Federal Ministry for the
Environment, Nature Conservation
and Nuclear Safety

Senior Regulators Meeting
IAEO Generalkonferenz, 17.09.2009
„Co-ordination of International Regulatory Support for Newcomers and Countries Expanding their Nuclear Power"

Regulatory Review and Knowledge Networks

M. Herttrich, Germany

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Overview

1. Challenges of a national nuclear power programme
2. Framework and instruments for international regulatory cooperation
   - Global nuclear safety and security regime
3. International regulatory cooperation
   - Global nuclear safety and security network
4. Regulatory reviews
   - Conventions, Missions, Coordination
5. Summary

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Challenges of a national nuclear power programme

- Major effort: 15 years until first production-commitment for a century and beyond
- Full national responsibility of ownership of a national nuclear power programme
- Nuclear safety infrastructure cannot just be copied, imported or operated from outside
- need for knowledgeable national decisions and long-term commitments
- National nuclear safety infrastructure to be built
  - in the specific national context on firm legal basis
  - full compliance with international law and obligations
- National nuclear + safety infrastructure continuously available and effective for a century and even longer

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Framework and instruments (1)
International regulatory cooperation

- Response of the nuclear safety and security community to global challenges such as
  - severe accidents
  - events such as 9/11
  - public concerns about nuclear risks
- Establishment and applications of
  - institutional, legal and technical instruments and resources,
    - legally binding or not
    - formal and informal
  - to protect the global community effectively against nuclear hazards and risks
- Term used in cooperation at the IAEA

  →Global Nuclear Safety and Security Regime

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Framework and instruments (2)
Global Nuclear Safety & Security Regime

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Framework and Instruments (3) Guidance and support for newcomers

- Newcomers for a national nuclear power programme have to become serious and active participants to the global nuclear safety regime
  - in there own interest
  - in the interest of the global community
- Newcomers will find guidance by Member States, IAEA and international organisations
  - for nuclear safety infrastructure (licensee's responsibility)
  - for nuclear safety infrastructure (government's and regulator's responsibility) in accordance with the IAEA safety standards
- Newcomers will find regulatory support
  - in compliance with basic principles and criteria
  - based on common understanding and a reciprocal agreements

