



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Hauptabteilung für die Sicherheit der Kernanlagen HSK

IAEA Scientific Forum, Session 3:

Nuclear Safety and Security: Enabling a Nuclear Future

Advancing International Consensus in Nuclear Safety/Security Regulation

Ulrich Schmocker, Swiss Federal Nuclear Safety Inspectorate (HSK)



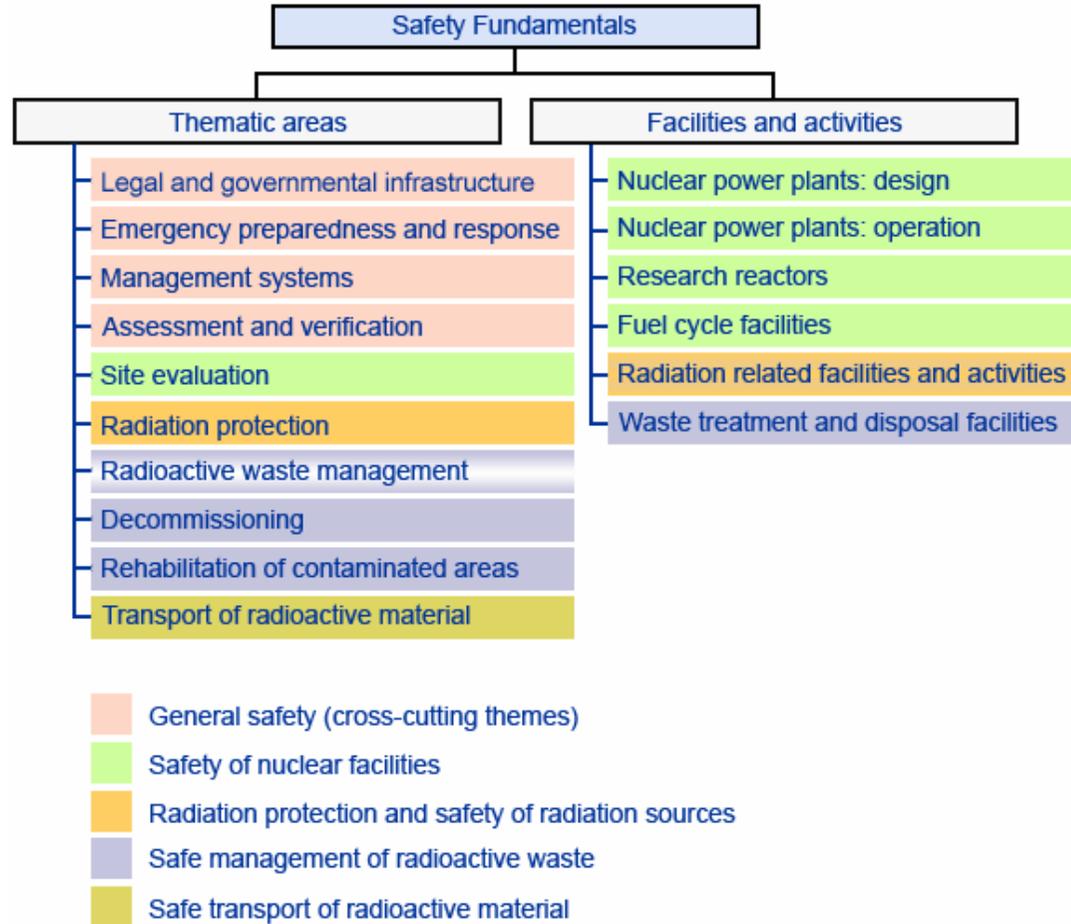
The Pillars of Nuclear Safety

- robust **facility design**
- competent and “safety first” oriented **operators**
- strong, competent and independent national **regulators**





The IAEA Safety Standards (1)





The IAEA Nuclear Standards (2)

+

- Developed by the member states
- Cover all areas on nuclear safety
 - 50 thematic safety standards and
 - 40 facility specific safety standards
- enhance the level of nuclear safety and security worldwide

-

- Difficult to have a complete overview over all recommendations (“shall”) and suggestions (“should”)
 - About 2‘500 recommendations
 - About 20‘000 suggestions
- Standards are not very userfriendly

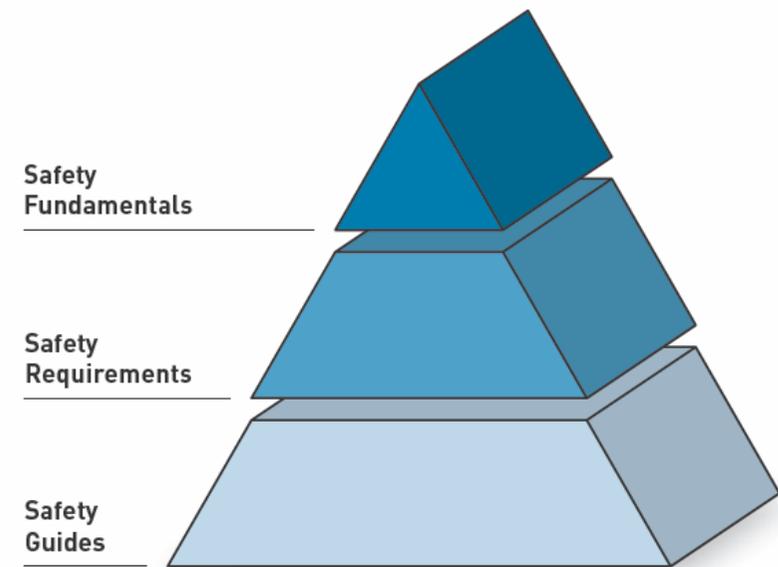
- Many countries have a historically grown regulatory framework
- Human and organizational aspects depend on the culture of the country and cannot be completely harmonized



