LTR-NRC-09-33 NP-Enclosure

"NRC Containment Audit STP 3&4"

July 2009

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NRC Containment Audit STP 3&4

July 7-8, 2009

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ABWR Primary Containment Analysis Summary

NRC Audit

July 7-8, 2009

Jason Douglass

Containment & Radiological Analysis

(CRA)

Introduction

- Purpose: Create ABWR short term and long term containment models using GOTHIC.
- Modeling Approach: Use NEDO-20533, as modified by the DCD, as the basis for GOTHIC modeling methodology.
- Benchmark Modeling:
  - Compares short term GOTHIC and DCD results.
  - GOTHIC results compare well to DCD results.
- Analysis Modeling:
  - Foundation is Benchmark Model
  - Corrects Identified Errors

GOTHIC Noding Diagram

a,c

Assumptions

a,c

Assumptions

a,c

Assumptions

a,c

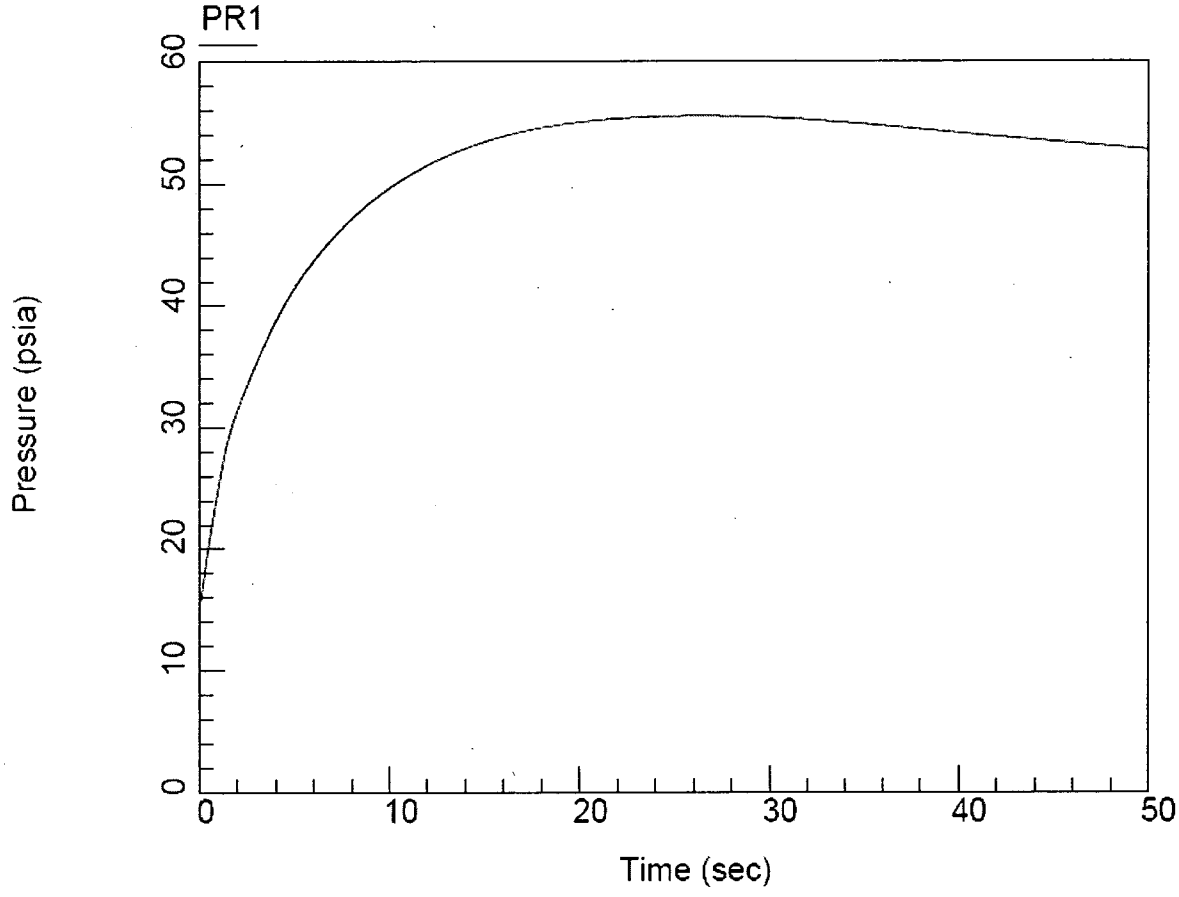
Assumptions

a,c

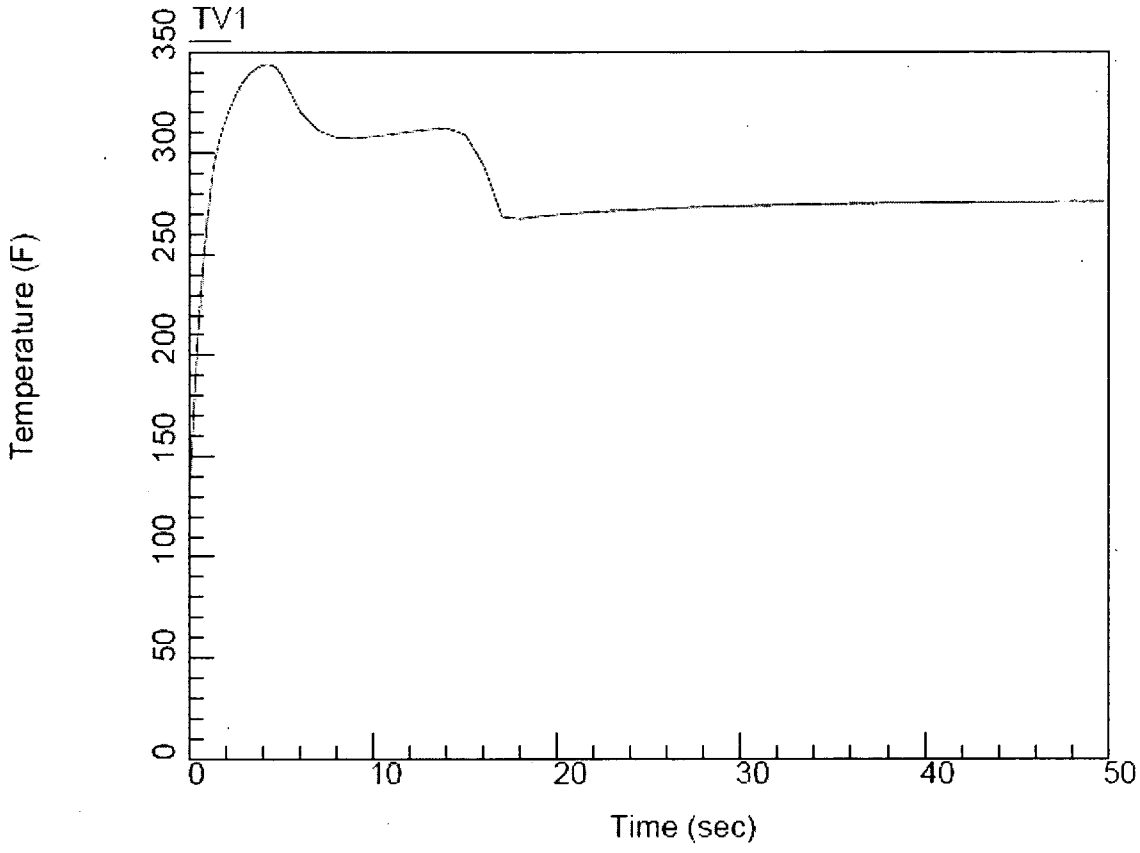
Additional Assumptions

a,c

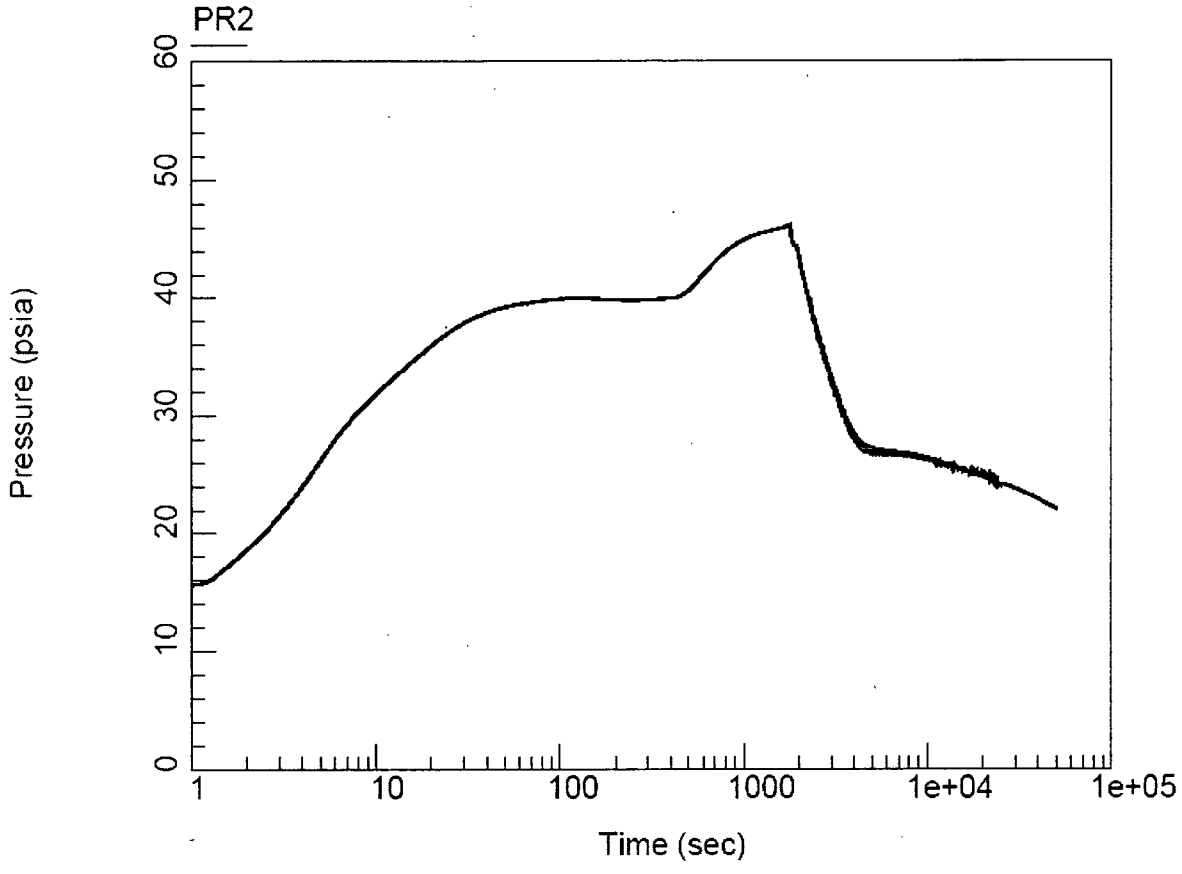
Peak Drywell Pressure



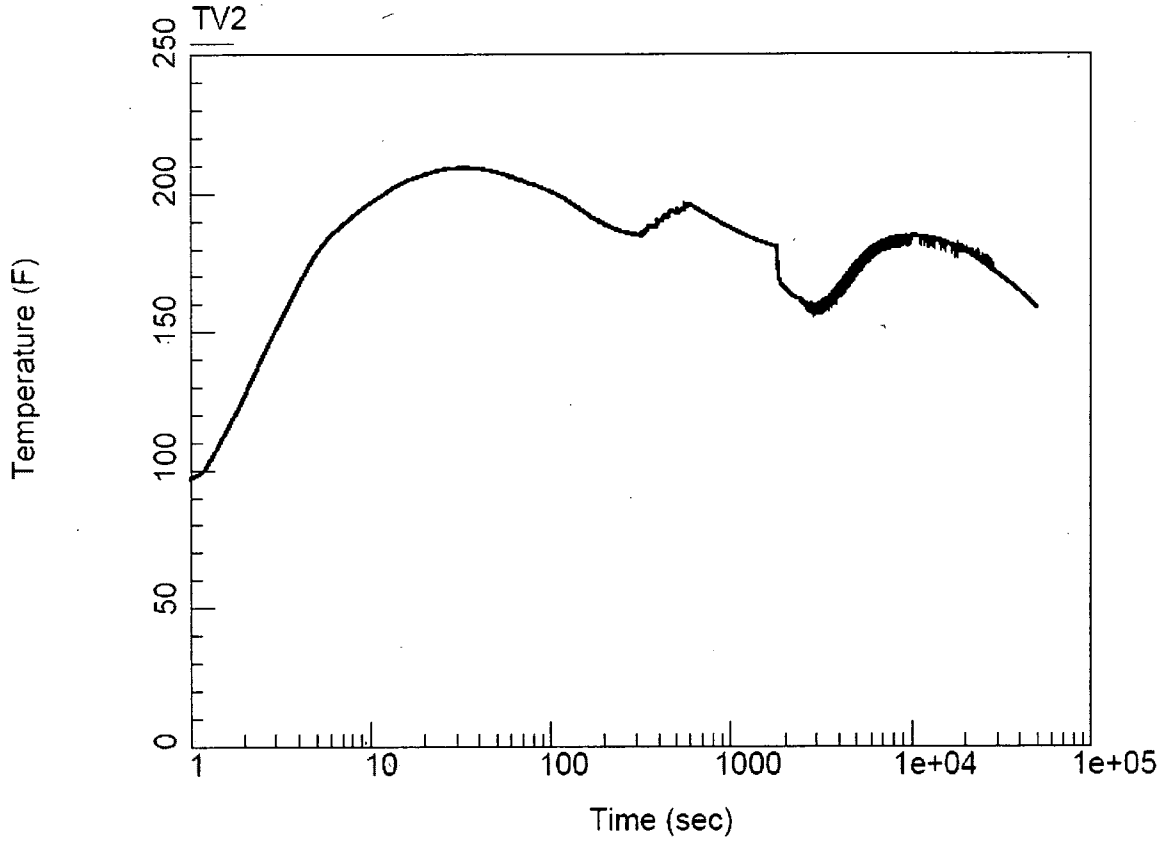
Peak Drywell Temperature



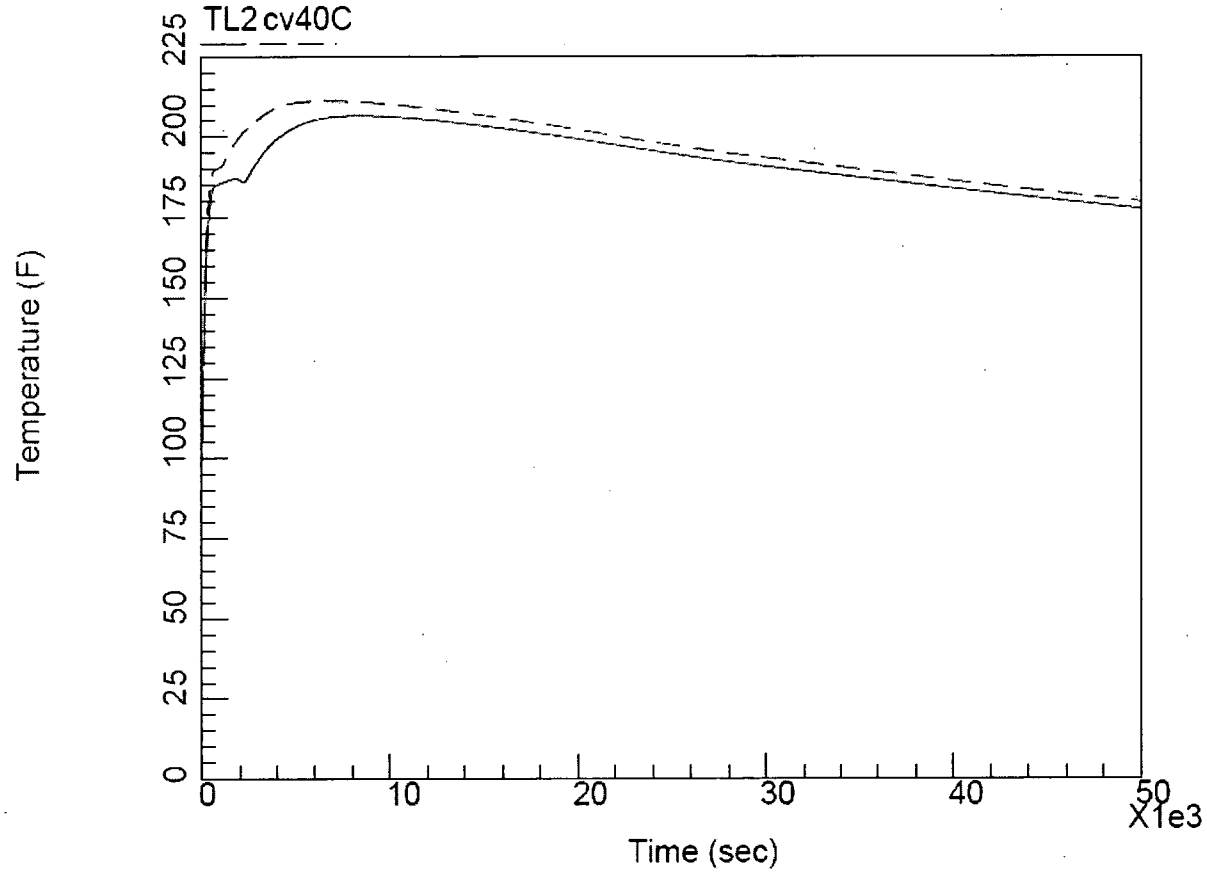
Peak Wetwell Pressure



Peak Wetwell Vapor Temperature



Peak Suppression Pool Water Temperature



Conclusions

- GOTHIC model was created to be similar to GE methodology
- NEDO-20533 is the basis for the model
- DCD changes to NEDO-20533 were taken to be superseding changes (NEDO-20533 is not for ABWR)
- GOTHIC benchmark model results similar to GE (slightly higher for peak drywell pressure and peak suppression pool temperature)

Questions