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Section III Advancements for New Reactors

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ASME Advancements for New Reactors

- Expansion of Sections III and XI
- ASME B&PV Technical Initiatives
- ASME Code Process Improvements
- ASME Code Programmatic Enhancements

Section III and XI Expansion

- Began development of Division 4 for Fusion Components
- Established Subgroup on Graphite Core Support Structures
- Division 5 High Temperature Gas and Liquid Metal Reactors
- Initiate Reorganizing of General Requirements
- Section XI Division 2 ISI for High Temperature Gas Reactors

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ASME Section III Technical Initiatives

- Graphite core support rules for gas reactors
- Lead international research for high temperature metallic materials through Standards Technology LLC
- Expand and enhance Subsection NH Elevated Temperature
- Developing Risk-informed safety classification Code Case
- Initiate development of risk-informed design for piping
- Underground polyethylene plastic pipe rules currently in ASME Code Case N-755
- Approach for addressing environmental effects on fatigue rules

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ASME Code Process Improvements

- In process of realigning for industry focus
- Board on Nuclear Codes & Standards and selected Code meetings held outside the USA
- Globalizing the ASME Code Process
- ASME Standards Technology LLC
- Actively seeking out new committee members – Worldwide and technical expansion
- Established Corresponding and Delegate Committee Membership

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ASME Board on Nuclear Codes and Standards Task Group Efforts

- Globalization and New Reactor Task Group
  - Make Nuclear Codes & Standards easier to use in the international community
  - Encourage worldwide stakeholders to participate in the ASME codes and standards development technical consensus process
- Regulatory Endorsement Task Group
  - Facilitate regulatory endorsement of Nuclear Codes & Standards
- Risk Management Task Group
  - Apply risk technology to Nuclear Codes & Standards

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Key ASME Global Developments

- New Reactor Globalization Workshops and Visits
  - U.S., South Africa, Canada, Europe, China, South Korea
  - JSME / ASME Workshop in Nagoya, JAPAN
- ASME BNCS Meeting and Workshop held in Prague, Czech Republic in June 2006
- ASME BNCS Meeting and Workshop held in Cadarache, France in February 2008 at ITER Project Site
- Multinational Design Evaluation Program-MDEP in France/South Korea
- Many International Representatives and Delegates have become members and actively engaged in ASME Nuclear Codes & Standards

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Code Comparison Project for The MDEP Effort

- A Detail Comparison of Pressure Vessel Code Requirements between the Following Codes:
  - RCC-M of France
  - JSME Code of Japan
  - KEPIC Code of South Korea
  - Canadian Nuclear Pressure Vessel Code
- Will Cover Design, Materials, Fabrication, Examination, Quality Assurance and Conformity Assessment

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ASME Code Programmatic Enhancements

- **Quality Assurance Coordination**
  - NQA-1-2008 issued for NRC Review and Endorsement
  - Updating Section III QA General Requirements to use NQA-1-2008
  - Work with Organization for Economic Co-operation and Development / Nuclear Energy Association (OECD/NEA) Multinational Design Evaluation Program (MDEP) to normalize various countries/IAEA- QA requirements
  - Guidance on NQA-1 and ISO-9001 implementation for Nuclear Components

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ASME Code Programmatic Enhancements

- **Section III Simplification**
  - Developing an Approach for Restructuring Section III to make it easier for the users and less costly to implement
  - Subgroup Division 1&2 Strategy and Management established
- **Facilitate incorporation of foreign materials**

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ASME Code Programmatic Enhancements

- **Professional Engineer certification outside USA**
  - ASME is taking action (non-nuclear) for other countries' engineer certification to establish equivalency
  - Revise NCA General Requirements as appropriate
- **Reviewing frequency of new code editions and addenda**
- **Joint Section III and XI Task Group to address inspection and operating experience**

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Cooperative Activities with other Standards Organizations

- ASME /ANS PRA Combined Standards Committee
- Nuclear Risk Management Coordinating Committee
  - ASME, ANS, NRC, NEI, DOE, IEEE, EPRI, Owners Groups
  - Some key areas for coordination
    - Level 1, 2, 3 PRA Standards for current and new reactors
    - Risk-Informed Safety Classification / risk-informed design
    - Education and training initiatives
- ACI / ASME Concrete Containments
- Implement AISC N-690 for support requirements
- ASME QME Qualification of Mechanical Equipment is coordinating to eliminate conflicts with IEEE
- Cooperation with IAEA on Standards Development

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Summary

- ASME has a number of initiatives underway to address the needs for new reactor developments and to enhance collaboration with worldwide stakeholders
- ASME Nuclear Codes & Standards are used and accepted internationally
- ASME brings together both technical quality and conformity requirements together in stamped components
- ASME is working closely with other Standards Development Organizations

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