IAEA Action Plan on Nuclear Safety

Implementation and Key Achievements

Lyn Bevington
Nuclear Safety Action Team
OVERVIEW

• Action Plan Background
• Nuclear Safety Action Team
• IAEA Action Plan on Nuclear Safety
  • Nuclear Member States
  • Non-Nuclear member States
• Key Achievements
• Reporting Arrangements
BACKGROUND

- IAEA Ministerial Conference
  - Ministerial Declaration
  - Working Session Conclusions and recommendations
- Fact-Finding Mission to Japan
- INSAG
- Member States consultations
- Nuclear Safety Action Team
NUCLEAR SAFETY ACTION TEAM

• Board of Governors – Sept 2011
• Nuclear Safety Action Team
• Oversee Prompt Implementation
• Special Coordinator
  • Gustavo Caruso
• Web Site + Web Platform
• Secretariat Activities
  • NS NE NA TC OLA....

IAEA
IAEA ACTION PLAN ON NUCLEAR SAFETY

12 Point Plan

- Safety Vulnerabilities,
- Peer Reviews,
- Emergency Preparedness and Response
- Regulatory Bodies,
- Operating Organisations
- IAEA Safety Standards,
- Legal Framework
- Embarking countries,
- Capacity Building
- Protection of People + Environment
- Communication,
- Research + Development

Actions on

- IAEA Secretariat
- Member States
- Other Relevant Stakeholders
IAEA ACTION PLAN ON NUCLEAR SAFETY

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- Safety Vulnerabilities,
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Strengthen
Enhance Effectiveness

Actions on
- IAEA Secretariat
- Member States
- Other Relevant Stakeholders
ASSESSMENT OF SAFETY VULNERABILITIES

Action Plan
• Member States to promptly undertake a national assessment
• IAEA Secretariat develop a methodology and make it available for MSs
• IAEA Secretariat, upon request, to provide assistance and support to MSs

Key Achievements
• IAEA Methodology
• Support and Advice to Member States
• International Expert Mission to Japan
  • January 2012
STRENGTHEN IAEA PEER REVIEWS

Action Plan

- IAEA Secretariat to strengthen peer reviews
- Provide information on where and when IAEA peer reviews done
- Member States to provide experts for peer review missions

Key Achievements

- IRRS + EPREV
  - Dedicated ‘Fukushima’ Modules
- OSART + DRS
  - Severe Accident Management / Assessment
- Publish peer review results
STRENGTHEN EMERGENCY PREPAREDNESS AND RESPONSE

Action Plan

• Member States conduct prompt national review
• IAEA/stakeholders strengthen the international EPR framework
• Strengthen assistance mechanisms

Key Achievements

• Meeting of Inter-Agency Committee on Radiological and Nuclear Emergencies
  IARCNE - December 2011
• RANET meeting - Feb 2012
STRENGTHEN THE EFFECTIVENESS OF NATIONAL REGULATORY BODIES

Action Plan

• MSs to promptly review regulatory bodies
• IAEA to enhance the IRRS
• Each MS with nuclear power plants to voluntarily host an IRRS

Key Achievements

• IRRS International workshop USA Oct 2011
• IRRS - more systematic assessment of national regulations and guidance + Fukushima module
• Effective Nuclear Regulatory Systems
STRENGTHEN EFFECTIVENESS OF OPERATING ORGANIZATIONS

Action Plan

• Strengthen IAEA/WANO links
• Member States to
  • Improve management systems, safety culture, human resources management, in operating organizations
  • Host OSART in next three years

Key Achievements

• Cooperation WANO
  • DG Amano - WANO Conference 2011
  • Coordinate Peer Reviews, Safety Standards, Embarking Countries
  • New MoU
REVIEW AND STRENGTHEN IAEA SAFETY STANDARDS

Action Plan
• IAEA Secretariat to review, and revise as necessary
• Member States to utilize as broadly and effectively as possible the IAEA Safety Standards

Key Achievements
• Systematic Review Requirements for NPPs
  • No Gaps, some enhancements needed
• Streamline Review Process
• Report to IAEA Director General - June 2012
IMPROVE EFFECTIVENESS OF INTERNATIONAL LEGAL FRAMEWORK

