

RIC 2006
SESSION: T2BC –
Severe Accident Research

ACRS PERSPECTIVE ON
SEVERE ACCIDENT
RESEARCH

Thomas Kress
Member, ACRS

Presented at
Regulatory Information Conference
Washington, DC
March 7, 2006

ACRS MAINTAINS A STRONG CONNECTION WITH NRC RESEARCH

- Inherited the role of the Research Review Committee when it was abolished
- Reviews the entire research effort biannually
- Reviews and provides recommendations on ongoing research projects
- Reviews and “grades” several selected projects annually to aid NRC/RES self assessment

Traditionally, ACRS has been very supportive of the NRC research efforts in the area of severe accidents [SA]

ACRS PERSPECTIVE CAN BE FOUND IN ITS LETTERS AND ITS BIENNIAL REPORT TO THE COMMISSION

IN THE MOST RECENT BIENNIAL REPORT [NUREG-1635, VOL. 6] ACRS NOTED THE FOLLOWING SA CHALLENGES FACING THE AGENCY

- Assessment of in-vessel retention
- Spent fuel pool accident progression
- Evaluation of SA uncertainties for PRA
- Evaluation of energetic fuel-coolant interactions
- Aerosol behavior in steam generator secondaries
- Effects of high burnup on core melt progression and fission product release

RES CURRENTLY HAS APPROPRIATE ACTIVITIES ADDRESSING EACH OF THESE

SOME CONTINUING CHALLENGES

- Sounder empirical basis for energetic FCI
- High burnup core degradation and fission product release
- SA model uncertainty assessment
- Support for certification of new technology reactor designs in area of SA

....AND SOME NEW CHALLENGES/PRIORITIES

- Resolution of GSI-191 [sump screen blockage]
- Development of SA criteria for a Tech. Neutral Regulatory Framework [new DBAs??]
- Fire PRA modeling
- Power uprate acceptance criteria [including NPSH credit]
- Developing societal risk acceptance criteria

FINAL WORDS

“THE ACRS IS VERY SUPPORTIVE OF THE STRATEGY THE NRC HAS DEVELOPED TO MAINTAIN THE TECHNOLOGY FOR SEVERE ACCIDENT ANALYSIS AND TO UPDATE THIS TECHNOLOGY WITH RESEARCH RESULTS FROM COOPERATIVE INTERNATIONAL PROGRAMS”

“COLLABORTIVE SEVERE REACTOR ACCIDENT PROGRAMS ... ARE MAKING GOOD TECHNICAL PROGRESS AND THERE HAVE BEEN NOTABLE ACCOMPLISHMENTS IN THE LAST TWO YEARS”

- PHEBUS-FP
- ARTIST
- MASCA
- OECD-MCCI