



INTERNATIONAL WORKSHOP ON ADVANCED REACTOR SYSTEMS AND FUTURE ENERGY MARKET NEEDS

The environmental and regulatory
issues of new reactors

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THE ENVIRONMENTAL AND REGULATORY ISSUES OF NEW REACTORS

SUMMARY

- THE ENVIRONMENT, A SOCIETAL CONCERN
- TOPICS REFLECTED IN THE REGULATIONS
- ANTICIPATE TO WIN
- LISTENING, EXPLAINING AND INTERACTING

THE ENVIRONMENT, A SOCIETAL CONCERN

- The media, political (Paris Climate Convention) and legislative news are rich of entries relatives to:
 - The climate change
 - The preservation of biodiversity
 - Economies of natural resources
 - The Dialogue and consultation around the equipment
- Topics include:
 - In legislation, regulations, standards
 - In the corporate responsibility objectives (expectations of the financial markets, insurance companies, rating agencies, financial partnership for new projects)
 - In the framework for the design and operation of nuclear installations
 - By penalties increased (criminal, ecological damage, refusal of authorization ...)

TheScientist

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The Scientist • The Notebook

Report: Biodiversity Has Fallen Below "Safe" Levels

More than half of the world's land may have passed the threshold that threatens long-term sustainable development, researchers report.

By Tanya Lewis | July 18, 2016

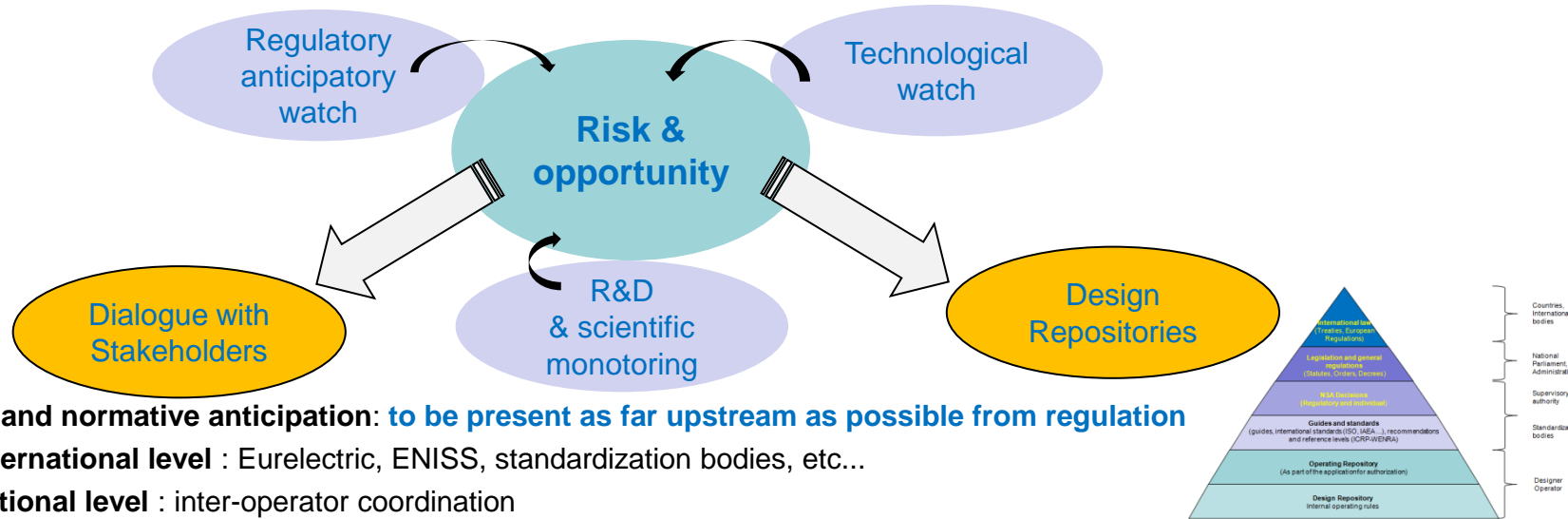
The screenshot shows a collage of news-related content. At the top left is the Z NEWS logo with 'ISSI 90' and various regional language options (हिन्दी, मराठी, বাংলা, தமிழ்). Below it is a navigation bar for 'INDIA STATES WORLD BUSINESS SPORTS CRICKET TECHNOLOGY'. A prominent headline reads 'ASSEMBLY ELECTIONS 2017'. To the right, a snippet from 'theguardian' is visible with the headline 'Climate change impact on Australia may be irreversible, five-yearly report says'. Below the main navigation, there is a 'Biodiversity' section with a sub-headline 'Biodiversity Act to be implemented soon in entire Himachal Pradesh'. Underneath, there are several article teasers: 'Scientists express concern over impact of LED lights on plants and animals', 'Wetlands: Why we need to take care of them. what', and 'Major environmental ch...'. At the bottom right, there is a large image of a protest with the headline 'Sivens : tensions extrêmes avant la décision du Tarn' and a sub-headline 'Le conseil général doit se prononcer sur les alternatives plus modestes au projet de barrage contesté.' Below this, a caption reads 'conference in Honolulu confirmed that the majestic species of Eastern Gorillas (Gorilla beringei) now faces the risk of disappearing completely, with just 5,000'.



