

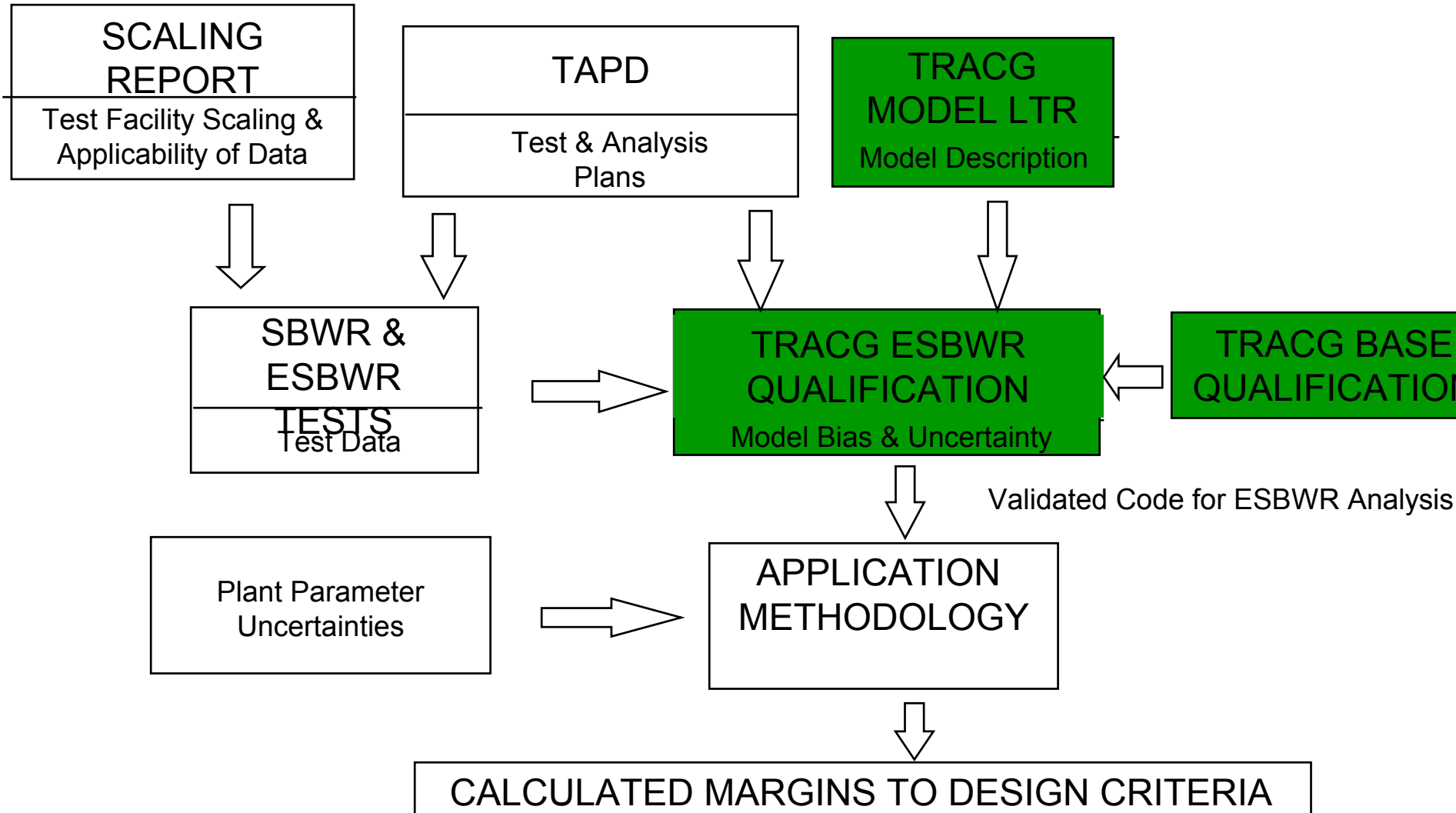
TRACG Qualification Overview

***ESBWR NRC Meeting
Closed Session
June 25, 2003***

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ESBWR Technology Program Elements



Background Areas for Discussion

- ***TRACG Qualification***
 - ***Segments and report locations***
- ***Application of TRACG models for containment analysis***
- ***Operation of the PCC***

TRACG Qualification for ESBWR

- **Comprised of three parts**
 - **Qualification studies relevant to all BWRs (NEDE-32177P)**
 - Previously reviewed by NRC**
 - Key results summarized in SBWR Qualification Report**
 - **SBWR-specific qualification relevant to passive BWRs (NEDC-32725P, Vol. 1 and 2)**
 - Base qualification for passive BWRs**
 - **ESBWR qualification (NEDC-33080P)**
 - Confirmation for ESBWR configuration**
 - Supplementary data obtained following SBWR program**

