

Proposal for Full-Scale Tests and Blind Validation Exercises

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Outline

- Background and need for validation
- Proposed 3-year plan
- Solicitation of participation
- Proposed schedule for 1st full-scale test and blind validation exercise

Conclusions of Benchmark Exercise # 1

- Trends predicted by models are reasonable, and provide useful information
- Similar results from most codes, including zone and CFD
- International blind validation exercise, with emphasis on quantifying uncertainties, will add confidence to findings
- Flux incident on and thermal response of target were key issues in exercise

Review of Validation Database

- UK IMC validation database report
- Specific validation of fire models in benchmark exercise
- Improvement in quantification of uncertainty needed
- Thermal response of target may benefit from additional validation

Plan for NRC Fire Model Research Program

Near Term Needs

- Conduct tests for international blind validation exercises to extend confidence in current models

Long Term Needs

- Conduct research to improve fire modeling capability, and validate improved methods

Proposed Test Program

	FY 02	FY 03	FY 04
Test Series	Cable tray fires	Multi compartment fires	Control room fires (tentative)
Objective	Confirm present findings	Examine flow issues	Examine smoke issues

Specific Investigation of Effects of Key Variables

- Fire intensity
- Distance between fire source and cable
- Cable diameter and composition
- Elevation of cable
- Bundling of cables in a tray
- Smoke concentration

Solicitation of Participation

- NRC invites participation in international blind validation exercises with respective fire models
- Mutual benefit gained through exercise of different models
- Invite engagement in experimental program and data analyses

Schedule for 1st Full-Scale Test and Exercise

- Develop detailed test specification – August 30, 2002
- Discuss proposed test specification – October, 02 (6th meeting at BRE)
- Finalize test specification – December, 2002
- Submit fire model predictions for defined problem – March, 2003
- Conduct tests – March 2003