected by these revisions.

The following changes are not approved for the reasons stated below:

Items 1, 2, 6, 7, 8, 13, 17, 18, 20, and the first parts of 3 and 14.

Item 1 - Data appropriate to be analyzed to ascertain minimum usage of chlorine needed to be effective may well be available from other parts of the Turkey Point Station rather than only from the licensed facilities. The intent of Specification 2.3.b is that any appropriate data available at the Turkey Point complex be used in this assessment.

Item 2 - The intent of Specification 2.6 is to specifically note that additional or revised limitations may become appropriate.

Item 3 (first part) - The consent decree was concerned with the entire plant at the Turkey Point site.

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Items 6, 7, 8, 13, the first parts of 14 and 17, and 20 - The impacts which may result upon the environment from discharges from the cooling system will be a result of operation of both licensed and non-licensed facilities at Turkey Point. It is the intent of the specifications referenced in these proposed changes that monitoring of discharges and assessment of impacts be made for discharges from the cooling system even at times when the licensed facilities might not actually be contributing to the discharges; such discharges and their impacts will be additive to those which do result directly from operation of the licensed facilities.

Items 18 and the second part of 17 - The intent of the last sentences in Specifications 5.4.b.ii(a) and (c) is to specifically note that changes in the plant affecting environmental impacts or in the Environmental Technical Specifications shall be evaluated for safety as well as environmental considerations.

CONCLUSION

Based on the above, we have concluded that the approved changes are environmentally appropriate and do not present significant hazards consideration and there is reasonable assurance that the health and safety of the public will not be endangered.

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