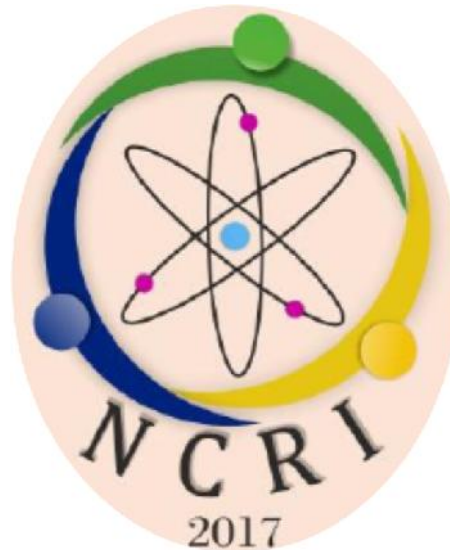


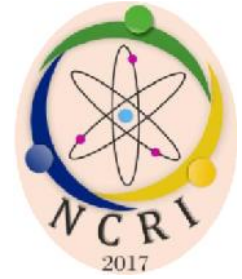


National Conference on Regulatory Interface

Mumbai

28-30, November 2017





Technical session -2

**Topic: Regulatory
requirements**

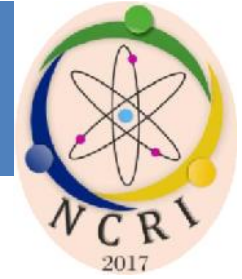
Presentation by:

T. J. Irudayaraj, SO/F

BHAVINI



Presentation Emphasises on



- Participation of stakeholders in document development process: evolution and improvement



- licensees feedback on AERB regulatory documents



Requirement of regulation



The safety of the workers concerned, the general public and the environment at large, is to be ensured

This is possible through compliance with the relevant provisions of the Act.

The compliance can be enforced by

- Framing rules and regulations
- Laying down safety standards
- Adaption and maintenance of high safety standards.
- Inspection / monitoring
- Recording / documenting

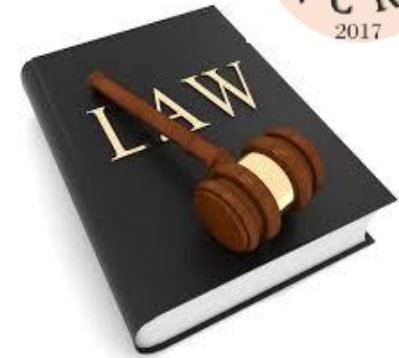




Requirement of documents



Effective implementation can be done only if these regulatory requirements are specified through standard documents.



One of the functions stipulated in the Constitution Order of AERB is to develop Safety Codes, Standards and Guides and develop safety policies.

The regulatory documents are essential for the scientific approach we follow.





Types of regulatory documents



Safety codes

To establish objectives and to set minimum requirements that shall be fulfilled to provide adequate assurance for safety

Safety standards

Contain Internationally accepted safety criteria for design, construction and operation of specific equipment, systems, structures and components

These codes & standards are mandatory in nature. Utility has to comply with.





Types of regulatory documents



Safety guides

Provide guidelines and make available the methods for implementing specific requirements as prescribed in-line with the relevant Safety Code(s).

Safety manuals

Intended to elaborate specific aspects and may contain detailed technical information and/or procedures.

Guides and manuals are recommendatory in nature.