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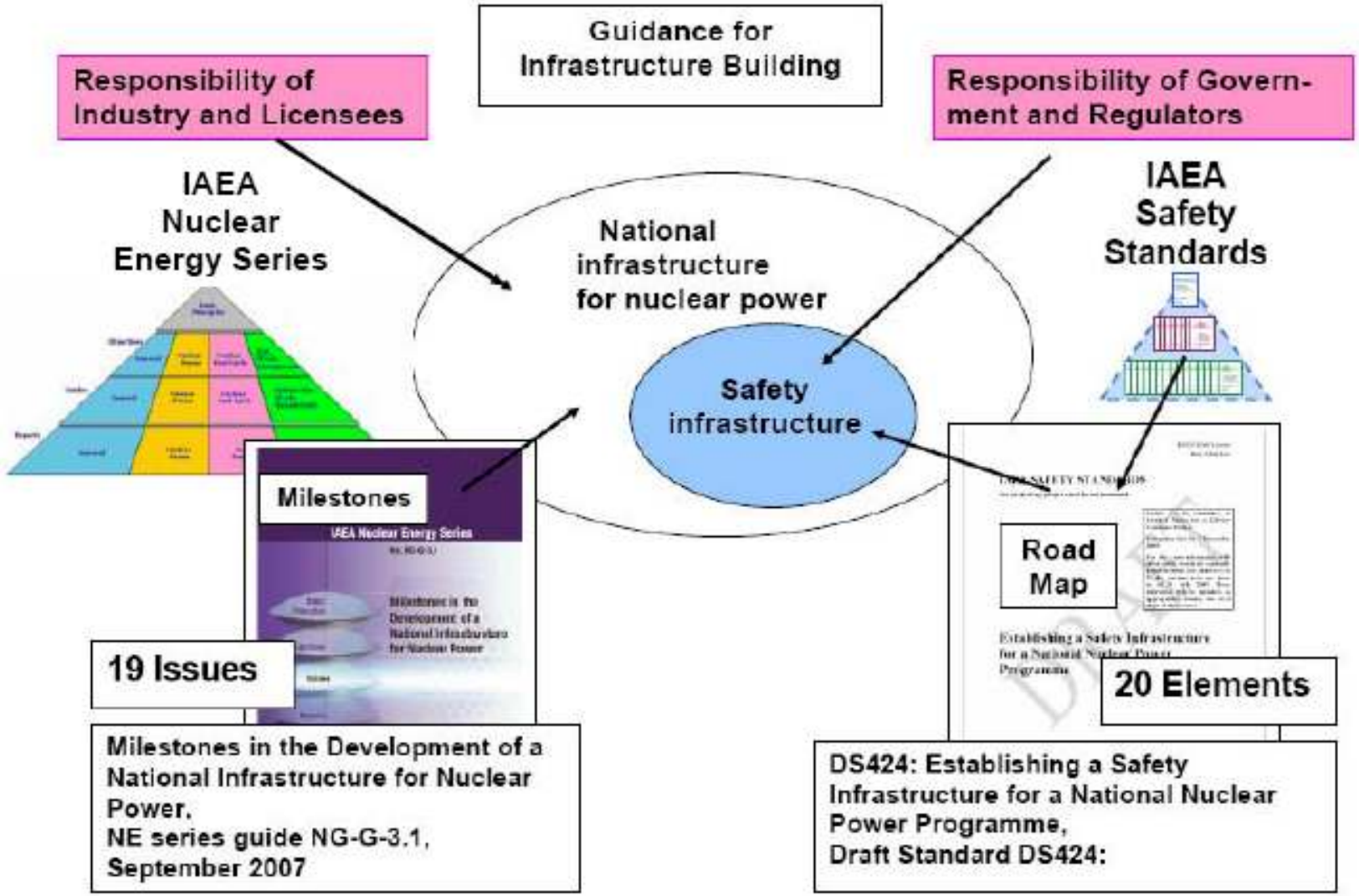
Framework and instruments (4)



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Framework and instruments (5) Issues, Requirements, Road Map

- Road map (DS 424): holistic approach towards effective nuclear safety infrastructure
- not only for newcomers
- also for self assessment of nuclear power countries
- Maintaining effectiveness and continuous improvement of own national safety infrastructure
- Action plans to compensate for possible deviations
- Acceptance of significant deviations
  - endangers global nuclear safety and security
  - detrimental to credibility of nuclear regulators
  - weakens effectiveness of regulatory support

