Florida Power
CORPORATION

March 15, 1984
3F0384-09

Mr. H. R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72
NPDES Permit Reporting

Dear Sir:

Florida Power Corporation hereby submits the attached Notes of Conference from the Second Quarterly Progress Meeting concerning the Crystal River 316 Study. This information is submitted in accordance with Crystal River Unit 3 Technical Specification, Appendix B - Part II, Section 3.2

If there are any questions concerning this information, please contact this office.

Sincerely,

G. R. Westafer

G. R. Westafer
Manager, Nuclear Operations
Licensing and Fuel Management

Attachment

DHV/feb

cc: Mr. J. P. O'Reilly
Regional Administrator, Region II
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
101 Marietta Street N.W., Suite 2900
Atlanta, Georgia 30303

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Florida Power
CORPORATION

March 5, 1984

Mr. Charles H. Kaplan
Water Management Division
Permits Section
U. S. Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30365

Subject: Crystal River 316 Study

Dear Mr. Kaplan:

Enclosed is a copy of the Notes of Conference from our Second Quarterly Progress Meeting, held on February 2, 1984. Should you have any comments or questions regarding these notes, call me in St. Petersburg at (813) 866-5521.

Sincerely,

Paul J. Behrens

Paul J. Behrens

PJB/gr

Enclosure

NOTES OF CONFERENCE J.C.No. 14498

FLORIDA POWER CORPORATION

Held in the Offices of
Florida Power Corporation
St. Petersburg, FL
February 2, 1984

Present for:

Florida Power Corporation (FPC)

David Voigts
Paul Behrens

U.S. Environmental Protection Agency (EPA)

Charles Kaplan
Delbert Hicks

Florida Department of Environmental Resources (DER)

Lawrence Olsen
Doug Farrell

U.S. Fish and Wildlife Service (FWS)

Jack Gallagher

Mote Marine Laboratory (MML)

Kumar Mahadevan

Stone & Webster Engineering Corporation (SWEC)

Tom Biffar
David McDougall
Tom Folger

PURPOSE

The meeting constituted the Second Quarterly Progress Meeting for the Crystal River NPDES 316(a) and (b) studies.

DISCUSSION

Attachments 1 and 2 provide the meeting agenda and the attendance list. Mr. Behrens opened the meeting, noting that a summary plan of study had been produced as requested at the first quarterly progress meeting and distributed to interested parties.

Dr. Biffar reported that Station L, a grassbed station for plankton sampling, was relocated on October 24 as the grassbed no longer existed. It was suggested that sampling continue at the new location but that re-establishment of the grassbed be monitored. Should the grass reach

previous densities, supplemental sampling at the original site will be considered. In the course of the discussion Dr. Mahadevan noted that Stations L and M were not intended to be comparable and do have different dominant macrophytes. It was also noted that the crab tagging program began in September and was completed in early January. Dr. Farrell expressed some concerns that female movements as influenced by the intake spoil dike would not be adequately monitored without further sampling, however, it was pointed out that the program had been designed and previously approved to run from September through December. DNR's longer term return information could be used to supplement the site-specific data. Dr. Farrell is particularly interested in total catch, male versus female ratio and catch by station.

Dr. Mahadevan reviewed the status of field collections and laboratory analyses as summarized in Tables 3-1 and 3-2. No exceptions were taken regarding any of the biological tasks. Mr. Kaplan inquired about the ground truthing question raised at the first meeting and was told that macrophytes at locations other than specific station locations are also investigated and recorded. Mr. Kaplan questioned the lack of available aerial photographs and asked if EPA Las Vegas had been contacted for help. MML had done this and got no new suggestions. Mr. Hicks indicated that experience in the present program is about what he would expect considering meteorological and water quality conditions. Dr. Voigts noted the desirability of hand-held, amateur photographs in lieu of no photographs. Changes in gear types as described in the first quarterly meeting are working well.

Mr. Kaplan was concerned that references in Table 3-1 to stations missed during low-tide, photometry sampling do not always correspond to data presented in the data tables. Table 3-1 will be reviewed and corrected as necessary for future reports, but it was noted that the table is not intended to be as precise as the data. Mr. Kaplan also referred to several apparently incorrect temperature records in the monthly temperature tables. Most numbers questioned were correct when compared to field logs but two values were input errors. An additional check will be put into the system to a) evaluate field data for "reasonableness" before input and b) evaluate variations within and between stations. Relative to the weekly temperature data, Mr. Kaplan stated that EPA documented by letter (April 22) their desire for plume plots and acreage determinations for each survey. After an extended discussion of the need for such an effort, it was suggested that only plots of worst case temperature under high and low tide conditions, approximately each six weeks (the benthic core schedule) might be sufficient. Dr. Voigts asked SWEC to develop one set of plots for Mr. Kaplan's review. Discussion between Mr. Behrens and Mr. Hicks subsequent to the meeting suggested that plots of weekly data would not be needed if these data are to be correlated directly with the biological data (see Attachment 3). Plant heat output data is needed to correlate with the measured temperature.

Dr. Mahadevan reported better thermograph recovery since markers were changed. Mr. Kaplan noted that EPA has been reviewing thermograph data recovery especially for July, August and September. They expect to make a decision on adequacy in the near future. If the data are judged inadequate,

EPA may request an extension of the collections to cover June, July and August, 1984. Mr. Behrens questioned the level considered adequate and the need for an extension since recovery may be no ! tter in 1984. He stated that if more data were requested, collecting a ewer stations should be considered. Mr. Hicks agreed that 75 percent recovery was reasonable and stated that his prime interest was in "bottom" units and only Stations 17B and 45B appear to have real problems. DER is interested in having adequate data for a mixing zone determination and would be concerned with gaps in the temperature data.