TOPICS REFLECTED IN THE REGULATIONS

- The desire of the society for **independence for the authorities** (Nuclear Safety Authority, Environmental Authority) with **pluralistic expertise** (technical support, local information commission, associations), more **listening and consultation with the public**: local information commission, Aarhus, consultation, internet , Impact and risk prevention studies ...
- **Large-scale regulations**: *for example in Europe* : **Biocides**, **FGAS**, **REACH** and the **reversal of the burden of proof** for the impact of substances with the need to demonstrate, for a product at risk, that:
 - no substitute (BAT) was found,
 - the process can not be modified to dispense with the product (BAT),
 - all the measures were taken to limit the impact. The **Best Available Techniques** (BAT) at **economically acceptable cost**: **you have to know them and let you know**, it is the basis of an authorization file
- **Environmental directives** not dedicated but applying to nuclear activities: *for example in Europe* : **Water**, **sea**, **SEVESO**, **industrial emissions**, **Circular economy**, with international conventions that serve as a basis for European regulation: **Aarhus**, **OSPAR** in addition to the **Euratom Directives**: **safety, waste, basic standards**
- **National regulations**: *for example new french regulation* : **TECV**, **biodiversity**, **risks**, **participatory democracy laws**...**With an increasingly risk-averse society**

ANTICIPATE TO WIN



- **Regulatory and normative anticipation: to be present as far upstream as possible from regulation**
 - At the **international level** : Eurelectric, ENISS, standardization bodies, etc...
 - At the **national level** : inter-operator coordination
 - Focus our resources on the regulatory targets at stake: the strategic substances and equipment associated with substitution studies, necessary compensation according to the logic: avoid, reduce, compensate. Zero-defect on objects at stake is required
- **Technological watch**: capturing innovations, anticipating substitution needs (ex HFC), biocide ...), know the practices recognized by other stakeholders (industrialists, NGOs ...)
- **R & D and scientific monitoring**: **update knowledge on phenomena** (such as consequences of climate change, chemical products substitution)
- **Risks & opportunities**: **early identification of issues in a context of cost control** (imperative of competitiveness)
- **Design repositories**: Integrate regulations / standards from the design stage and follow developments at all stages until commissioning
- **Dialogue with Stakeholders**:
 - Have a scientific and rigorous approach to the construction, study and analysis of texts by further strengthening technical control
 - To have a recognition of the peers and the stakeholders: internal scientific rigor in the experimental works, studies and modeling
 - Presence and solicitations of our experts in the scientific councils and external bodies
 - Partnership and scientific co-publications
 - Eco-design approach: *for example embedded when opening on EPR NM*

LISTENING, EXPLAINING AND INTERACTING

Environment and Society

- Various very recent ordinances reinforcing "environmental procedures" ...
 - ❖ a Charter of Public Participation
 - ❖ A **reinforced consultation upstream of the projects** ... at a stage of their development where they can more easily evolve to take into account the observations of the public
 - ❖ Provision of an impact study by the operator **electronically** on a national platform and the possibility of making observations via the Internet
- Our Issues:
 - ❖ **Reinforce the territorial anchorage** and the opening during the exploitation to ensure the success of the future appointments.
 - ❖ **Preparing for future consultative phases**: debates and public inquiry planned
- Our actions:
 - ❖ Make our arguments accessible to common sense. We are no longer between "technicians" only; The "experts" selected (GP, CLI, ...) have a different profile. The public wants to be associated
 - ❖ Know how to explain and dialogue:
 - ✓ In writing: books or in popular newspapers,
 - ✓ Oral: Participate in the application, in support of meetings open to stakeholders
Integrate civil society more upstream in designing a project to facilitate its acceptance

CONCLUSION

For EDF, an **integrated approach** combining the professions of production (engineering, operators, builder), R & D, legal forces **to anticipate** the constraints of tomorrow ...

... to address the two key issues of the future of nuclear power: **competitiveness** and **acceptability**

**THANK FOR
YOUR
ATTENTION**

TOPICS REFLECTED IN THE REGULATIONS

- The **protection of nature and the environment** is one of the interests protected by Article L.593-1 of the Environmental Code (former TSN) with public safety, health and sanitation

The operator must protect these interests against:

- **Disadvantages** [water withdrawals and consumption, discharges, waste, nuisances (noise, microorganisms) in normal or degraded operation];
- And **risks** [incidents and accidents of any kind, radiological or not] ... presented by NBI (reactors), ... giving priority to nuclear safety and radiation protection

The **designer** must demonstrate that the **technical or organizational arrangements** adopted or envisaged and the general principles proposed for **operating** and **decommissioning** are such as to **prevent or sufficiently limit the risks or disadvantages** that the installation presents for the interests