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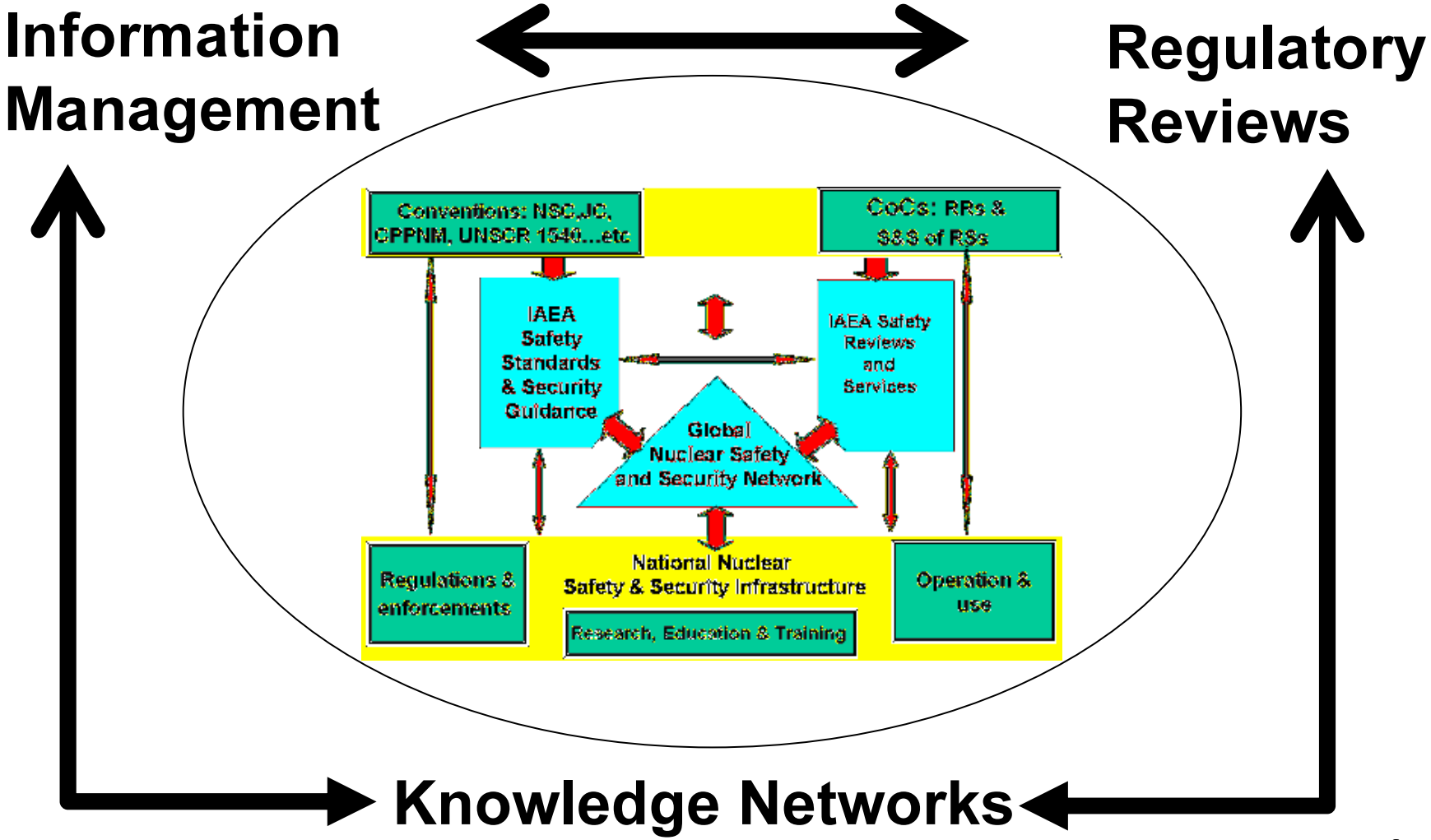
Cooperation within the GNSSR (1) Regulatory Reviews - Networking



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Cooperation within the GNSSR (2) GNSS-Network and RegNet

- Performance and effectiveness of the GNSS-Regime depend strongly upon web-based support
- Examples for web-based support for the GNSS-Regime:
  - Homepages of national regulators and international organisations
  - Web-based support for the Review Process under the nuclear conventions
  - Information exchange on events and operational experience: INES, IRS, FINAS, ..
  - Regional Networking: ANSN, FORO, ETSON, Forum of Nuclear Regulatory Bodies of African Nuclear Regulators
  - WENRA Reactor Harmonisation Project: 5000 national benchmarks against ca. 300 reference levels

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Cooperation within the GNSSR (3) GNSS-Network and RegNet

- **GNSS-Network:**
  - set of existing & future information resources and networks on nuclear safety and security matters
  - internationally accessible - open or password protected
  - including active or latent interactions between these resources and networks.
- **International Regulatory Network**
  - part of GNSS-Network supporting nuclear safety and security regulators
- **Effective networking of regulators requires**
  - more visibility of existing web-based networks
  - easier direct access to authorized information
  - improved comparability and adequateness of content

Management of information and knowledge as resource (GS-R-3)

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GNSS – Network (1)
Objective

To ensure that
safety and security knowledge,
experience, and lessons learned
are made visible and available,
through links between platforms, and
exchanged as broadly as they need to be and
to enable and support interaction and collaboration
between competent people and organisations