Adequacy of tide height data was briefly discussed. Boundary stations are most important but even loss of data at some of these stations can be compensated for, although with difficulty. Latest information from MML is that data enhancement efforts have been successful and good recovery of boundary information will result. Exact status will be known in two weeks and EPA will be notified.

It was agreed that, if necessary, scheduled photometry and related water quality sampling would be altered to ensure sampling correlated with storms and barge traffic the necessary number of times.

Meteorology data from FPC has been obtained to compensate for the August gap in data from MML's facility. Data from overlapping periods will be compared to define the relationship between the two sets of data.

Replication adequacy is being reviewed for benthic samples. Several parameters such as saturation curves, density changes, Shannon-Weaver and Morisita's index are being used. The results should be available in about two weeks. Dr. Farrell is interested in the Shannon-Weaver results.

Oyster reef data is being affected by sediment at certain stations. As sedimentation occurs, cages are being lifted but not relocated. It was agreed that this was appropriate.

Mr. Kaplan noted several open items from the earlier meeting. In particular, the definition of ambient temperature remains open. EPA does need any revision of the MML Quality Assurance Manual/Standard Operating Procedures. The need for additional entrainment sampling was discussed at length. Since it was estimated that complete mixing requires much of the discharge canal and that settlement of plankton in the canal is unlikely given ambient currents, Station C in its present location will suffice.

Mr. Kaplan stated that the quality assurance program in place is acceptable; DER has no definitive problem. Mr. Kaplan also reiterated program changes made since June, 1983 and requested and received formal approvals. The changes were: moving Stations B, I, K and L; inclusion of only Stations 4-30 in the 90 minute window; deletion of fish stomach analysis and changing the crab tagging program. The movement of Station L should be documented by letter to EPA. While no new entrainment sampling station is needed, Station C should be sampled at an appropriate interval after Stations D and E. The Technical Specification Summary submitted previously is

acceptable. Extending thermograph data collection for three months is still under consideration.

Mr. McDougall reported the status of modeling. Model setup and testing with mock data has been successful; the site grid and a model velocity output were displayed. The computer programs and procedures to handle data on tides, currents, water quality and meteorological conditions have been completed and the August data will soon be prepared for use as model input; data from Station 5 were displayed. The last of the August data should be received within the week. Returns are better than previously thought, but in either case should be sufficient for the modeling effort. The January surveys have been completed and data from the in situ meters should be available in about a month. The near-field model has not yet been selected. Mr. Kaplan reiterated his concern with multilayer plume conditions; this phenomenon will be handled in the near-field but is not modeled in the far-field.

Dr. Biffar passed out some explanatory notes concerning the data presentations and data tables as follows: replacement salt marsh (Spartina) tables, new oyster mortality tables for November, replacement impingement tables, replacement drop net biomass tables, and a new crab tagging table. Mr. Hicks would like to see species lists by family. Input on desired analyses are requested for the next meeting. A summary of anticipated analyses will be included in the next report as a starting point for the discussion.

TBiffar:PBF

ATTACHMENT 1

AGENDA

SECOND QUARTERLY PROGRESS MEETING

CRYSTAL RIVER NPDES STUDIES

1. Introduction - P. Behrens
2. Program Changes - T. Biffar
3. Field Work and Laboratory Analysis - S. Mahadevan
4. Hydrodynamic and Hydrothermal Modeling - D. McDougall
5. Data Tables and Data Analysis - T. Biffar
6. Discussion

ATTACHMENT 2

Attendees

2nd ~~Study~~ Progress Mtg

TOM BIFFAR	~~State of Wash.~~
KUMAR MAHADEVAN	Mote Marine Laboratory
Thomas A. Folger	Stone & Webster Eng. Corp.
David W McDougall	" " " "
Delbert B. Hicks	EPA
CHARLES H. KAPLAN	"
JACK GALLAGHER	USFWS
David Voigts	FPC
Doug Farrell	FDER
Lawrence A. Olsen	FDER
Paul Bowers	FPC

Attachment 3

Dr. S. Mahadevan has prepared the following response regarding the use of weekly temperature data (collected in conjunction with light, conductivity and pH measurements) in the assessment of thermal impact on the benthic infaunal community in the vicinity of Florida Power Corporation's Crystal River Power Plant.

In the original Plan of Study bottom temperature at the benthic stations was proposed to be collected monthly in conjunction with the infaunal sampling program. In MML's review of the Plan of Study, such a sampling frequency was considered inadequate and MML recommended that weekly sampling of temperature and other parameters be conducted at the infaunal stations in order to statistically delineate temperature differences at the stations.

It is anticipated that this information will be used as follows:

1. Confirming the validity of northern and southern control stations in terms of temperature regime.
2. In terms of temperature, classify the stations in thermal area according to the gradation of delta T's as determined from 6 weeks or quarterly averaged data and comparing the thermal stations with paired control stations.
3. Identify in terms of infaunal benthic community characteristics, the gradation of stations that are different or under stress. Utilizing the information obtained in Item #2 (above), along with similar information from other physical parameters, identify the thermally altered stations and thereby the area of thermal impact.

Therefore, all the analyses of temperature data will be on an inter and intra station basis with emphasis on bottom temperature and not vertical profiles. The utility of extrapolated plots or isotherms (as suggested by the Environmental Protection Agency) will be limited for purposes of the benthic community impact assessment.