

13 03/30/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)  
DISTRIBUTION FOR INCOMING MATERIAL

50-335

REC: DAVIS D K  
NRC

ORG: UHRIG R E  
FL PWR & LIGHT

DOCDATE: 03/22/78  
DATE RCVD: 03/29/78

DOCTYPE: LETTER NOTARIZED: NO

COPIES RECEIVED

SUBJECT:

LTR 3 ENCL 0

ADVISING NRC REQUEST OF 09/14/77 FOR ADDL INFO ON STEAM GENERATOR AND REACTOR  
COOLANT PUMP SUPPORT MATERIALS FOR UNIT 1, WILL BE FORWARDED TO NRC BY  
04/28/78.

PLANT NAME: ST LUCIE #1

REVIEWER INITIAL: XJM  
DISTRIBUTOR INITIAL: *ME*

\*\*\*\*\* DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS \*\*\*\*\*

FRACTURE TOUGHNESS & POTENTIAL FOR LAMELLAR TEARING.  
(DISTRIBUTION CODE A018)

FOR ACTION: BR CHIEF ~~REID~~ \*\*LTR ONLY(5)

INTERNAL: REG FILE \*\*LTR ONLY(1)  
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SHAO \*\*LTR ONLY(1)  
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R SNAIDER \*\*LTR ONLY(1)  
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TIC \*\*LTR ONLY(1)  
NSIC \*\*LTR ONLY(1)  
ACRS CAT B \*\*LTR ONLY(16)

DISTRIBUTION: LTR 40 ENCL 0  
SIZE: 1P

CONTROL NBR: 780890010

\*\*\*\*\* THE END

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11-11-11

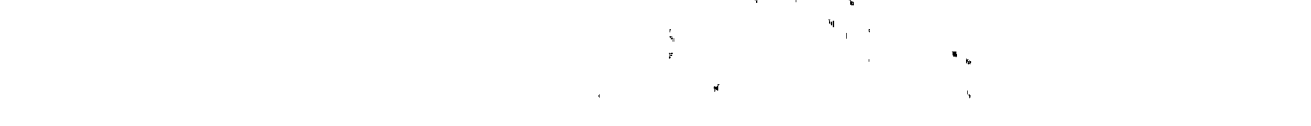
1. The first part of the report is a general description of the project. It includes the title, the objectives, and the scope of the work. The title is "A Study of the Effect of Temperature on the Rate of Reaction of Hydrogen Peroxide with Potassium Iodide". The objectives are to determine the effect of temperature on the rate of reaction and to determine the activation energy of the reaction. The scope of the work is to study the reaction at temperatures ranging from 10°C to 40°C.

2. The second part of the report is a description of the experimental procedure. It includes the materials and equipment used, the method of preparation of the reaction mixture, and the method of measurement of the rate of reaction. The materials and equipment used are potassium iodide, hydrogen peroxide, sulfuric acid, and a water bath. The method of preparation of the reaction mixture is to mix a known volume of potassium iodide solution with a known volume of hydrogen peroxide solution in the presence of a known volume of sulfuric acid. The method of measurement of the rate of reaction is to measure the volume of gas evolved over a known period of time.

3. The third part of the report is a description of the results of the experiment. It includes a table of the data obtained, a graph of the rate of reaction versus temperature, and a calculation of the activation energy. The data obtained are as follows:

Temperature (°C)	Rate of Reaction (ml/min)
10	0.12
20	0.25
30	0.50
40	1.00

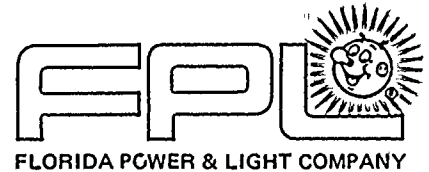
The graph of the rate of reaction versus temperature is as follows:



The activation energy of the reaction is calculated to be 50 kJ/mol. This is done by plotting the logarithm of the rate of reaction against the reciprocal of the absolute temperature. The slope of the line is -5000 K, which corresponds to an activation energy of 50 kJ/mol.

4. The fourth part of the report is a discussion of the results. It includes a comparison of the results with those of other workers, a discussion of the factors that affect the rate of reaction, and a conclusion. The results are compared with those of other workers and found to be in good agreement. The factors that affect the rate of reaction are discussed and it is concluded that the rate of reaction increases with increasing temperature.

5. The fifth part of the report is a conclusion. It states that the rate of reaction increases with increasing temperature and that the activation energy of the reaction is 50 kJ/mol. It also states that the results are in good agreement with those of other workers.



March 22, 1978  
L-78-100



Office of Nuclear Reactor Regulation  
Attention: Mr. Don K. Davis, Acting Chief  
Operating Reactors Branch No. 2  
Division of Operating Reactors  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

REGULATORY DOCKET FILE COPY

Dear Mr. Davis:

Re: Request for Information on Steam  
Generator and Reactor Coolant Pump  
Support Materials, St. Lucie Unit No. 1,  
Docket No. 50-335

In response to requests from your staff, Florida Power & Light Company is preparing information to supplement that forwarded to you by my letter of November 18, 1977 (L-77-349). The information originally requested by your letter of September 14, 1977, is quite extensive in scope and is presently being assembled by our architect - engineer and NSSS supplier at a considerable effort. We plan to forward this information to you by April 28, 1978.

Yours very truly,

A handwritten signature in cursive script, appearing to read 'Robert E. Uhrig'.

Robert E. Uhrig  
Vice President

REU/LLL/s1

cc: Harold F. Reis, Esquire  
James P. O'Reilly, Region II  
Peter B. Erickson

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