

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:7903140210 DOC.DATE: 79/03/07 NOTARIZED: NO DOCKET #  
 FACIL:50-220 NINE MILE POINT NUCLEAR STATIONS, NIAGARA MOHAWK POWE 05000220  
 AUTH.NAME AUTHOR AFFILIATION  
 DISE,D.P. NIAGARA MOHAWK POWER CORP.  
 RECIP.NAME RECIPIENT AFFILIATION  
 IPPOLITO,T. OPERATING REACTORS BRANCH 3

SUBJECT: FORWARDS ENVIRON QUALIFICATION CRITERIA FOR ELECTRICAL  
 PENETRATION CONNECTOR TEST.DESCRPTION & RESULTS PROVIDED  
 BY UTIL IN 780614 LTR.

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THE UNIVERSITY OF CHICAGO  
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ADP 100

March 7, 1979

Director of Nuclear Reactor Regulation  
Attn: Mr. Thomas Ippolito, Chief  
Operating Reactors/Branch #3  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Ippolito:

Re: Nine Mile Point Unit 1  
Docket No. 50-220  
DPR-63

In response to a request by Mr. Polk of your staff, find attached environmental qualification criteria for the electrical penetration connector test for Nine Mile Point Unit 1. The test description and results were previously provided by our June 14, 1978 letter.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

Donald P. Dise  
Vice President-Engineering

NLR/szd

Attachment

7903140210

*Accol  
11/5/79*

SECRET

ELECTRICAL PENETRATION CONNECTOR  
ENVIRONMENTAL QUALIFICATION CRITERIA

Qualification testing of Unit 1 electrical penetration connectors was conducted utilizing IEEE-323, 1974 for guidance. A review of the physical conditions, environment and design criteria was conducted prior to the test.

The test connectors were installed to simulate actual field installation. Environmental test criteria was developed by adding specific margins to criteria detailed in the Final Safety Analysis Report.

The Final Safety Analysis Report criteria is as follows:

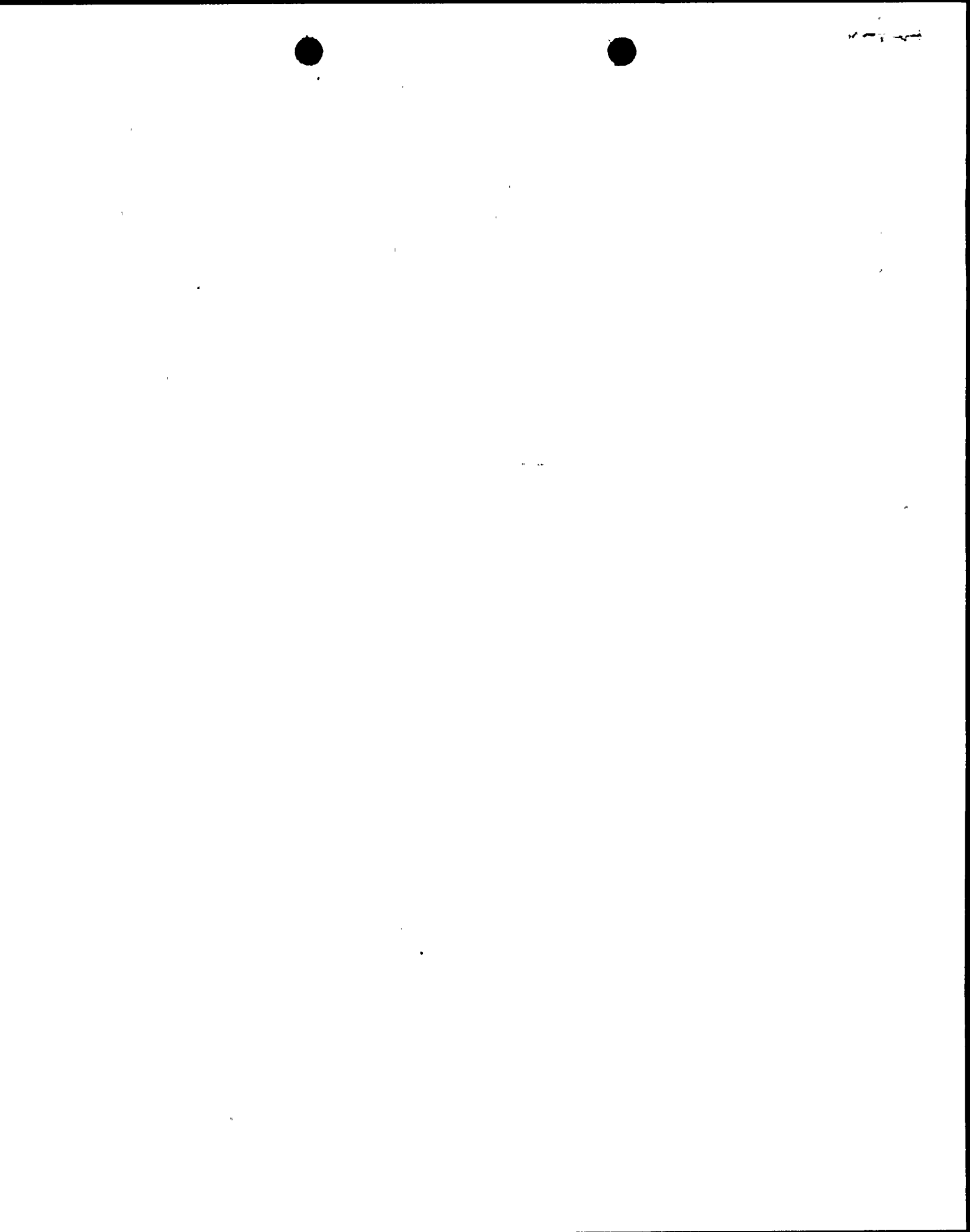
- 1) Figures E-31 and E-33, Appendix E, Volume 2 of the Final Safety Analysis Report show the containment design basis pressure and temperature profiles respectively.
- 2) The system operating design voltage is 600 volts.
- 3) Information on Page E-131, Appendix E, Volume 2 of the Final Safety Analysis Report details radiation inventories. The Regulatory Guide 1.3 methodology (semi-infinite cloud equations, Page 1.3-2) was used, assuming the core spray system was operable. Beta and gamma calculated radiation dose for 40 year exposure plus that resulting from a postulated Loss of Coolant Accident was 1.15 megarads.

