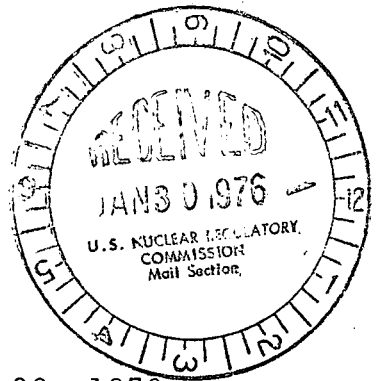


Carl L. Newman
Vice President

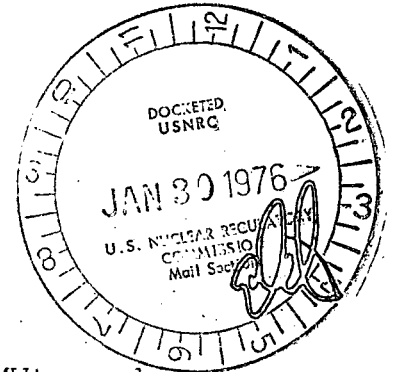
Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N. Y. 10003
Telephone (212) 460-5133



January 29, 1976

Re Indian Point Unit No. 3
Docket No. 50-286

Mr. D.B. Vassallo, Chief
Light Water Reactor Branch No. 5
Division of Project Management
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555



Dear Mr. Vassallo

The small break analyses carried out at 3025 MWt, and included in Appendix 14C to the Indian Point Unit No. 3 FSAR identified the six-inch break as the most limiting case (highest peak clad temperature and maximum metal water reaction) for the small break spectrum. These previous analyses had referenced Section 1.1 of WCAP-8399 as being applicable to Indian Point Unit No. 3.

In order to verify that the six-inch break size was indeed the most limiting case, an additional eight-inch break size has been analyzed as requested by your January 21, 1976 letter. The results of this analysis (see Table 2 attached) demonstrate that the peak clad temperature and metal water reaction are greater for the six-inch case than for the eight-inch break, as well as the previously reported three and four-inch breaks (WCAP-8399). The analysis performed to evaluate the ECCS performance for the 8 inch small break utilized the same version of the W ECCS evaluation models that existed as the configuration control versions at the time the previous small break size accidents were analyzed, August 1, 1974.

The time sequence of events for the three, four, six and eight-inch breaks are shown in the attached Table 1, and RCS depressurization transient, core mixture height, and clad temperature transient for the additional eight-inch break case are shown in attached Figures 1, 2 and 3 respectively.

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Mr. D.B. Vassallo

- 2 -

January 29, 1976

Re Indian Point Unit No. 3
Docket No. 50-286

The results, summarized in Table 1, show that the high head portion of the Emergency Core Cooling System, together with accumulators, provide sufficient core flooding to keep the calculated peak clad temperature below required limits of 10CFR50.46 and that cladding interaction limitations are met. The core geometry remains amenable to cooling, core temperature is reduced and decay heat is removed for an extended period of time, as required by the longed-lived radioactivity remaining in the core.

Very truly yours



Carl L. Newman
Vice President

mrh

Sworn to before me this
29 day of January, 1976.


Notary Public

DAVID WATSON
Notary Public State of New York
No. 03-4604876
Qualified in Bronx County
Commission Expires March 30, 1977

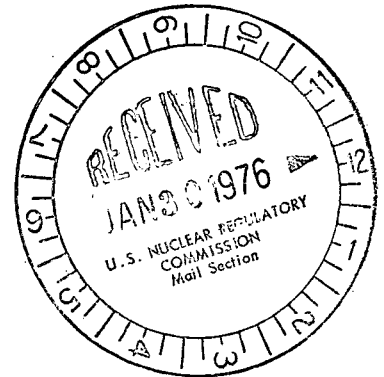


TABLE 1

SMALL BREAK TIME SEQUENCE OF EVENTS

Case Analyzed	<u>3 Inch</u> (sec)	<u>4 Inch</u> (sec)	<u>6 Inch</u> (sec)	<u>8-Inch</u> (sec)
Start	0.0	0.0	0.0	0.0
Reactor Trip Signal	34.5	19.4	11.5	10.05
Top of Core Uncovered	672	344	146	78.5
Accumulator Injection Begins	2300	777	335	174
PCT Occurs	840	608	382	202.4
Top of Core Covered	1300	1037	538	212.3

