



**IRSN**

INSTITUT  
DE RADIOPROTECTION  
ET DE SÛRETÉ NUCLÉAIRE

# Challenges of a Harmonized Global Safety Regime

Jacques Repussard  
Director General IRSN

IAEA 2007 Scientific Forum

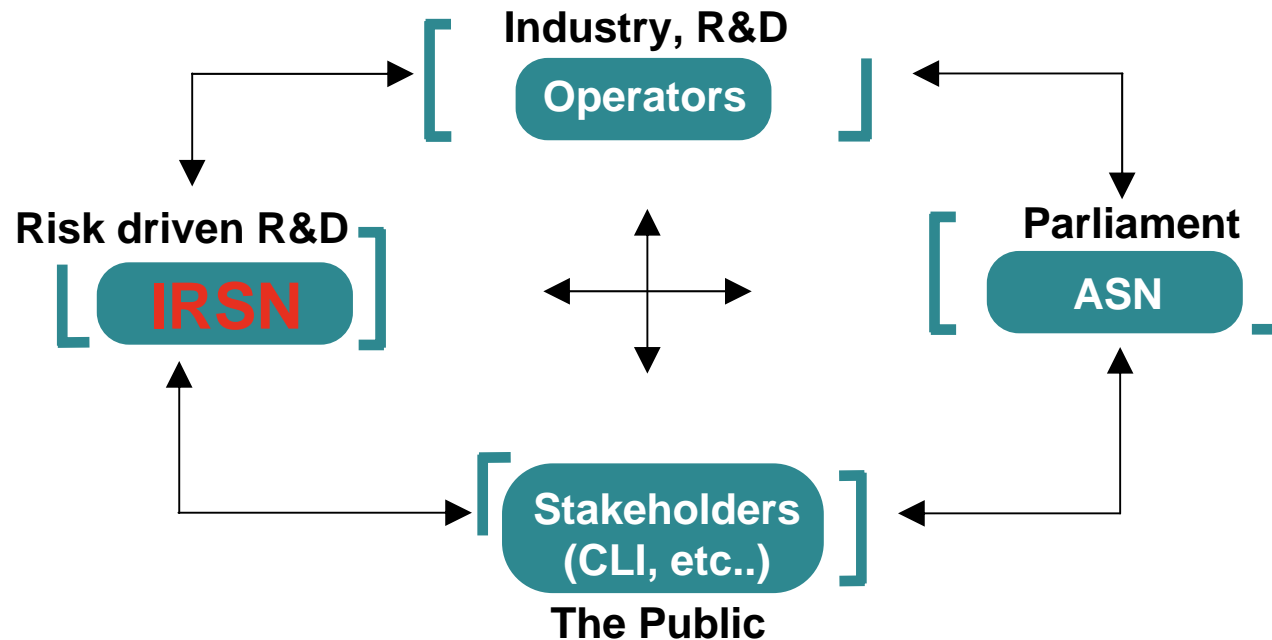
# Challenges of a Harmonized Global Safety Regime

## Presentation summary

- Introduction: role of IRSN in the French nuclear safety system
- Key requirements for a sustainable development of nuclear energy
- A global vision to ensure permanent safety improvement worldwide
- The worldwide safety challenge: 5 key indicators
- Technical safety expertise: a pivotal resource for a harmonized safety regime
- The role of TSO's within a global safety regime
- A way forward: conclusions of the IAEA Aix-en Provence Conference on TSO's
- Conclusion

# IRSN: the French TSO

- A clear status within the regulatory framework



- a wide field of competence allowing a broad vision of safety, security and radiation protection issues
- risk assessment capability at the heart of IRSN's R&D and operational support missions
- a strong international involvement
- 1700 people, 280 M€ budget, ISO 9001 certified

# Key requirements for a sustainable development of nuclear energy

1/3

The nuclear fission industry will have to demonstrate that it can provide for the future:

1. economic and reliable conditions for electricity generation,
2. an optimized use of natural resources,
3. a very high-level worldwide of safety and security,
4. adequate protection of workers, population and environment, against radiological hazards,
5. a minimal generation of long-lived, high level radiotoxic waste,
6. safe disposal solutions for ultimate waste products.