The following margins were added to the above Final Safety Analysis information:

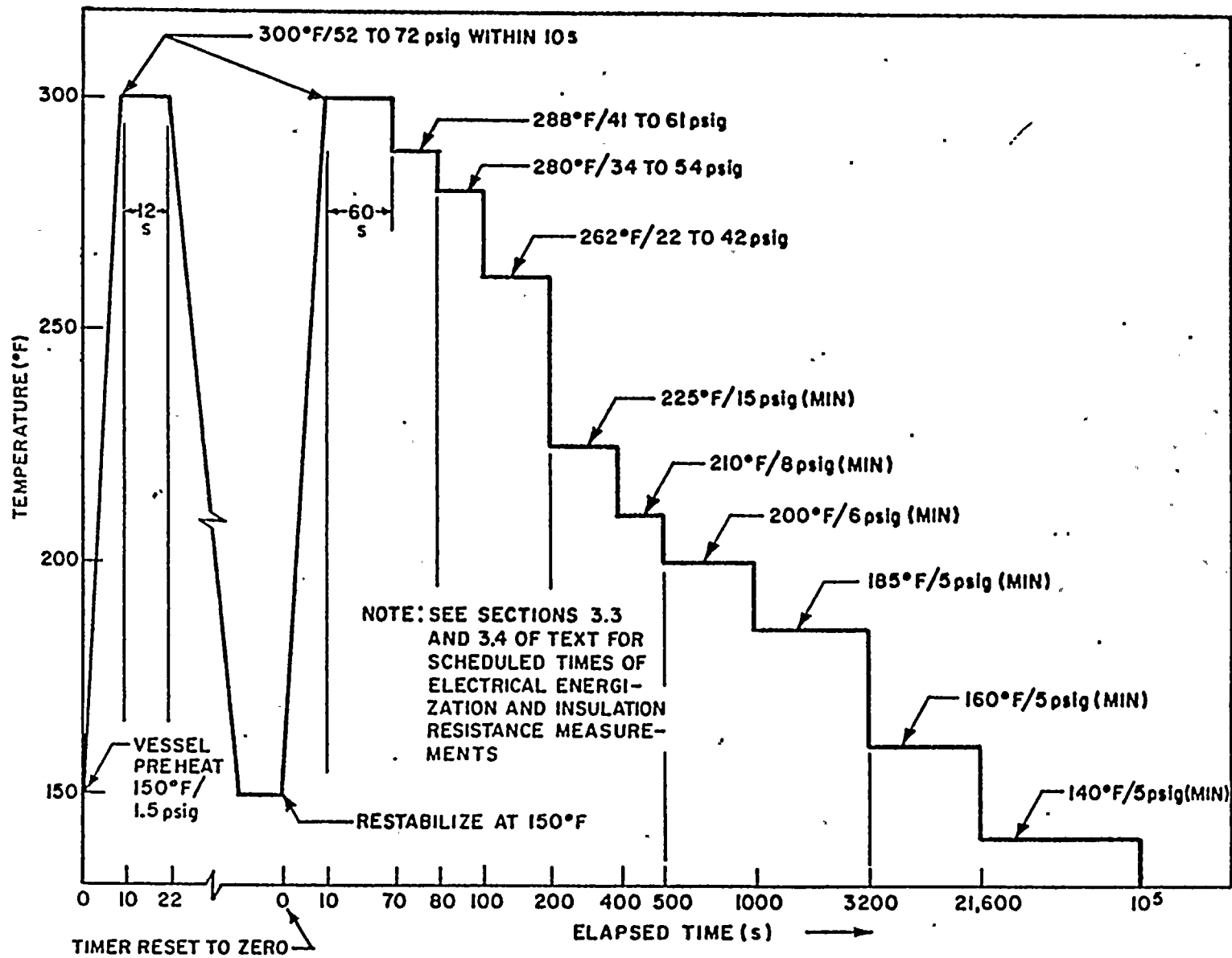
- 1) Fifteen degrees was added to the temperature profile of the Final Safety Analysis Report.
- 2) The corresponding pressure for the above saturation temperature was specified. Generally, this resulted in a minimum of 2 psig margin.
- 3) Beta and gamma calculated radiation dose for 40 year exposure plus that resulting from a postulated Loss of Coolant Accident was 1.15 megarads. The test specimens were exposed to 26 megarads.
- 4) Voltage levels were increased by 10%.
- 5) Frequency was limited to within  $\pm 5\%$ .



- 6) The time for the temperature/pressure profile was increased by 10%.
- 7) Two peak profiles were tested.
- 8) Humidity was controlled to the extent practical to maintain a high humidity condition close to 100%.
- 9) The power and control connectors were energized during the test to simulate operation. The attached figure represents the time/pressure/temperature profile used for the test.







Specified Temperature and Pressure Profile