TABLE 2

SMALL BREAK RESULTS

Results	<u>3 Inch</u>	<u>4 Inch</u>	<u>6 Inch</u>	<u>8 Inch</u>
Peak Clad Temp. (°F)	1584	1598	1792	1638
Peak Clad Location (Ft.)	11	11	11	10.5
Local Zr/H ₂ O Rxn (max) (%)	0.98	1.5	2.5	1.21
Local Zr/H ₂ O Location (Ft.)	10.5	10.5	10.5	11.0
Total Zr/H ₂ O Rxn (%)	<0.3	<0.3	<0.3	<0.3
Hot Rod Burst Time (sec)	814.5	458.5	221	170
Hot Rod Burst Location (Ft.)	10.5	10.5	10.5	11.0

Calculation

NSSS Power MWt 102% of	3220
Peak Linear Power kw/ft 102% of	14.5
Peaking Factor (At License Rating)	2.32

Fuel region + cycle analyzed	Cycle	Region
Indian Point Unit 3	1	1 (Limiting Region)

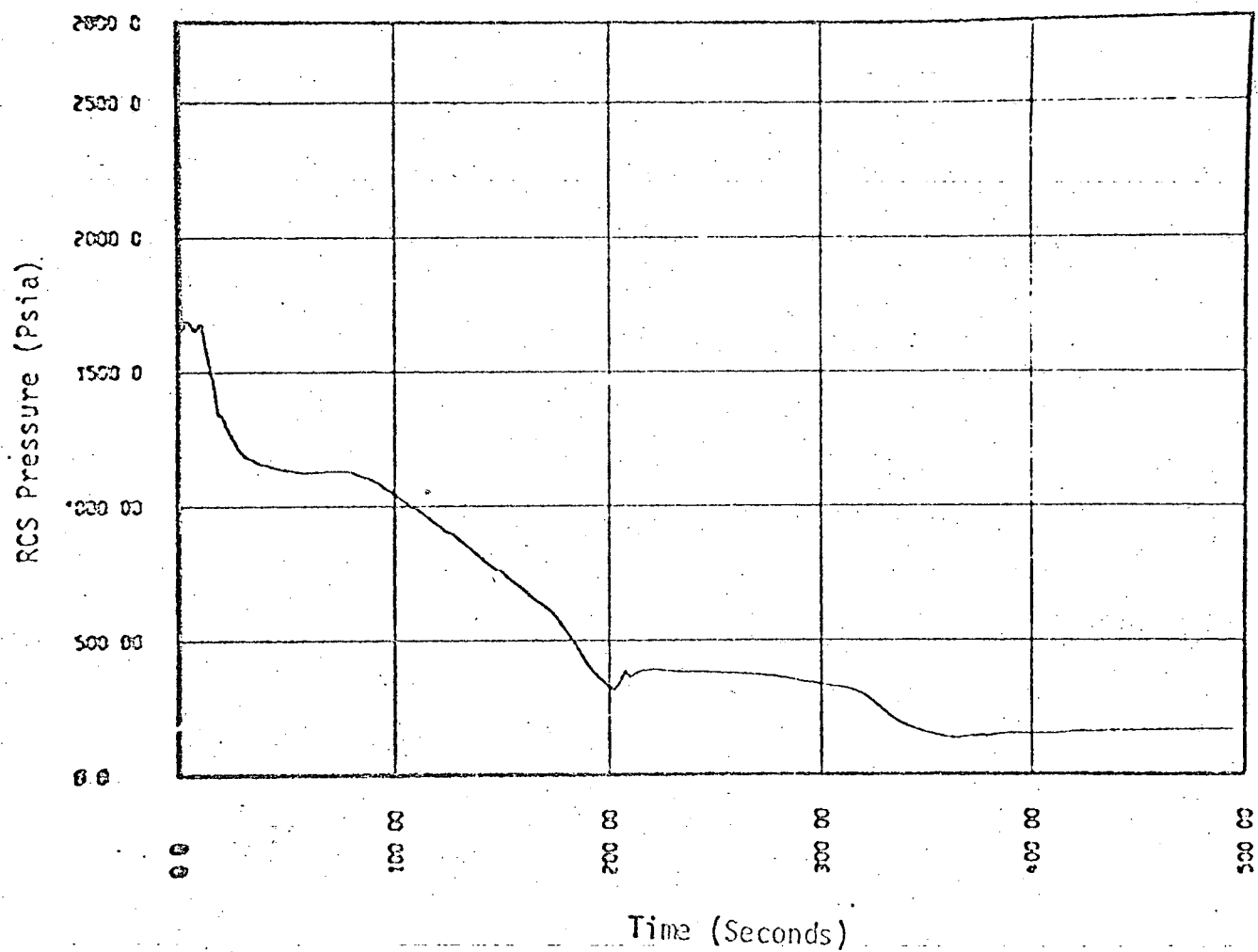


Figure 1 RCS Depressurization Transient (8 inch)

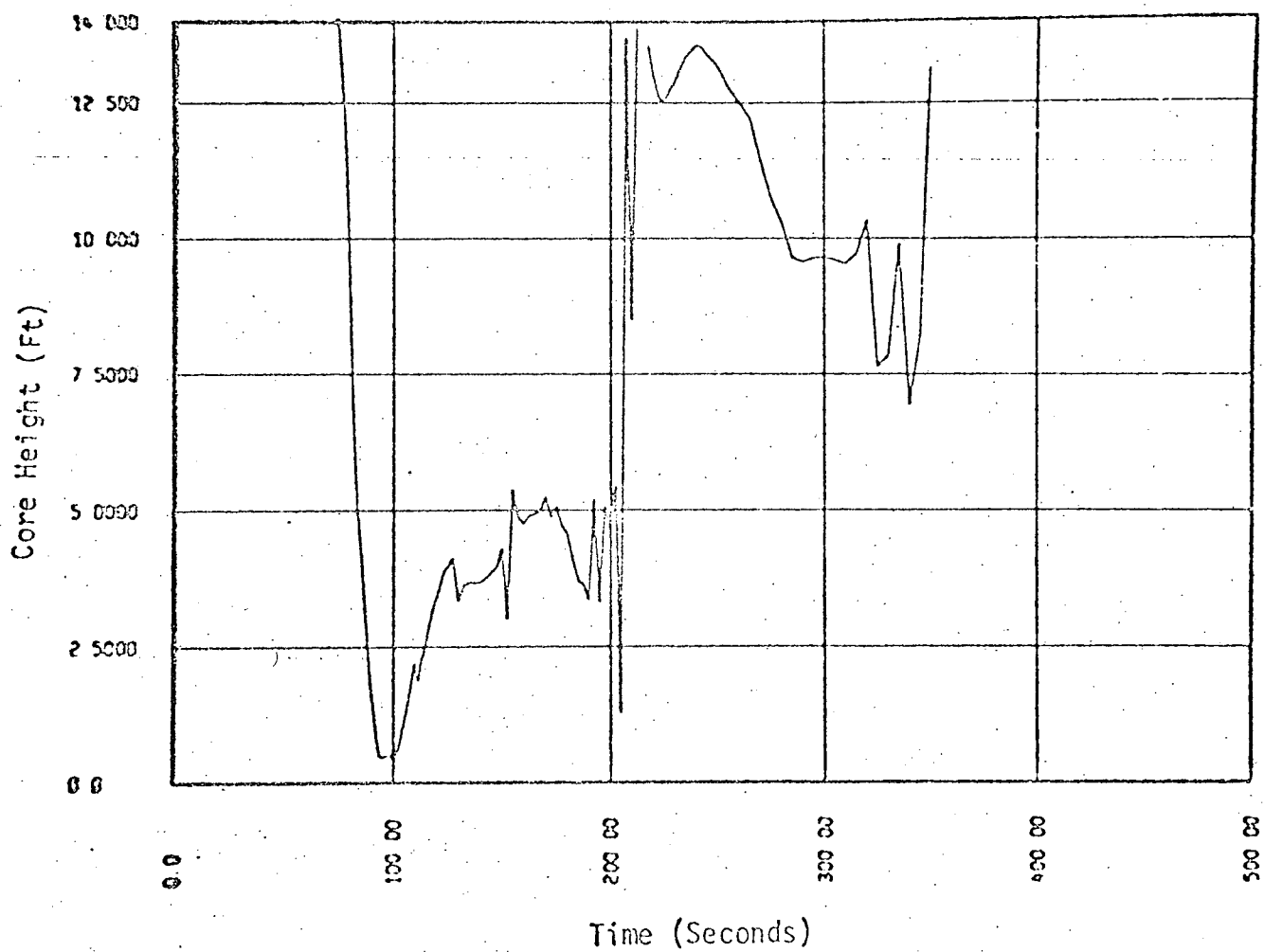


Figure 2 Core Mixture Height (8 inch)

