

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 FACIL: 50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co. 05000335
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 RECIP. NAME RECIPIENT AFFILIATION
 CLARK, R. A. Operating Reactors Branch 3

SUBJECT: Forwards supplemental info to 821206 ltr re post-accident sampling sys, as result of 830627 conversations. Heat tracing will be installed on atmosphere sample line by 840630.

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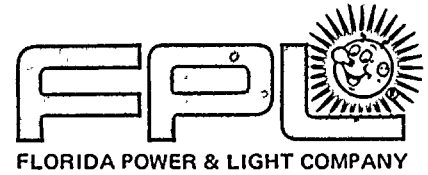
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	NRR/DSI/METB	1 1	NRR/DSI/RAB	1 1
	<u>REG FILE</u> 04	1 1	RGN2	1 1
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August 15, 1983
L-83-446

Office of Nuclear Reactor Regulation
Attention: Mr. Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Clark:

Re: St. Lucie Unit 1
Docket No. 50-335
Post-Accident Sampling System

As a result of conversations with the NRC staff reviewer on June 27, 1983, the attached supplemental information to our letter of December 6, 1982 is being transmitted to you. We trust that this information will aid the NRC staff in completing their review of the St. Lucie Unit 1 Post-Accident Sampling System.

Very truly yours,

Robert E. Uhrig
Vice President
Advanced Systems & Technology

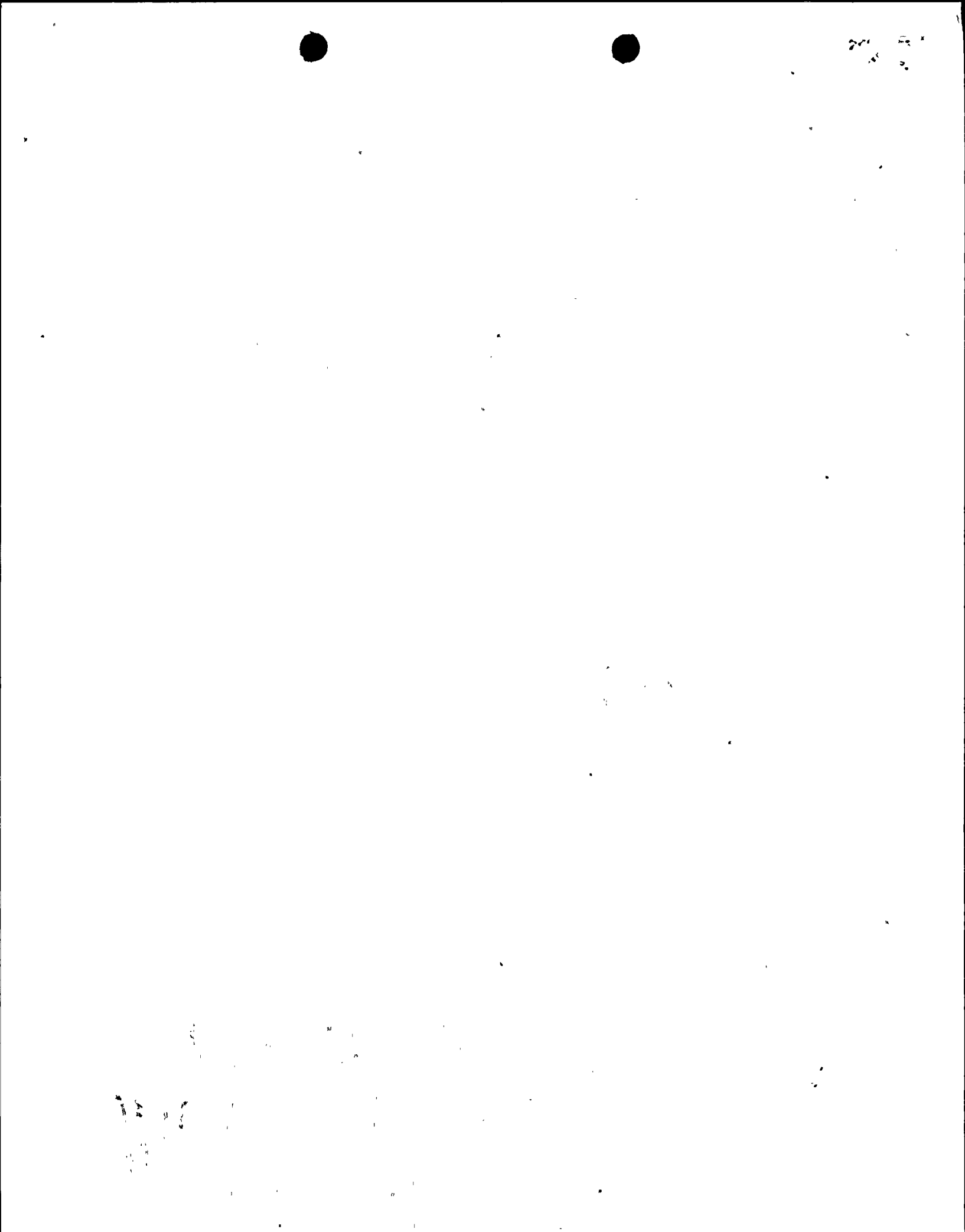
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Attachment

cc: J. P. O'Reilly, Region II
Harold F. Reis, Esquire

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The following information pertains to the St. Lucie Unit 1 Post Accident Sampling System (PASS) and supplements information previously submitted in our letter L-82-525 dated December 6, 1982.

