IAEA Activities Related to Construction

2nd CNRA International Workshop on “New Reactor Siting, Licensing and Construction Experience”
Atlanta, Georgia, USA
24-26 October 2012

Stephen Koenick
Senior Safety Officer
Regulatory Activities Section | Division of Nuclear Installation Safety
Department of Nuclear Safety and Security

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CONTENT

- Related conclusions from 2nd Extraordinary Meeting of the Convention on Nuclear Safety
- Draft Safety Guide, DS 441, "*Construction for Nuclear Installations*"
- Draft Safety Guide, DS 446, Revision of the Safety Guide No. NS-G-2.9 "Commissioning for Nuclear Power Plants" (2003)
- Safety guides related to siting
- Draft Safety Report, DD1048, "*Development Of A Regulatory Inspection Programme For A New Nuclear Power Plant Project*"
- Nuclear Safety Action Plan
- Assistance to embarking countries

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Related conclusions from 2nd Extraordinary Meeting of the Convention on Nuclear Safety

2. The Contracting Parties agreed that nuclear power plants should be designed, constructed and operated with the objectives of preventing accidents and, should an accident occur, mitigating its effects and avoiding off-site contamination. The Contracting Parties also noted that regulatory authorities should ensure that these objectives are applied in order to identify and implement appropriate safety improvements at existing plants.

3. The regulator's top priority must be to protect public health and safety. The Contracting Parties will ensure that regulatory bodies have sufficient resources to undertake their duties and are effectively independent from entities having responsibilities or interests in the promotion or utilization of nuclear energy that could conflict or unduly influence the regulator's decision making.

[except from Press Release August 31, 2012]

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DS 441, *Construction for Nuclear Installations*

Scope -- Proposed content of new safety guide to include management system of safety-significant construction activities by licensee and supplements guidance provided by GS-G-3.1 and GS-G-3.5 on implementation of construction activities. Also provides guidance for role of regulatory body during construction.

Status – Draft was reviewed and authorized by Commission on Safety Standards (CSS) in December 2011; and distributed to Member States for comment by May 2012;

- Around 600 comments received from Member states and other organizations. Consultancy held in August 2012 to consider these comments.
- Large number of comments accepted. Preparations for safety standards review committees in early 2013.

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DS 446, Commissioning for Nuclear Power Plants

Scope -- Revision of the Safety Guide No. NS-G-2.9 “Commissioning for Nuclear Power Plants” (2003) to confirm technical adequacy of existing safety guide such that the revision will maintain technical content and supplement with latest proven practices.

Status -- The draft DS446 to incorporate agreed resolution of CSS comments and to be translated in Spanish, when published. 32nd Meeting CSS 9 – 11 October 2012.

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Safety Guides related to siting

IAEA Safety Guides recently issued

- SSG-9 Seismic Hazards in Site Evaluation for Nuclear Installations (2010)
- SSG-18 Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations (2011)

IAEA Safety Guides under development

- DS433: Safety Aspects in Siting for Nuclear Installations – incorporating MS comments
- DS405: Volcanic Hazards in Site Evaluation for Nuclear Installations – in publications process

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DS 1048, Draft Safety Report

Proposed Title: "*DEVELOPMENT OF A REGULATORY INSPECTION PROGRAMME FOR A NEW NUCLEAR POWER PLANT PROJECT*"

Objectives

- To support regulatory bodies in the development of their regulatory inspection programmes;
- To provide information on key technical considerations and activities related to the regulatory body's development of their regulatory inspection programme taking into account approaches, practices and experience of Member States that have been involved in recent new nuclear plant construction projects [MS examples annexed to report]; and
- To identify relevant IAEA Safety Standards within one document.

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DS 1048, Draft Safety Report

Status:

- Held Technical Meeting in July 30 – 3 August to revise, finalize safety report
- TM Chairman's report with working draft of safety report to be placed on IAEA webpage
- Draft Safety Report to be go through internal quality assurance in November 2012 followed by publication process.