Newbuild projects: a major challenge for industry and operators

# Key requirements for a sustainable development of nuclear energy

## 2/3

National regulatory systems will need to:

- Maintain appropriate regulatory framework
- License operators within a constrained time frame
- Monitor and inspect nuclear facilities on a transparent basis
- Take appropriate action from operating experience feed back
- Ensure accident preparedness
- Provide adequate public information

Newbuild projects: a major challenge for regulators

# Key requirements for a sustainable development of nuclear energy

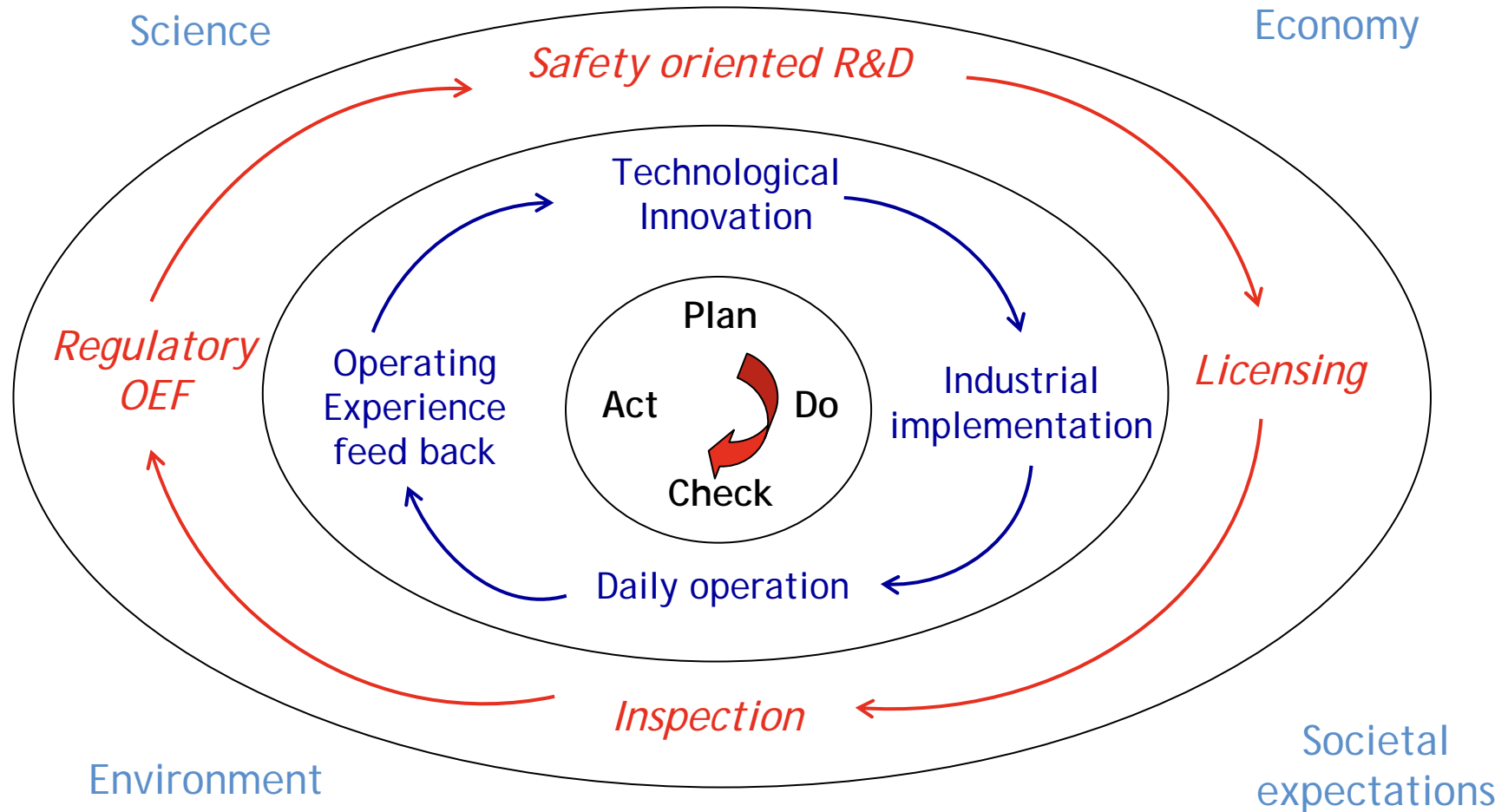
## 3/3

The international nuclear safety and radiation protection community will need to:

- Maintain and develop International Standards and Guides so as to incorporate up to date safety practice and R&D results
- Encourage and support where necessary the development of national nuclear safety and radiation protection capability
- Facilitate access to reference expert knowledge, through international R&D programmes and increasing of international networking
- Monitor a global vision of nuclear safety and radiation protection implementation

Newbuild projects: a major challenge for the international safety and radiation protection community

# A global vision to ensure permanent worldwide safety improvement



# The worldwide nuclear safety challenge:

## 5 key indicators

- Technical safety knowledge and assessment tools (advanced codes, metrology, databases, safety culture ...) should progress in step with technology, industry and societal evolution;
- International standards and guides should be maintained in line with best safety practice and references;
- Technical transnational cooperation on licensing programmes for new reactors should be normal practice;
- Safety oriented Operating Experience Feedback (OEF) information should be fully analysed and exploited in all concerned countries.
- Emergency preparedness capability should be across the world consistent with best practice requirements



## Technical safety and radiation protection expertise: a pivotal resource for a global harmonized safety regime

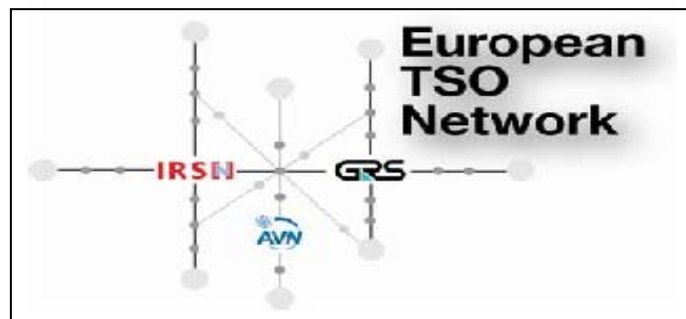
- An essential contribution to R&D and to training and education;
- A strong participation in international safety / radiation protection programmes in IAEA and NEA;
- Vendor independent, science based, safety file and environmental impact assessment capability is essential to support the licensing process;
- Operator independent **scientific and technical support to OEF management** in support to regulatory adjustments;
- A key component of emergency preparedness capability

## The role of TSO's within a global safety regime

The experience of major TSO's provides a pragmatic reference for the build up of a reliable transnational expertise capability which:

- Is fundamentally science based through its R&D roots and ties;
- is capable of independence of judgement, and as such contributes to clarity in regulatory decisions and to public confidence;
- contributes to professional networking on a regional or international basis;
- brings operational support to IAEA and NEA missions.

But beyond regional experimentation, there is so far no global common understanding of what is a TSO and of how they can cooperate.



## A way forward: conclusions of the IAEA Aix-en Provence Conference on TSO's (April 2007)

- A recognition of the important role played by TSO's in national and international nuclear safety and radiation protection activities;
- A need to clarify concepts, terminology, values, activities, resources of TSO's in order to encourage their development in support to national nuclear safety policies;
- A request to IAEA to facilitate the optimization of TSO operations (ad hoc services, self assessment methods, peer reviews,...) in support to regulatory missions;
- An invitation to the international nuclear safety and radiation protection community to consider the benefits to be gained from active transnational networking between TSO's;

## Conclusion

Progress towards a harmonized global safety regime will require:

- an internationally agreed roadmap to steer processes on a permanent and auditable improvement course,
- intensified networking of national nuclear safety and radiation protection systems,
- adequate resources dedicated to safety and radiation protection in industry, regulatory systems, and at IAEA level,
- the transnational availability of reference technical expertise and related R&D resources in order to remain in step with growing needs, which could be fostered through TSO networks.

Thank you for your attention