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A. Giambusso	1 signed			SENT AEC PDR ✓ SENT LOCAL PDR ✓

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(U) PROP INFO		1	50-302

DESCRIPTION: Ltr re our 5-12-72 ltr...furnishing addl info re benefit/cost analysis performed as part of enviro considerstions & trans:

ENCLOSURES: Subject Items Requiring Additior Information - Crystal River Unit 3 Plant.....

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ACKNOWLEDGED

PLANT NAMES: Crystal River Unit 3 Plant

FOR ACTION/INFORMATION DL 6-29-72

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FLORIDA POWER CORPORATION
ST. PETERSBURG FLORIDA

June 23, 1972

A. Giambusso
Deputy Director for
Reactor Projects
Directorate of Licensing
United States Atomic Energy
Commission
Washington, D.C. 20545

In re: Crystal River Unit 3
Nuclear Generating Plant
Docket No. 50-302

Dear Mr. Giambusso:

This letter is in response to the request contained in your letter of May 12, 1972, that we supply additional information concerning the benefit-cost analysis performed as part of the environmental considerations of Crystal River Unit 3. Specifically you requested that we provide information not already submitted in the Crystal River Unit 3 Environmental Report, but described in the attachment to your May 12 letter entitled Guide for Submission of Information on Costs and Benefits of Environmentally Related Alternative Designs for Defined Classes of Completed and Partially Completed Nuclear Facilities, May, 1972. You requested that we submit this information within a period of six weeks from our receipt of your letter.

Since receipt of your letter, we have carried out a detailed comparison between the Guide and the Environmental Report to identify information described in the Guide which was not already submitted. As you are aware the Environmental Report was recently updated by the addition of Supplement 1 which contains the responses to requests for additional information generated by the AEC and members of the site evaluation team from Battelle Northwest Laboratories. These requests followed a site visit by the site evaluation team and AEC representative. During this visit, considerable discussions of the Crystal River Unit 3 environmental interactions took place. As a result, the requests were addressed primarily to key environmental factors and considerations. The responses, therefore, added considerably to the completeness of the Environmental Report.

We conclude, as a result of our comparison of the Guide and the Environmental Report, that the main requirements of the Guide have been met in content. The items listed on the attached sheets represent subjects which should receive attention from us for further clarification and documentation in accordance with the Guide requirements. This additional coverage combined with the material already presented in the Environmental Report will, in our opinion, meet the content requirements of the Guide.

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It is our intent to submit to you additional information pertaining to the attached subject items, within four (4) to six (6) weeks from the date of this letter. We feel that this amount of time is necessary for us to adequately address the subject items. Our submittal will be in the form of Supplement 2 to the Environmental Report.

Please feel free to contact us if further discussion or clarification is required.

Yours very truly,

J. T. Rodgers
Asst. Vice President &
Nuclear Project Manager

JTR/mcf
Attachments

Subject Items Requiring Additional Information

Crystal River Unit 3 Nuclear Generating Plant

Docket No. 50-302

1) The investment in Crystal River Unit 3 expected to be incurred annually between the date of filing of the Environmental Report and the date of completion of the facility.

2) The plant design which results in the minimal environmental cost should be identified. The alternative design for the plant (alternative cooling system) which results in the overall minimum environmental impact will be identified or justified.

3) Passage through the condenser and retention in closed cycle cooling systems. Identify all important fish species. Estimate the annual weight of each specie that will be destroyed. For larvae, eggs, and young-of-the-year destroyed, only the expected population that would have survived naturally need be considered.

4) Thermal plume impacts on physical water quality must be evaluated. The average BTU per hour dissipated to the receiving water at full power and the water volume and surface areas within differential temperature isotherms of 2°, 3° and 5°F under conditions that would, with respect to annual variations, tend to maximize the extent of these areas. Volumes must be estimated for cooling alternatives and base plant design.

5) The oxygen availability must be estimated for volumes of affected waters with concentrations below 5, 3 and 1 ppm, under conditions that would tend to maximize the impact for all cooling alternatives and base plant design.

6) Field measurements are required for aquatic biota to establish the average weight of organisms per unit volume by group. The mortality of organisms must be estimated in the receiving water from direct and indirect effects, and the loss translated to pounds of fish.

7) The area of wet land or water surface impaired as a wildlife habitat because of thermal discharges, including effects on food resources, must be determined. Estimates of populations affected by species must be documented for wildlife (including birds, aquatic, and amphibious mammals and reptiles.

8) The fraction of the migrating fish stock that is prevented from reaching spawning grounds because of plant operation must be estimated. This must be prorated directly to a reduction in current and long term fishing effort supported by that stock. Estimates must be justified on basis of local migration patterns, experience at other sites, and applicable state standards.

9) The effects of radionuclides discharged to the air and to water bodies for cooling alternatives and base plant design must be determined for:

a. Aquatic Organisms

Dose contributions from radionuclides expected to be released must be summed (rem/year).

b. People, External

Annual dose contributions from nuclides expected to be released must be summed to include calculations for water activities (skiing, fishing, and boating), in-water activities (swimming) and shoreline activities (rem/year).

c. People, Ingestion

Biological accumulation in foods, and intake by individuals and populations must be estimated. Swimming results must be calculated for expected doses of radionuclides (rem/year).

10) Fogging

a. Ground Transportation

The number of hours per year that driving hazards will be increased on paved highways by fog and ice from cooling towers and ponds must be computed. Documentation should include the visibility criteria used for defining hazardous conditions on the highways actually affected.

b. Air Transportation

The number of hours per year that commercial airports will be closed because of fog from cooling towers must be computed.

c. Water Transportation

The number of hours per year ships will need to reduce speed becuase of fog from cooling towers or ponds or warm water added to the surface of the river, lake or sea must be calculated.

11) Land, Flood Control

Reference must be made to regulations of cognizant Flood Control Agency by use of one of the following terms: Has NO IMPLICATIONS for flood control. COMPLIES with flood control regulation.

12) Salt discharges from salt water cooling tower alternatives must be evaluated as follows:

a. People

The amount of salts discharged as drift and particulates must be estimated. Maximum deposition must be reported. Supporting documentation should include patterns of deposition and projection of possible effect on water supplies.

b. Plants and Animals

Salt tolerance of vegetation in the affected area must be determined. That area, if any, receiving salt deposition in excess of tolerance (after allowance for dilution) must be estimated. Report separately an appropriate tabulation of acreage by land use. Specify such uses of recreational, agricultural and residential. Where wildlife habitat is affected, identify populations.

c. Property Resources

If salt spray impinges upon a local community, property damage may be estimated by applying to the local value of buildings, machinery, and vehicles a differential in average depreciation rates between this and a comparable sea-coast community to obtain an estimate of annual losses.