



Severe Accident Phenomenology

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Outline

- Timeline of reactor safety technology
- Developments over past 25 years
- Validation and assessment
- Possible future applications

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Overview of MELCOR

- MELCOR has been developed at Sandia National Laboratories for the U.S. NRC
 - Project began in 1982
 - ↳ Motivated by Wash-1400 and TMI-2
 - Code under continuous development for 21 years
 - ↳ Emerging issues
 - ↳ New experimental information
 - ↳ Repository of knowledge on severe accident phenomena
- Major emphasis is on performing integrated and self-consistent analyses
 - Diverse physics, widely varying timescales
 - Coupled phenomena and non-linear feedback
 - Self-consistent treatment
 - ↳ Eg. Decay heat follows released fission products diminishing core decay heating

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