

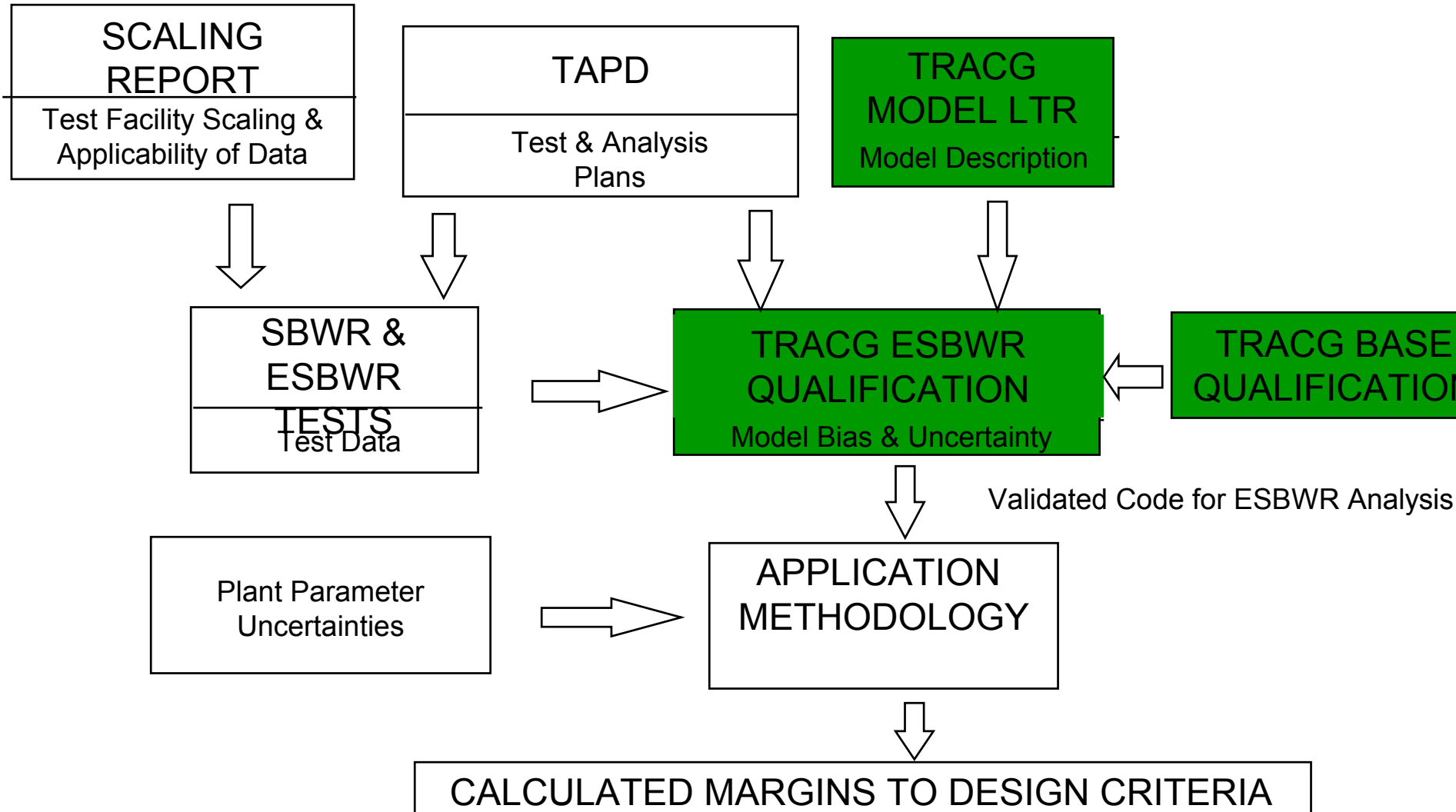
***TRACG Qualification Overview***

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

***Bharat Shiralkar***



# ESBWR Technology Program Elements



# ***Background Areas for Discussion***

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

# ***TRACG Qualification for ESBWR***

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- ***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***