RECOMMENDED



Development of documents



Evolution - Few important milestone publications

- 1982- Radiation Protection Manual for Nuclear Facilities
- 1987- Safety Manual on Site Emergency Plan for Nuclear Installations (AERB/SM/NSD-1)
- 1988- Safety Manual on “Off-site Emergency Plan for Nuclear Installations (AERB/SM/NSD-2)”





Development of documents



Evolution - Few important milestone publications

- 1989- Safety Manual on
“Governing Authorization
Procedure for Nuclear
Power Projects/Plant
(AERB/SM/NSD-3)
- 1990- Code of Practice on Safety
for Nuclear Power Plant
Siting.
 - Safety criteria for design of
Prototype Fast Breeder
Reactor(PFBR)





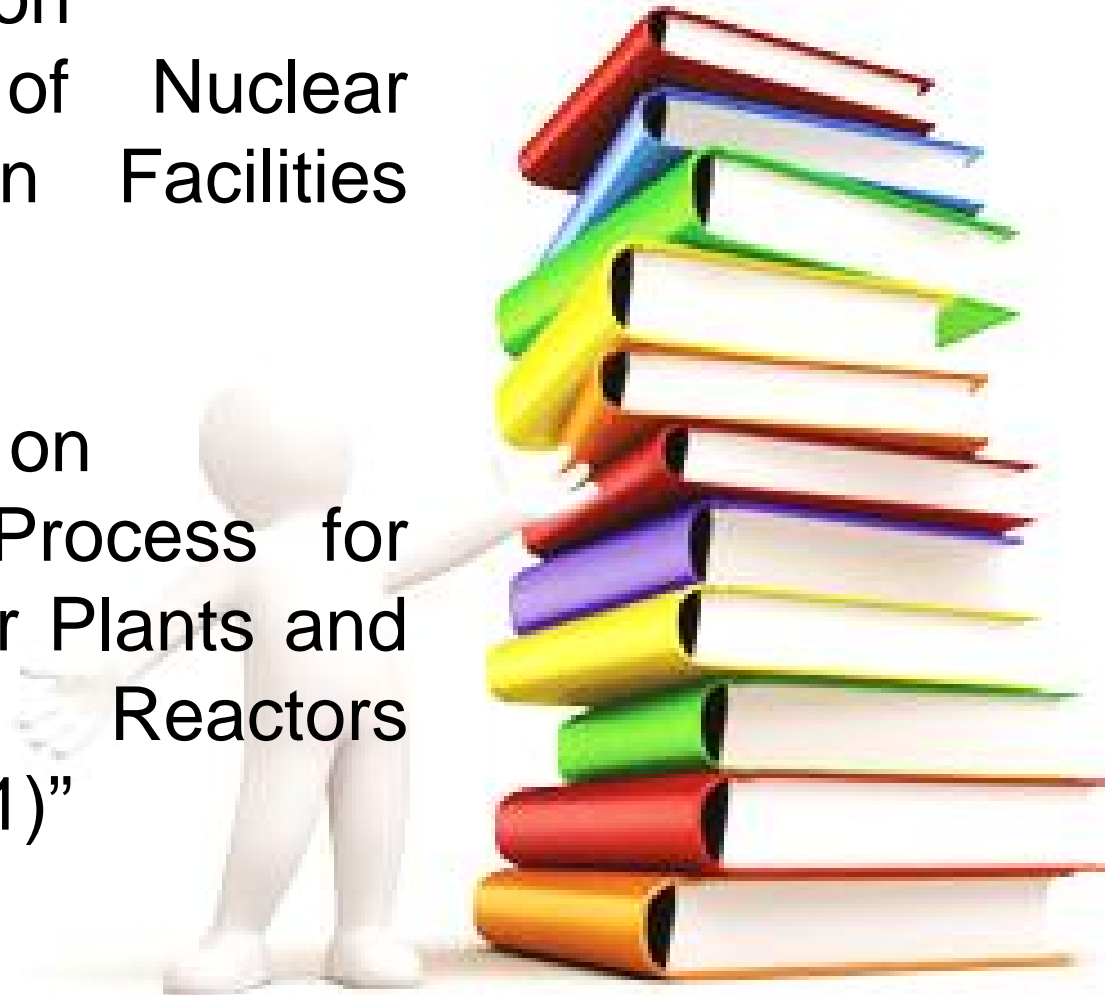
Development of documents



Evolution - Few important milestone publications

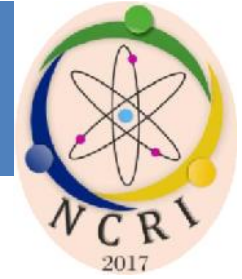
2000- Safety Code on
“Regulation of Nuclear
and Radiation Facilities
(AERB/SC/G)

2007- Safety Guide on
“Consenting Process for
Nuclear Power Plants and
Research Reactors
(AERB/SG/G-1)”





Development of documents



In the past thirty four years, more than 156 regulatory documents have been developed and published by AERB Covering the entire spectrum of nuclear and radiological facilities.

