

RIC 2003

Risk-Informed Activities

Session T3

ASME Risk-Informed Nuclear Codes and Standards

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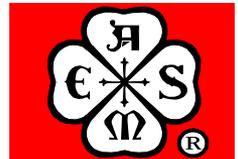
ASME International

17 April 2003



ASME - Overview

- **Founded 1880**
- **Nonprofit Educational and Technical Organization**
- **Approximately 125,000 individual members in over 130 countries**
- **49 Agreements of Cooperation**
- **Wide Variety of Programs**
 - **Codes and Standards**
 - **Education: Engineering, Professional Development**
 - **Government Relations**
 - **Technical Divisions - Conferences, Exhibits**
- **Staff - 400 employees 10 offices**



Codes and Standards Development

- **Council on Codes and Standards**
- **More than 600 Published Codes, Standards, and Guides**
- **More than 120 Main Committees (consensus bodies)**
- **Nearly 4000 volunteers**
- **Government Supported Members**
- **ASME Engineering Staff Support**



Codes and Standards Development

- **Consensus Process**
 - **ANSI Accredited Procedures**
 - **Consensus Committees - Balance of Categories**
 - **Open Technical Meetings**
 - **Public Review**
- **Editions and Addenda Service**
 - **Technical Inquiries**
 - **Code Cases**
- **Incorporation by Reference in US Regulatory Documents**



Board on Nuclear Codes and Standards

Manages codes and standards activities of:

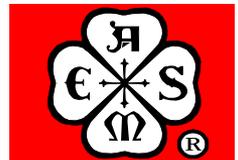
- **Committee on Qualification of Mechanical Equipment In Nuclear Power Plants (QME)**
- **BPV Subcommittee on Nuclear Power (SC III)**
- **Joint ACI/ASME Committee on Concrete Pressure Components (BPV III-2)**
- **BPV Subgroup on Containment Systems for Spent Fuel and High Level Waste Transport Packaging (BPV III-3)**
- **BPV Subcommittee on Nuclear Inservice Inspection (SC XI)**
- **Committee on Operation and Maintenance of Nuclear Power Plants (O&M)**
- **Committee on Nuclear Quality Assurance for Nuclear Facilities (NQA)**
- **Committee on Nuclear Air & Gas Treatment (CONAGT)**
- **Committee on Cranes for Nuclear Facilities (CNF)**
- **Committee on Nuclear Risk Management (CNRM)**



Major Top-Down NC&S Initiatives

- Risk-Informed NC&S
- Regulatory Endorsement of NC&S
- Globalization of NC&S
- NC&S for New Reactors

....note that Performance-Based NC&S has been a major “bottoms-up” initiative for several decades



Risk-Informed NC&S - Published

- Inservice Inspection
 - Code Cases N-560, N-577-1, and N-578-1
- Inservice Testing
 - Code Cases OMN-3-1, 4, 7, 10, 11, and 12
- Repair and Replacements
 - Code Cases N-660 and N-662
- PRA Standard
 - ASME RA-S-2002



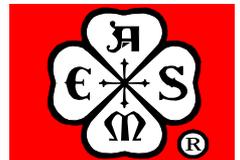
Risk-Informed NC&S – Under Development

- Pressure Testing
 - B&PV Section XI Code Case N-xxx
- Graded Quality Assurance
 - Non-mandatory Appendix “x” to ASME NQA-1 Standard



Risk-Informed NC&S - Planned

- Design
- Qualification of Mechanical Equipment
- Nuclear Air & Gas Treatment
- Nuclear Cranes



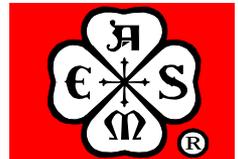
NC&S Risk Management Strategic Plan

- Mission
- Goal
- Summary of Proposed Initiatives
- Background
- Matrix of ASME NC&S Risk Management Developments
- Nuclear Systems Code
- Plan for 2003 and 2004
- Plan for 2005 and Beyond



The Engineer's Response to Homeland Security

- ASME should continue to advocate the use of risk analysis / assessment in public policy decision-making
- Vulnerability analysis may emerge as an area of engineering specialty
- Risk and risk mitigation should be incorporated into ASME's existing standards
- Consider developing guidelines and educational programs on emergency planning, rapid recovery, and threat mitigation for various types of facilities



NC&S Summary

- ASME is well along in risk-informing its Nuclear Codes & Standards
- The ASME PRA Standard is the nuclear industry benchmark for probabilistic risk analysis – the basic building block of nuclear risk-informed regulation
- Some of the ASME risk technology is useful for prioritization of other government activities (i.e., Homeland Security for USA infrastructure)