Criterion 2

The procedure which would be used to estimate the degree of core damage in the event of an accident at St. Lucie Unit 1 is the same as the procedure previously provided for Unit 2. This information was submitted with our letter L-83-122, dated March 4, 1983.

Criterion 3

In the PASS, the valves V-55001 through V-55006 and a drain valve V-55009 for liquid and gas separator are inaccessible after an accident. These valves were specified to operate for the specified design conditions but do not have the required qualification paperwork. The valves will be replaced with environmentally qualified valves during the next refueling outage.

Criterion 10

NUREG 0737 requires that licensees have the capability to analyze the following radiochemical/chemical parameters in the Reactor Coolant System (RCS) in the event of an accident.

1. certain radionuclides that may be indicators of the degree of core damage
2. dissolved gasses, either hydrogen or total gas
3. chloride
4. boron

The following information pertains to the accuracy of the analytical methods associated with the above parameters for the Unit 1 PASS.

In-Line Samples

The St. Lucie Unit 1 PASS provides for in-line monitoring for pH, dissolved oxygen and dissolved hydrogen. The in-line instrumentation is calibrated in accordance with St. Lucie Unit No. 1 Chemistry Procedure No. 1-C-112. The following is the acceptance criteria for the PASS in-line instrumentation.

pH	<u>±</u> 0.2 pH units in the range of 4-10
hydrogen	<u>±</u> 10% from known standards
oxygen	<u>±</u> 10% from known standards

Although monitoring RCS for pH and dissolved oxygen following an accident is desirable, and therefore provided in the St. Lucie Unit 1 PASS, they are not required parameters. Consequently, no special matrix testing has been performed for pH or oxygen. In addition, no special matrix testing has been performed on the in-line hydrogen monitor because this vapor phase sample is independent of the chemical matrix, and because hydrogen determinations may be performed by grab sampling (as indicated below) in the event of failure of the in-line instrument.

Grab Samples

The Unit No. 1 PASS provides the capability to collect undiluted and diluted grab samples which can be transported to a laboratory for further analyses (i.e. boron, chloride, activity, dissolved hydrogen, ect.)

To determine both the capability and accuracy of the analytical methods used the following testing was performed.

Using the standard St. Lucie procedure for the determination of boron, the dilution capability of the PASS was tested. A diluted (1:10) PASS system liquid sample was collected, analyzed and compared to the results obtained from the routine RCS sample. The PASS sample produced results within approximately 2.3% of the result obtained for the normal sample.

In another test, the accuracy of the boron and chloride methods was evaluated.

Using the recommended chemical matrix (exclusive of radiation field) tests were performed to demonstrate that cation interferences could be eliminated. After demonstrating that cation interferences could be eliminated, further testing was conducted using varying concentrations of the anions. The results of these tests indicated that both the chloride and boron could be determined with the recommended ranges ($\pm 10\%$ for chloride; $\pm 5\%$ for boron) of accuracy.

Additional information and documentation concerning the above tests is available for inspection at the St. Lucie Plant.

Grab samples are also collected for activity and if necessary pressurized or unpressurized samples can be taken for dissolved hydrogen. Since samples for activity and dissolved hydrogen are independent of the post accident environment, no special matrix testing has been performed.

The (undiluted or diluted) sample for radioisotopic concentrations will be analyzed using a detector (Ge-Li) which is routinely determined to be accurate to $\pm 5\%$ within one standard deviation of a known source term.

The (undiluted or diluted) sample for dissolved hydrogen, if necessary, would be determined using a standard laboratory gas partitioner. The gas partitioner would be standardized to a known hydrogen concentration prior to the analysis. Reproducibility of the gas partitioner is established to be within $\pm 0.3\%$.

Operator Training

All members of the St. Lucie Plant Chemistry Department are initially trained in the use and operation of the St. Lucie Unit No. 1 Post Accident Sampling System (PASS). To address the concern of operator proficiency however, the St. Lucie Plant Chemistry Department staff includes three to four designated "experts" in the operation of the PASS. Their proficiency in PASS operation is assured by the following:

1. Performance of PASS operability checks each 6 months in accordance with plant procedures.
2. Performance of analytical equipment calibrations in accordance with St. Lucie Unit 1 Chemistry Procedures.
3. Operation of the PASS system during emergency exercises.

It is also the responsibility of these personnel to maintain cognizance over any and all correspondence pertaining to the St. Lucie Post Accident Sampling System, including system modifications or maintenance.

Criterion 11

The PASS atmosphere sample line is not heat traced. The original designer did not consider heat tracing to be essential in meeting the original NUREG requirements. Based on the current design and the NUREG's implicit requirements, we intend to install heat tracing on the atmosphere sample line. It is currently scheduled to install the heat tracing by June 30, 1984.



10-1-72