Action Plan

- States parties to consider enhancing the effectiveness of CNS et al.
- MS encouraged to join and effectively implement these Conventions

Key Achievements

- International Expert Group on Nuclear Liability (INLEX)
- Nuclear Law Institute (NLI)
- CNS Extraordinary Meeting Aug 2012
MEMBER STATES EMBARKING ON NUCLEAR POWER PROGRAMME

Action Plan

• MS - appropriate infrastructure
  • IAEA Safety Standards and
  • Other relevant guidance
• IAEA to provide assistance
• MSs to host INIRs

Key Achievements

• Infrastructure Workshop Jan 12
• INIR Mission Bangladesh
• Safety Infrastructure Guide SSG-16
STRENGTHEN AND MAINTAIN CAPACITY BUILDING

Action Plan

• MS with NPPs and those embarking to strengthen, develop, maintain and implement their capacity building programs
• IAEA to assist as requested

Key Achievements

• IAEA Guidance on capacity building,
• Self-assessment, including
  • Human resources,
  • Education and training,
  • Knowledge management and networks
PROTECTION OF PEOPLE + ENVIRONMENT FROM IONIZING RADIATION

Action Plan

• MSs, IAEA Secretariat + relevant stakeholders to facilitate use of information/expertise for
  • Monitoring, decontamination and remediation
  • Removal of damaged nuclear fuel and the management and disposal of radioactive waste, and
  • Share information regarding the assessment of radiation doses and impacts on people and the environment
  • IAEA to assist as requested

Key Achievements

• International Expert Mission Remediation
  • Japan Oct 2011
• Models and Data for Radiological Impact Assessment (MODARIA)
COMMUNICATION AND DISSEMINATION OF INFORMATION

Action Plan

• Strengthen the emergency notification system
• Enhance the transparency and effectiveness of communication among operators, regulators and various international organizations
• Review application of INES scale as a communication tool
• Organize international experts meetings IEMs

Key Achievements

• International Experts’ Meetings IEMs
  • Reactor and Spent Fuel Safety March 2012
  • Communication June 2012
  • Remediation and Decommissioning March 2013
• Workshop on Seismic and Tsunami Hazards August 2012
• Ministerial Conference on Nuclear Safety December 2012
• Effective Regulatory Systems Conference Canada April 2013
INTERNATIONAL EXPERTS’ MEETING
REACTOR AND SPENT FUEL SAFETY

• 250 experts - 44 Member States 4 international organizations

• Objectives
  • Analyse relevant technical aspects of reactor and spent nuclear fuel management safety and performance
  • Review what is known to date about the accident in order to understand more fully its root causes
  • Share lessons learned + facilitate information sharing IAEA Secretariat and Member States
TOPICS DISCUSSED

- Combination of hazards and multiple-units
- Severe accident management
- Key systems for safe state + I&C systems for monitoring
- More attention on Mitigation
- Embarking countries
- Defence in depth philosophy and strategies
- Safety spent fuel: Loss of cooling; Loss of water; Re-criticality; Hydrogen production; Zirconium fires.
The IEM should be further analysed and be used in the implementation of the Action Plan.

- IAEA prepare a report.
- There is much still to be learned and shared
- High level of the presentations
- Convene a similar event in the future.
RESEARCH AND DEVELOPMENT

Action Plan

• Relevant Stakeholders with IAEA support to conduct necessary research and development
• Establish a Forum for organisations dealing with research and development
• Relevant Stakeholders with IAEA support to utilize the results of research and development and to share them, as appropriate, to the benefit of all Member States.

Key Achievements

• Technical and Scientific Support Organization (TSO) Forum to strengthen scientific and technical coordination and collaboration among Member States
  • Steering Committee January 2012
ACTION PLAN REPORTING
ARRANGEMENTS

• IAEA Board of Governors
  • November 2011
  • March 2012
  • June 2012
  • September 2012

• General Conference 2012

• Lessons Learned
CONCLUSIONS

• Purpose of Action Plan is to define a programme of work to strengthen the global nuclear safety framework

• Success of Action Plan depends on its implementation through full cooperation and participation of IAEA, Member States and other stakeholders.

• Ensure broad dissemination of Action Plan outcomes

• Strengthen communication to facilitate information sharing with IAEA Secretariat and Member States
Thank you