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GNSS – Network (2)
Activities to establish GNSS-Network & RegNet

- Moscow Conference, Effective Nuclear Regulatory Systems, Jan/Feb 2006
- G8 initiative in 2007 – G8 Summit Papers, Heiligendamm, June 2007
- Technical Meeting on the Establishment of the International Regulatory Network, Vienna, 2008
- Consultants' Meeting on the Establishment of the International Regulatory Network, Vienna, 2009
- **GNSS-Network and RegNet platform currently being developed at the IAEA**

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GNSS – Network (3)
Current developments

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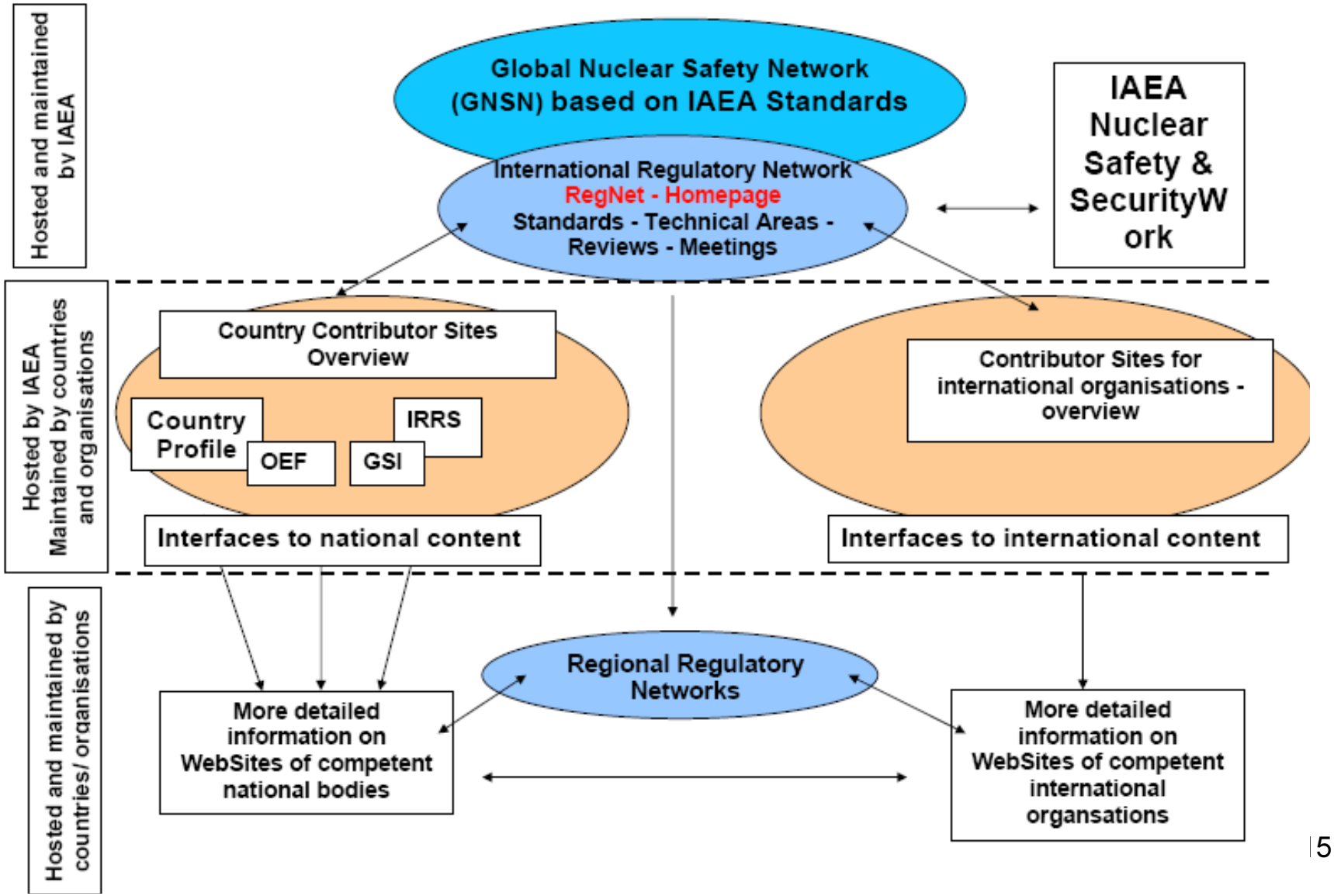
GNSS – Network (4)
Global portal for nuclear regulators



