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 AUTH. NAME: AUTHOR AFFILIATION
 DISE, D.P. Niagara Mohawk Power Corp. *ma/1*
 RECIP. NAME: RECIPIENT AFFILIATION
 CARLSON, R.T. Region 1, Philadelphia, Reactor Construction & Engineering

SUBJECT: Interim deficiency rept, originally submitted 800902, re
 spent fuel pool cooling water heat exchangers. Addl info,
 furnished by vendor, being evaluated. Affected heat exchangers
 rejected. Final rept will be submitted by 810430.

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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 50°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 thermometer. 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	0.1
20	0.2
30	0.4
40	0.8
50	1.6

The graph of the rate of reaction versus temperature is a straight line with a positive slope. The activation energy of the reaction is calculated to be 50 kJ/mol.

December 1, 1980

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Office of Inspection and Enforcement
Region I
Attention: Mr. R. T. Carlson, Chief
Reactor Construction and Engineering
Support Branch
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Dear Mr. Carlson:

Re: Nine Mile Point Unit 2
Docket No. 50-410

In accordance with Paragraph 50.55 (e) (3) of the Commission's regulations, attached is an interim report regarding the potential deficiency involving the spent fuel pool heat exchangers at Nine Mile Point Unit 2. A final report will be provided by April 30, 1981.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

Donald P. Dise

Donald P. Dise
Vice President Engineering

PEF:ja
Attachment
~~cc: Director of Inspection and Enforcement~~
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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INTERIM REPORT

SPENT FUEL POOL COOLING WATER HEAT EXCHANGERS POTENTIALLY REPORTABLE DEFICIENCY 10CFR50.55(e)

NINE MILE POINT UNIT 2

Docket No. 50-410

Description of Deficiency

As reported to Mr. R. Feil of the Nuclear Regulatory Commission Region I staff on September 2, 1980, a potentially reportable deficiency involving the spent fuel pool cooling water heat exchangers was discovered during a review of documentation. This was the subject of our letter to Mr. R. Carlson of the NRC on October 2, 1980.

The impact test data for several heat exchanger shell materials do not contain sufficient information to determine whether or not the specification and ASME Code impact test acceptance criteria are met.

Description of Findings and Corrective Action

The heat exchanger Vendor has furnished additional information necessary to evaluate the problem. The information is being evaluated and its safety implications analyzed. Initial corrective action to date has been to temporarily reject the affected heat exchangers for use. Final corrective action to resolve the problem will be made after reviewing the analysis of the information recently furnished by the heat exchanger Vendor. Additionally, possible corrective actions to prevent future problems of this nature are being evaluated and will be addressed in the final report.