At present,

- 11 safety codes,
- 10 Safety standards,
- 67 safety guides,
- 3 safety manuals.

are available for stakeholders to comply / adhere with.





Development of documents



Regulatory document development process has evolved over time. It is derived from,

- graded approach for safety,
- Multi-tier review system,
- Involvement of experts from various institutes and other interested parties
- Reference to relevant international safety standards.



AERB also has the liberty to nominate/invite officials who have expertise in the areas of regulatory aspects for development of documents.



Stakeholders



The stakeholders in the regulatory process are,

- Government
- Regulators
- Licensee - Designer, Operators, Manufacturer & Vendors

And the most important

- General Public.





Participation of Stakeholders



If we take a look into the members of the committee of each document it is prudent that the experts are drawn from,

- National R&D Centres,
- Academic Institutes
- Government Organisations,
- Specialists having experience in the related fields
- Representatives from utility

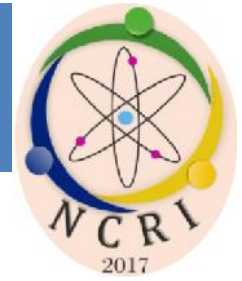


All the documents are placed in public domain by AERB with the invitation that “the comments and suggestion on any of the regulatory document can be sent to **documents@aerb.gov.in.**”





Participation of Stakeholders



Advantages of stakeholders participation in document development

- consensus
- Implementation
- Design & Operation Experience

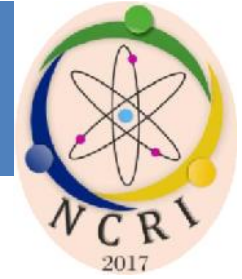


Representatives of Utilities also participate in these processes but their involvement is limited to representation in the committees, which are advisory in nature.

The final decision with regard to regulatory document lies with the competent authority in AERB.



BHAVINI participation



Currently, BHAVINI is participating in development of

AERB/NPP/SG/G-1 (Rev.1) - Consenting for nuclear power plants



AERB/NPP-FBR/SC/D- Design of fast breeder based nuclear power plants



Improvements



Consolidation of documents can be taken up for following activities

- handling radiological emergency
 - which is being taken up
- Transport of radioactive material



SG-O 4/D – Commissioning procedure for fast breeder reactor to be issued.





Licensees feed back



Regulatory documents being followed by BHAVINI

- Consent - AERB/NPP&RR/SG/G-1
- Siting - AERB/NF/SC/S & related guides
- Construction - AERB/NF/SS/CSE-
- Industrial safety - AERB/NRF/SG/IS-1
- Fire safety - AERB/NF/SS/FPS
- Security - Security Manual





Licensees feed back



Regulatory documents being followed by BHAVINI

Emergency preparedness - AERB/NRF/SG/EP-5

Design - safety criteria for design of PFBR

Quality assurance - AERB/NPP/SC/QA

Containment testing - AERB/NPP/SG/O-15

Commissioning - AERB/SG/O-4

Soon will be following documents pertaining to radioactive transport, operation, radiation protection.





Licensees feed back



Experience of BHAVINI on these documents:

Even though the documents are generic in nature, the appendix, annexures & examples of these documents are of PHWR based plants.



Inclusion of Fast Breeder Reactor (FBR) specific appendices, annexures & examples in the existing documents to be expedited.

Alternatively, Separate documents for Fast Breeder Reactor based plants is desirable.





Thank You!