Overview of TRACG Qualification

- ***TRACG has been systematically assessed against:***
 - ***Separate effects tests***
 - ***Component performance tests***
 - ***Integral system effects tests***
 - ***BWR plant data***
- ***“Generic BWR” qualification studies documented in base TRACG Qualification LTR NEDE-32177P Rev 2***
- ***Supplemented by “TRACG Qualification for SBWR”, NEDC-32725P Vol. 1 and 2***
 - ***Adds remaining qualification studies identified in TAPD for passive BWR***
- ***Further supplemented by ESBWR-specific TRACG Qualification***
 - ***Confirmatory results for ESBWR configuration (PANDA P-Series)***
 - ***Relevant tests performed after SBWR report was compiled (CRIEPI high pressure hydrodynamic stability tests)***

Base Qualification Report, NEDE-32177P, Rev.2

- ***Separate Effects Tests***

Base Qualification Report

- ***Component Performance Tests***

- ***Integral System Tests***

Base Qualification Report

- ***Operating Plant Data***

Assessment studies added in SBWR Qualification Report

- ***Integral System Tests***

- ***Natural Circulation and Flow Oscillation Tests***

Completes Qualification Activities identified in SBWR TAPD

Tests added in ESBWR Qualification Report

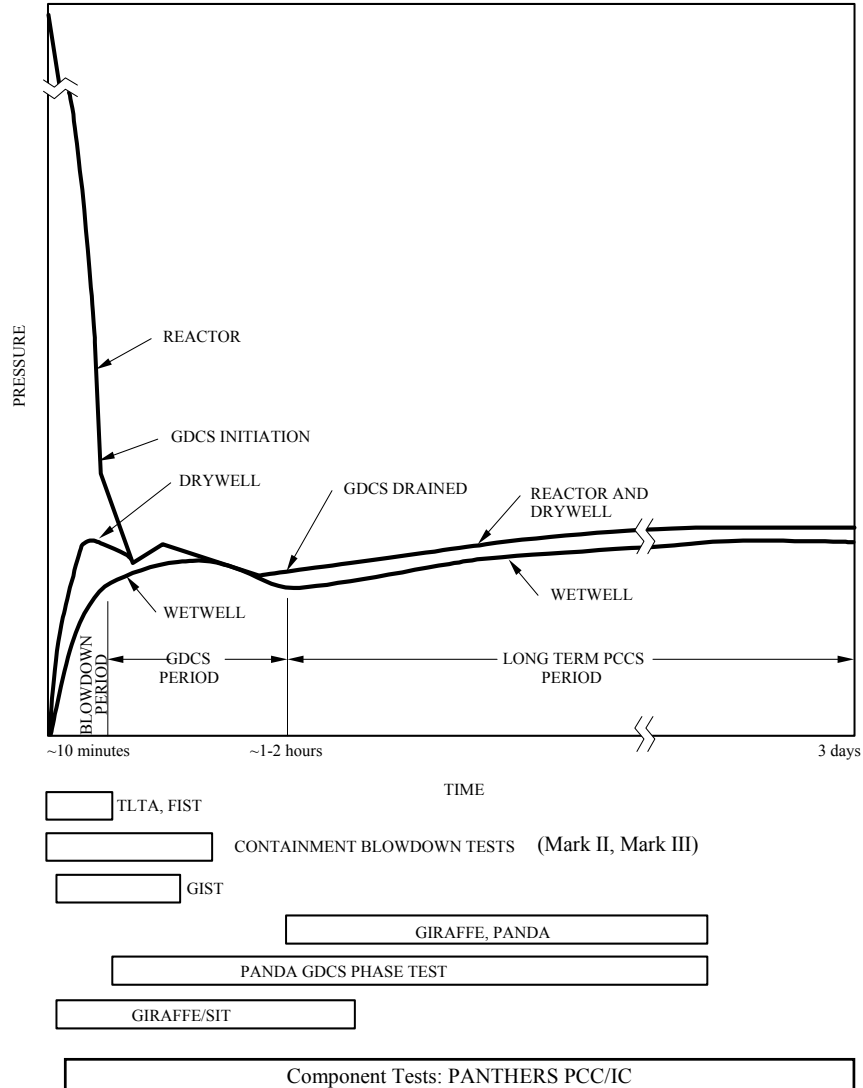
- ***Integral System Tests***

- ***Natural Circulation and Flow Oscillation Tests***

TRACG Application to Containment

TRACG Application to Containment

Test Coverage for ESBWR LOCA



PANTHERS PCC Performance with Noncondensibles

Steady state PCC operating characteristics well predicted

Overall containment pressure response

Transient Pressure Response

Responses to 1996 NRC Comments on TRACG application for containment

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***GE believes comments from 1996 NRC letter addressed through
subsequent qualification studies***

Summary

- ***All qualification activities identified in TAPD have been satisfactorily completed***
 - ***The “generic qualification” studies in NEDE-32177P, Rev. 2 have been reviewed and accepted by NRC for AOOs for operating plants***
 - ***Significant amount of additional qualification has been performed, particularly for long term containment response***
- ***ESBWR response to LOCA is mild and readily bounded***
- ***TRACG models adequate for passive BWR (SBWR/ESBWR) analysis with appropriate application procedures***