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- ***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***

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- ***Separate Effects Tests***

# ***Base Qualification Report***

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- ***Component Performance Tests***

- ***Integral System Tests***

# ***Base Qualification Report***

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- ***Operating Plant Data***



# ***Assessment studies added in SBWR Qualification Report***

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- ***Separate Effects Tests***
- ***Component Performance Tests***

# ***Assessment studies added in SBWR Qualification Report***

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

**Completes Qualification Activities identified in SBWR TAPD**

# ***Tests added in ESBWR Qualification Report***

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

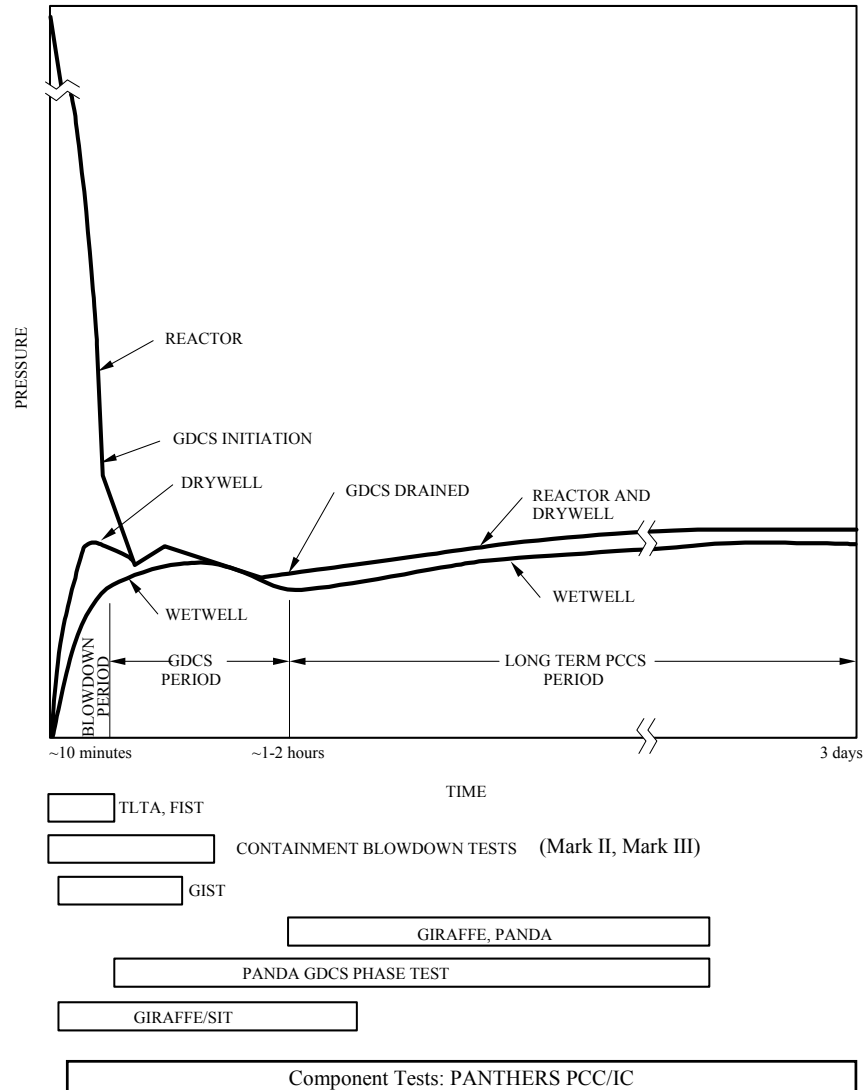
# ***TRACG Application to Containment***

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# Test Coverage for ESBWR LOCA



# ***PANTHERS PCC Performance with Noncondensibles***

Steady state PCC operating characteristics well predicted

# ***Overall containment pressure response***

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# ***Transient Pressure Response***

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# ***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

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- *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*