

July 7, 2000

MEMORANDUM TO: John W. Craig, Assistant for Operations  
Office of the Executive Director for Operations

FROM: Ashok C. Thadani, Director/**RA**/ by Margaret Federline  
Office of Nuclear Regulatory Research

SUBJECT: NASA/NRC WORKSHOP ON RISK ASSESSMENT AND RISK  
MANAGEMENT

Per earlier correspondence regarding interactions with NASA in the areas of risk assessment and risk management, please inform the Commissioners' Technical Assistants that members of the RES, NRR, and ADM staff participated in a small workshop with members of the NASA staff on June 27, 2000, at NASA Headquarters. The workshop objectives were to: a) identify risk assessment and risk management areas where collaboration between NASA and NRC is of mutual interest, and b) initiate collaborative activities in a selected number of these areas. The participants and topics of discussion are listed in the attached agenda.

Both the NRC and NASA presentations covered the risk assessment and risk management activities being performed in each agency, and areas of potential need. It is worth noting that although the NASA staff view the NRC as being much further along in the performance and use of risk assessment, NASA has performed a significant amount of work in risk assessment over the last few years, and that NASA's current administrator is a strong advocate of the use of risk in decision making.

The workshop was successful in identifying technical areas of mutual interest to both NASA and NRC. The area of greatest interest appeared to be human reliability analysis (including the treatment of errors of commission and work processes). Digital instrumentation and control system reliability, risk-informed decision making, and the risk significance of cables (including such issues as aging and fire response) were also discussed. The workshop was also successful in defining areas where NASA could benefit from previous NRC work to support its developing risk assessment and risk management capabilities. These areas include PRA training and PRA software. NASA expressed specific interest in the SAPHIRE code developed under RES sponsorship. NASA also expressed willingness to facilitate communications between NRC staff and the various NASA centers performing work in some of the technical areas indicated above, including digital systems (NASA Goddard) and human reliability (NASA Ames). Action items were identified during the meeting regarding specific documents and future interactions of interest to each party. It was agreed that, given the budget cycles of both parties, collaboration would be best initiated through informal technical information exchanges in specific areas. NASA indicated that a limited amount of funding might be available for cooperative PRA research. It was agreed that a follow-up meeting will be held in a few months to further discuss the possibility and modes of more extensive collaboration.

If you have any questions, please contact Dr. Nathan O. Siu at (301)415-6380.

Attachment: As stated

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# NASA/NRC Workshop on Risk Assessment and Risk Management

NASA Headquarters, 300 E St. SW, Washington, DC

June 27, 2000

## Workshop Objectives

- To identify risk assessment and risk management areas where collaboration between NASA and NRC is of mutual interest.
- To initiate collaborative activities in a selected number of these areas.

## Participants

NASA: F. Gregory (Associate Administrator, Office of Safety and Mission Assurance), M. Greenfield (Deputy Associate Administrator, Office of Safety and Mission Assurance), P. Rutledge (Director, Enterprise Safety and Mission Assurance Division), other technical experts

NRC: T. King (Director, Division of Risk Analysis and Applications), M. Cunningham (Chief, Probabilistic Risk Analysis Branch), R. Barrett (Chief, Probabilistic Safety Assessment Branch), K. Raglin (Associate Director for Training and Development), other technical experts

## Organizing Committee

M. Stametelatos (NASA), N. Siu (NRC)

## Topics and Agenda

8:30 Welcome and Introductions (M. Greenfield)

8:45 NASA Risk Assessment and Risk Management Activities (P. Rutledge)

9:15 NRC Risk Assessment and risk Management Activities (T. King)

9:45 Break

10:00 NRC Presentations

- Lessons learned: integrating PRA and NRC's regulatory culture (R. Barrett)
- PRA training activities (K. Raglin)
- PRA methods development: human reliability analysis and fire risk assessment (N. Siu)
- NRC PRA needs (N. Siu)
- NRC PRA software (open discussion)

12:00 Lunch

1:00 NASA Presentations

- NASA risk management program (P. Rutledge)
- NASA PRA needs (M. Stametelatos)
- Human factors research (TBD)
- Digital I&C systems reliability research (TBD)
- NASA PRA software (P. Rutledge)

3:00 Discussion: Potential Areas and Modes of Collaboration

4:30 Action Items

5:00 Adjournment