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Nuclear Safety Action Plan

12 Areas

- ***Safety Assessments in the light of the accident*** – Member States perform, IAEA provide assistance
- ***IAEA Peer Reviews*** – IAEA strengthen existing peers reviews, improve transparency, Member States strongly encouraged to volunteer to host peer reviews
- ***Emergency Preparedness and Response*** -- Member States prompt reviews, IAEA peer reviews, IAEA, MS and relevant organizations strengthen international emergency preparedness, MS utilize IAEA Response and Assistance Network (RANET)
- ***National Regulatory bodies*** – MS conduct national review, voluntarily host IRRS
- ***Operating Organizations*** – MS ensure improvement, voluntarily host OSART
- ***IAEA Safety Standards*** – IAEA review and revise as necessary, MS to utilize
- ***International legal framework*** – MS encourage to join and enhance effectiveness of implementation of conventions

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Nuclear Safety Action Plan

12 Areas, continued

- ***Embarking countries*** – MS create necessary infrastructure, voluntarily host INIR and other relevant peer review missions
- ***Capacity Building*** – MS build and implement capacity building programme, IAEA provide assistance as requested
- ***Protection of People and Environment*** -- Member States, IAEA and relevant organizations facilitate use of information following accident
- ***Communication and information dissemination*** – MS and IAEA strengthen notification systems, transparency and openness, continue sharing of transparent assessment of accident
- ***Research and Development*** – Relevant stakeholders with IAEA assistance conduct research and development in nuclear safety

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IAEA assistance to embarking countries

- Gradual application of IAEA safety standards informed by actions in SSG – 16
- Self Assessment
- Focus on principal deliverables of the Regulatory Body in each phase of the nuclear power programme
- Safety Packages of IAEA Assistance

Self-Assessment for Regulatory Infrastructure (SARIS) and component for SSG-16

- SARIS issued September 2012
  - Revision to self-assessment tool (SAT)
  - User-friendly interface, updated to current IAEA safety standards
  - Supports preparation and conduct of Integrated Regulatory Review Service (IRRS)
- **IRIS** [Integrated Review of Infrastructure for Safety] based on SSG-16 is part of this IT system

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Self-Assessment for Regulatory Infrastructure (SARIS) and component for SSG-16

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  - Integrated regulatory review services
  - Nuclear security advisory services
  - Operational safety reviews

Self-Assessment of Regulatory Infrastructure for Safety (SARIS)

Objective

The IAEA Self-Assessment of Regulatory Infrastructure for Safety (SARIS) methodology and tools have been developed to support States' routine and regular self-evaluation of national regulatory infrastructure for nuclear and radiation safety in terms of compatibility with IAEA safety standards.

The IAEA SARIS methodology and tools are a development of the former IAEA SAT self-assessment system. Current SAT users will note that SARIS

Resources

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Self-Assessment for Regulatory Infrastructure (SARIS) and component for SSG-16

Establishing Safety Infrastructure webpage

http://www-ns.iaea.org/tech-areas/safety-infrastructure/default.asp?s=0&l=94

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Establishing the Safety Infrastructure

Safety Guide on establishing the safety infrastructure for a nuclear power programme (SSG-16)

A nuclear power programme is a major undertaking requiring careful planning, preparation and a major investment in time and human resources. While nuclear power is not unique in this respect, it is different because of the safety issues associated with the possession and handling of nuclear material and the long time commitment to ensuring safety after the decision to embark on a nuclear power programme has been made.

