

FLORIDA POWER & LIGHT COMPANY  
ST. LUCIE UNIT NO. 1  
REPORTABLE OCCURRENCE NO. 335

TITLE: Maximum Condenser Temperature Rise

A. Description, Analysis and Evaluation

Reportable Occurrence Nos. 335-B-78-03, -04, -07 and -08 described occasions on which the condenser temperature rise at St. Lucie Unit No. 1 was observed to be in excess of 24°F. Another instance of this type occurred in December as follows:

<u>DATE</u>	<u>TIME</u>	<u>ΔT</u>	<u>POWER</u>	<u>FLOW</u>
12-27-78	0300	24.75°F	100%	495,000 gpm

As was described in the earlier R.O.'s cited above, the circulating water system at the St. Lucie Plant has been experiencing conditions of system fouling which have caused the condenser temperature rise to slightly exceed 24°F. These conditions of fouling make the temperature rises which have been experienced acceptable as per ETS 2.1.2. This event is being reported, however, as a continuing item of potential public interest concerning environmental impact from plant operation in accordance with ETS 5.6.2.a.

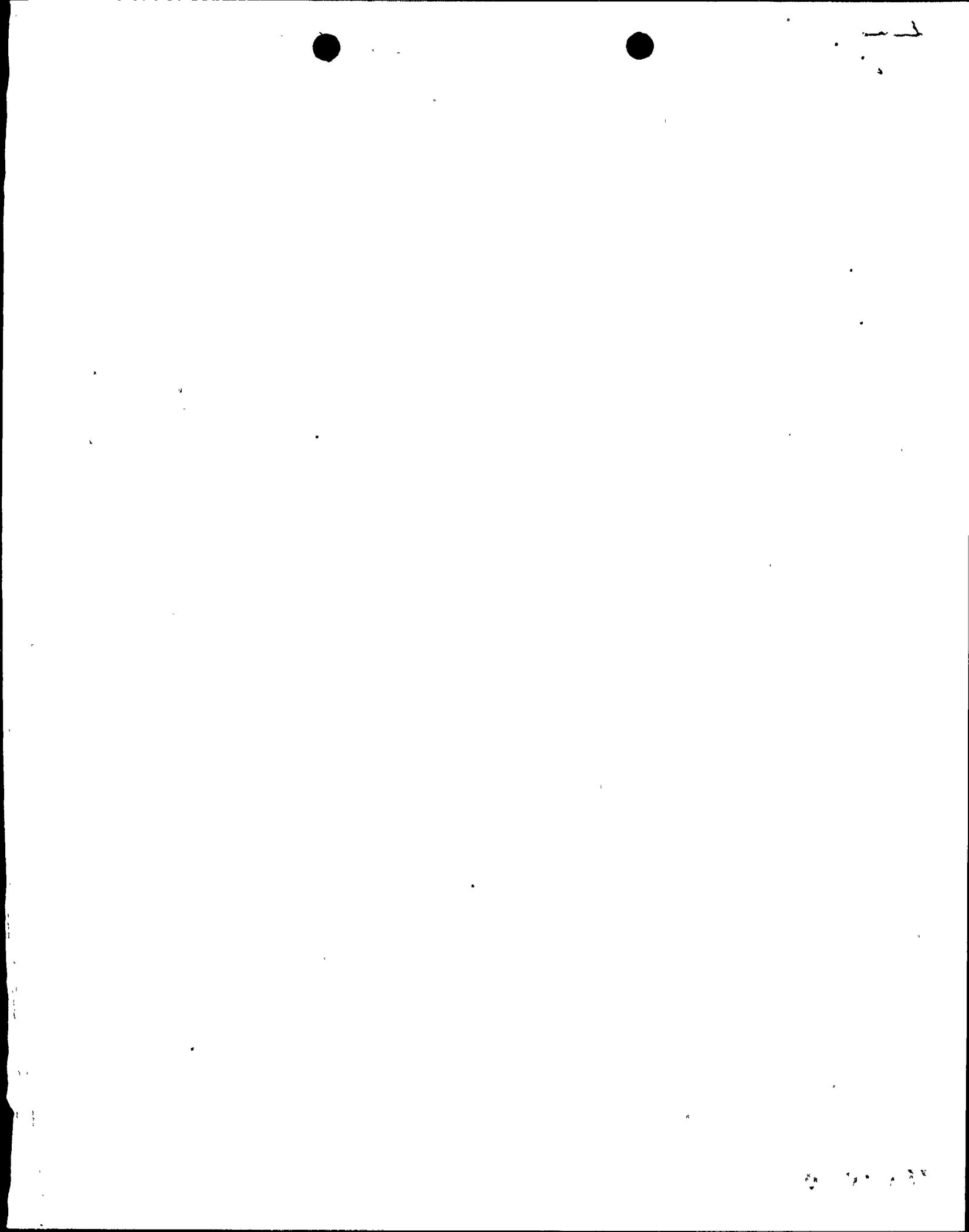
No instance of discharge canal temperature exceeding the limit of 111°F (ETS 2.1.1) was observed at a time corresponding to the reported condenser temperature rise. Therefore, it is believed that no adverse environmental impact has resulted from this event. Also, the discharge area thermograph recorders which are located in the vicinity of the hot spot have shown no times at which the maximum allowable instantaneous temperature in the hot spot was exceeded.

B. Cause

The conditions of the circulating water system which caused these events have been described in the previous R.O. reports which were cited in Section A above.

C. Corrective Action

Operation of the condensers at greater-than-design flow has been undertaken occasionally to help prevent exceeding the condenser ΔT limit and can continue up to some point. However, this mode of operation is considered undesirable for long term operation since it will affect the integrity of the Aluminum-Brass condenser tubes.



By letter dated August 29, 1978 (L-78-281) we requested that the allowable condenser  $\Delta T$  be increased to 26°F for an interim period. We are awaiting licensing action on this request.

At this time, it is planned to replace the existing Aluminum-Brass condenser tubes with titanium tubes during the cycle 3 refueling outage for St. Lucie 1, expected to begin in April, 1979. Although this is expected to restore some of the operating margin to the system, such that the condenser  $\Delta T$  can be maintained at or below 24°F for some period of time, it does not address any anticipated future degradation in system performance. FPL therefore plans to request a permanent modification of the ETS to allow operation at a higher condenser  $\Delta T$  upon completion of the necessary environmental assessments.