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GNSS – Network (5)
Basic Principles

- Ultimate responsibility for the content and quality remains with the respective providers of the information and network operators (process owners);
- Process owners recognize that they are part of a broader community of networks;
- Continuous efforts are made by process owners to make the network visible and conducive to international co-operation;
- There is a striving for common solutions, using best practices and advanced technologies, and for optimal use of resources;
- Agreed-upon commitments are adhered to

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Regulatory Reviews (1) Background for regulatory cooperation

- National responsibility for nuclear safety and security
- National establishment of a robust framework in accordance with international standards
- Building a national nuclear infrastructure
- Progressive establishment and sustainable maintenance of a nuclear safety infrastructure
- Active participation in the global nuclear safety regime
- Search for international exchange and support
- Acceptance of the principles of openness, transparency and evaluation
- Reviews and appraisals towards compliance with the agreed objectives

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Regulatory Reviews (2) Functions within the GNSS-Regime

Functions of Reviews

- understood in context of management cycle: plan-do-check-act, including self assessments and corrective actions
- to determine progress in developing and establishing nuclear safety infrastructure
- to provide support in a meaningful and timely manner

Global Nuclear Safety and Regime

- builds on many different kinds of reviews
- review mechanisms under the obligations of the nuclear conventions
- feedback on the application of standards
- regular reporting and experience feedback
- IAEA reviews and appraisals as INIR, IRRS, OSART

