

## SUPPLEMENTARY INFORMATION

1. Report No.: 50-302/79-099/04L-0
2. Facility: Crystal River Unit No. 3
3. Report Date: November 7, 1979
4. Occurrence Date: Summer quarter of 1979  
(discovered 29 October 1979)  
(determined at plant 31 October 1979)
5. Identification of Occurrence:

A difference of more than two standard deviations ( $>2\sigma$ ) existed between the preoperational study and the operational study in the metabolic functions of the following aquatic systems adjacent to Crystal River Unit No. 3:

  - a) Discharge Salt Marshes (Spartina) for dead biomass during the Summer quarter.
  - b) Discharge Salt Marshes (Juncus) for live biomass and dead biomass during the Summer quarter.
6. Conditions Prior to Occurrence:

The site generation capacity factor for the third (Summer) quarter of 1979 was 60.4%. Crystal River Unit No. 3 was shutdown from April 23 through July 29, 1979.
7. Description of Occurrence:

In Table 1 is the description of the preoperational mean, the preoperational two standard deviation ( $2\sigma$ ), the operational mean, and the determination whether the operational mean was greater than ( $>$ ) or less than ( $<$ ) the preoperational mean  $\pm$  two standard deviations for each of the items of Section 5, above.
8. Designation of Apparent Cause:

The apparent causes of the greater than two standard deviation change of the metabolic functions in the Salt Marshes could be natural or seasonal variations or these variations in conjunction with the increased thermal output from the site due to Crystal River Unit No. 3.
9. Analysis of Occurrence:

In the Salt Marshes, the possible natural or seasonal variations in conjunction with the possible effect of the Crystal River Unit No. 3

9. Analysis of Occurrence: (Continued)

addition to the site thermal discharge may have caused the change in the metabolic functions observed in the operational study as compared to the preoperational study. However, these changes may be temporary as the ecosystem reorganizes itself to the new conditions. The suggestion of cause and effect by Crystal River Unit No. 3 can only be corroborated by the continuance of this study since greater than two standard deviation difference did not exist between preoperational and the operational data in the remaining metabolic functions.

A period of adjustment of the ecosystem was expected concurrent with Crystal River Unit No. 3's initial operation. Therefore, changes in the operation of the unit are not required, and the present program to monitor the environment will be continued.

10. Corrective Action:

The change in metabolic functions in the Discharge Salt Marshes cannot, at this time, be attributed to either natural phenomenon or a specific man-made cause. Therefore, the present study will be continued to verify, if possible, the cause. Until such time, no corrective action can be defined.

11. Failure Data:

This is the sixth report for this type occurrence. Refer to:

78-022/04L-0, dated 31 July 1978.  
78-024/04L-0, dated 19 September 1978.  
79-021/04L-0, dated 3 April 1979.  
79-039/04L-0, dated 1 May 1979.  
79-064/04L-0, dated 2 August 1979.

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Table 1

<u>Aquatic System</u>	<u>Metabolic Function</u>	<u>Quarter</u>	<u>Preoperational</u>		<u>Operational</u>	<u>Operational Mean &gt; or &lt; Preoperational Mean <math>\pm</math> 2<math>\sigma</math></u>
			<u>Mean</u>	<u>2<math>\sigma</math></u>	<u>Mean</u>	
Discharge Salt Marshes ( <u>Spartina</u> )	Dead Biomass (g/m <sup>2</sup> )	Summer	450	133	584	>
Discharge Salt Marshes ( <u>Juncus</u> )	Live Biomass (g/m <sup>2</sup> )	Summer	525	320	1120	>
	Dead Biomass (g/m <sup>2</sup> )	Summer	890	430	1540	>

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