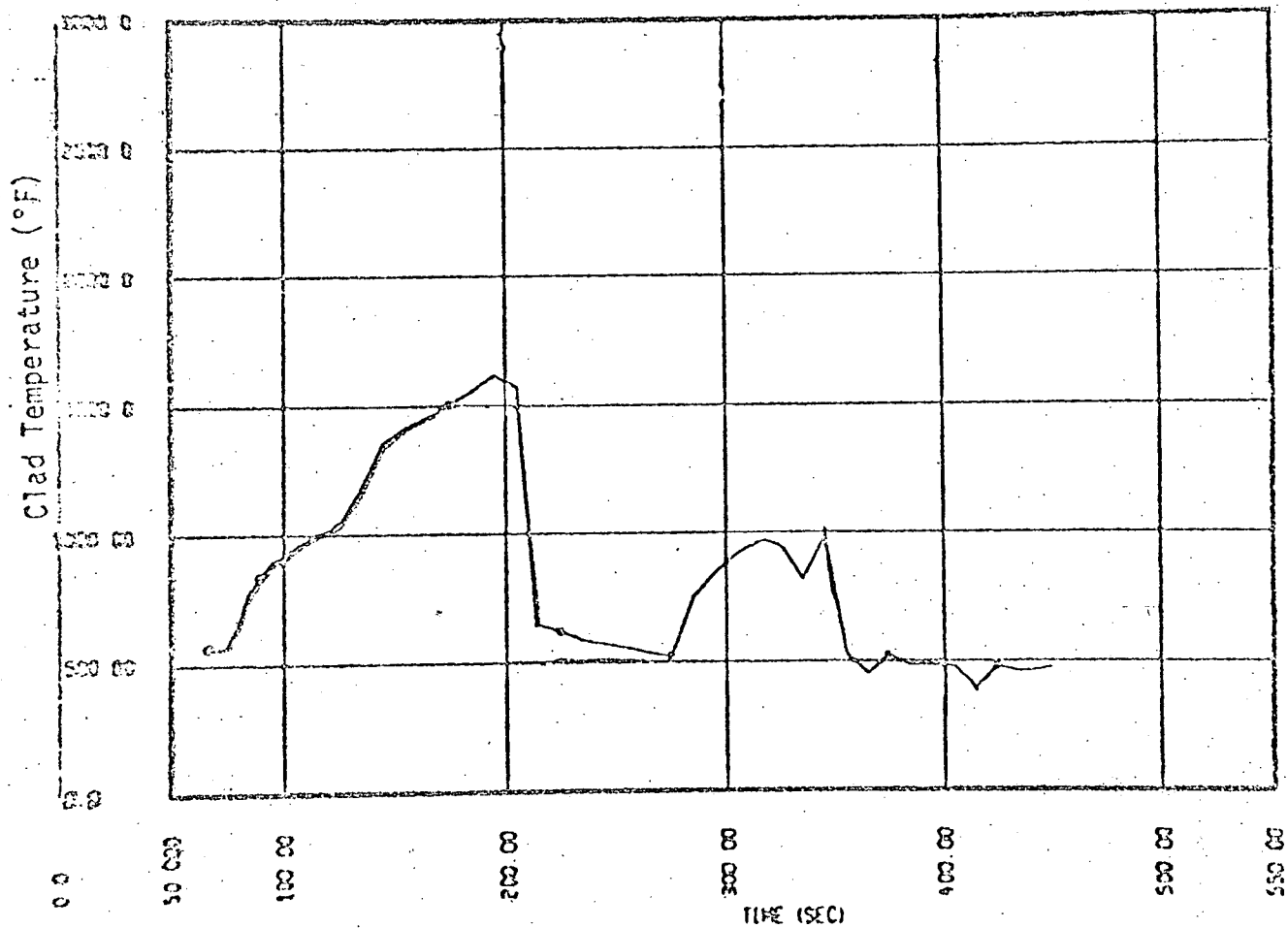


Figure 3 Clad Temperature Transient (8 inch)