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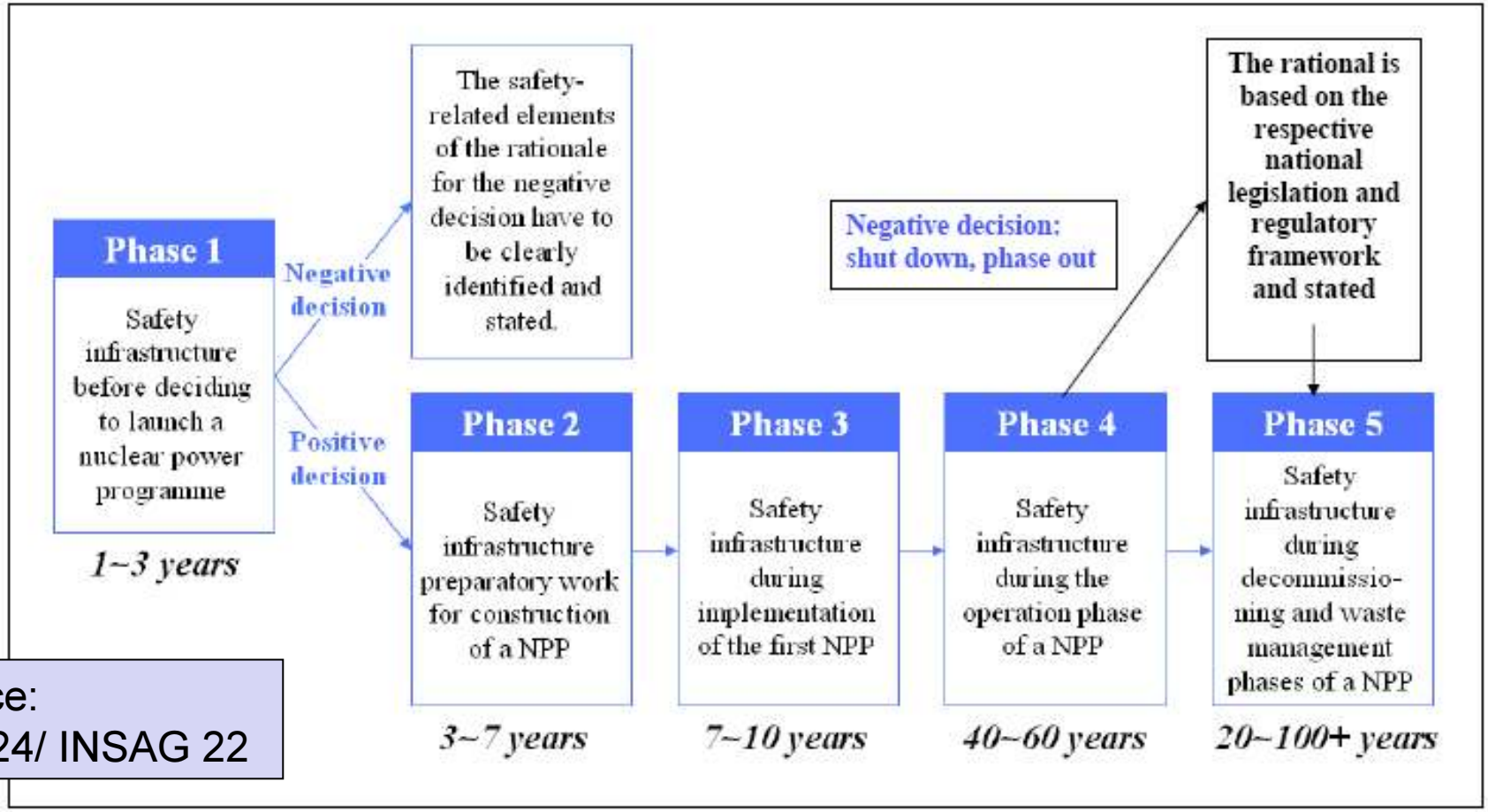
Regulatory Reviews (3)
Reviews and lifecycle phases



Source:
DS 424/ INSAG 22

Three year's „plan-do-check-act management cycles" under the nuclear convention's verification mechanism

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Regulatory Reviews (4)
Improvements of reviews under conventions

- Use of the review process (management cycle) of Nuclear Conventions as vehicle for open and critical peer review and a source for learning about the best safety practices of others (INSAG 21);
- Special review mechanisms adapted to needs of MS in one of the five phases of a NP-Power programme
- Three years management cycle
  - national report and review meeting → action-plan → implementation → self assessment
  - regulatory support for management cycle implementation and reviews

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Regulatory Reviews (5)
Possible improvements for review missions

- Web-based information exchange and collaboration between host country, IAEA, reviewer
- Country nuclear regulatory profiles with internationally agreed format as base for advanced reference material
- Pooling of experts for international reviews
- Training and preparation for review team
- Support for adequate preparation of reviewers
- Quality assurance for the mission processes
- Information sharing and experience feedback from missions (RegNet WebSites)

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Regulatory Reviews (6)
Possible improvements for coordination

- Role and function for an „International Country Coordinator Mechanism“- based on existing structures - to promote joint efforts.
- Country nuclear regulatory profiles for comprehensive overview and knowledgeable co-operation.
- Common framework for country profiles based on Agency experience and operated as part of the web-based IAEA International Regulatory Network
- Supplementary country specific information under overall responsibility of the respective member state

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Summary

- Networking important factor for the effectiveness of international regulatory cooperation
  - human and organisational networks
  - web-based networks
- Establishing and operating the GNSS-Network will
  - further enhance international regulatory cooperation
  - support capacity building and knowledge management
  - promote harmonisation of approaches for safety and security
  - enable improvements in regulatory review activities
- Improvements are possible such as
  - Review mechanisms under the Nuclear Conventions: management cycle, web-based exchange and learning
  - Review missions: web-based information exchange and collaboration, sharing of lessons learned and good practices
  - Country specific coordination of support and reviews