Resources

- Regulatory Infrastructure
- Integrated Regulatory Review Services (IRRS)
- Nuclear Installation Safety

Related documents

- Introductory Workshop on Establishing a Safety Infrastructure
- Supporting the Introduction of Nuclear Energy (ARCAL XCV)
- Workshop on Capacity Building and Infrastructure

Safety Packages

- Basic Professional Training Course in Nuclear Safety
- **Module 1**- Governmental, Legal and Regulatory Framework for Safety
- **Module 2** - Human Resources

http://www-ns.iaea.org/images/ni/training/ssg-16/ssg-16-pyramide_web.jpg

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SSG 16 organized into 11 Thematic Modules

Safety Packages for Each Module

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Safety Packages organized by Phase

- ✓ Who: responsible organization (e.g., Government, Operating Organization, and Regulatory Body)
- ✓ What: Summary of the relevant actions and underlying IAEA Safety Standards
- ✓ When: appropriate phase (1, 2, or 3)

How Agency can assist: Appropriate Peer review services, Advisory Services, Education and Training, and Networks and Tools

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Safety Package for Module 1

http://www-ns.iaea.org/tech-areas/safety-infrastructure/ssg-16-module-1.asp?s=0&l=94

Module 1

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Establishing the Safety Infrastructure

Safety Package for Module 1: Governmental, Legal and Regulatory Framework for Safety

This module combines the following elements of SSG-16:

- National policy and strategy for safety (Actions 1 – 10)
- Global nuclear safety regime (Actions 11 – 19)
- Legal framework (Actions 20 – 23)
- Regulatory framework (Actions 24 – 38)
- Transparency and openness (Actions 39 – 47)
- Funding and financing (Actions 48 – 60)

Related SSG-16 Actions: 1 – 60

In Phase 1, the Government is building awareness related to the establishment of safety infrastructure and other aspects of infrastructure necessary to support a knowledgeable decision. The safety package for this module addresses these elements with that goal. At the end of Phase 1, the government should be fully aware that a nuclear power programme needs a firm and long term commitment to ensuring safety.

In Phase 2, the Government should establish a clear national policy and strategy for meeting safety requirements and ensure the efficient development of the safety infrastructure including funding provisions. Furthermore, the Government should enact essential elements of the Legal framework and establish an independent regulatory body. Following its creation, the

Safety Packages

- Safety Infrastructure
- Basic Professional Training Course in Nuclear Safety
- **Module 1**- Governmental, Legal and Regulatory Framework for Safety
- **Module 2** - Human Resources Development
- **Module 3** - Leadership and Management for Safety
- **Module 4** - Radiation Protection
- **Module 5** - Site Survey, Site Selection & Site Evaluation
- **Module 6** - Safety of Radioactive Waste, Spent Fuel and Decommissioning
- **Module 7** - Emergency Preparedness and Response
- **Module 8** - External Support Organizations and Contractors
- **Module 9** - Safety in Design, Safety Assessment and Research for Safety

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IAEA Initiative to Strengthen Assistance Capabilities

- Development of "Exemplary Training Material" in support to Specialized Workshops to strengthen technical and managerial competences of staff of the Regulatory Bodies – emphasis on the Organizational Development
  Topics completed and currently under review:
  - Safety Regulations
  - Regulatory Review and Assessment
  - Regulatory Inspection and Enforcement
  - Human Resource Development of the RB and the use of External Support Organizations

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IAEA Initiative to Strengthen Assistance Capabilities

Workshops format and contents

- Core material - thematic and based on IAEA Safety Standards
- Application - examples of practices in Member States
- Exercises - tailored to specific needs of MS with outlook on milestones of future activities

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Duration: *typically 1 week*

Target: SSG 16 actions relevant to phases 1-3

Material : Exemplary set of presentations and talking points

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IAEA Assistance for Embarking Countries

IRRS for embarking countries

New module was developed for the IRRS tailored to:

- **review status of safety infrastructure based on SSG 16**
- **identify gaps**
- **support preparation of action plans for enhancing the effectiveness of regulatory bodies**
- **Considered in UAE in December 2011**
- **Requested for Poland planned April 2013**

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Thank you for your attention!!

s.koenick@iaea.org

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