IAEA Safety Standards (3)

The CSS initiative:

- Establish a logical relationship between the unified Safety Fundamentals and the various Safety Requirements, as well as logical relationships between the Safety Requirements and the subsequent Safety Guides;
- Maintain a manageable number of publications and take into account the need for efficiency and timeliness for the future development of the Series;
- Identify the set of necessary Safety Requirements and take an evolutionary approach for their development;
- Consider development of a better distinction between what is a requirement and what is considered as guidance (a more rigorous approach to shall and should);
- Define the “closed set” of Safety Guides to be developed.
-



should be finished by 2020.



The WENRA Approach (1)

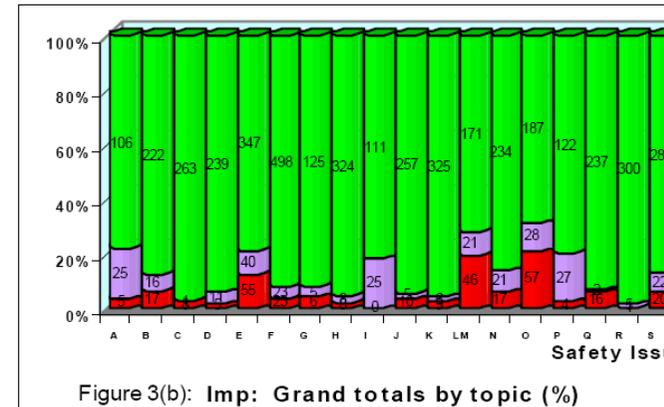
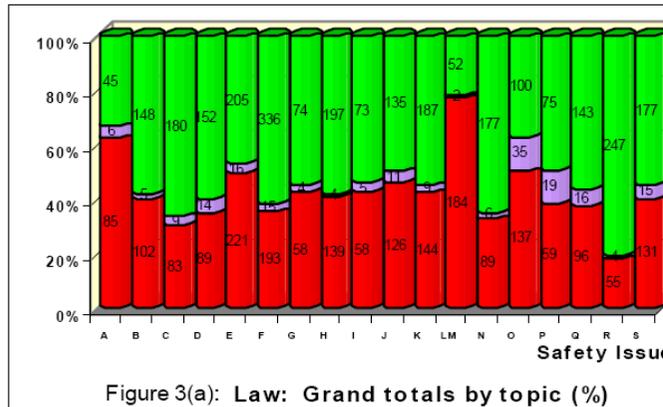
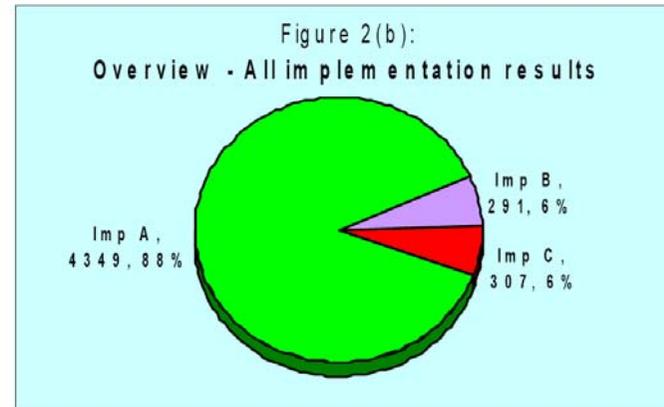
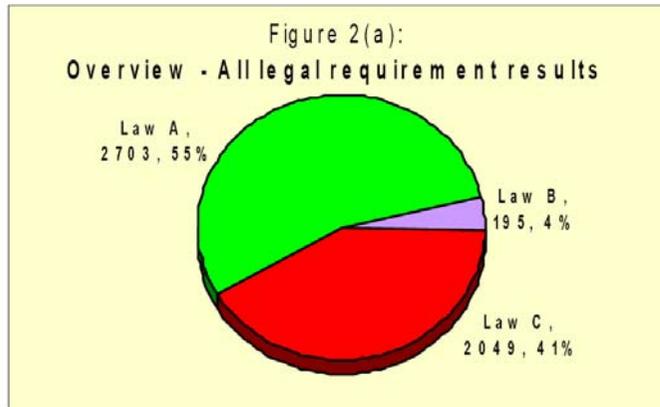
WENRA makes the following statement regarding harmonization of nuclear safety:

No substantial differences between (WENRA) countries from the safety point of view in generic, formally issued, national safety requirements and in their resulting implementation on nuclear power plants.

Safety area		Safety issue	Number of SRL
	A	Safety policy	8
	B	Operating organization	15
Safety management	C	Quality management	23
	D	Training and authorization of NPP staff	15
	E	Design basis envelope for existing reactors	44
Design	F	Design extension of existing reactors	12
	G	Safety classification of structures, systems and components	7
	H	Operational limits and conditions	19
	I	Ageing management	8
Operation	J	System for investigation of events and operational events feedback	16
	K	Maintenance, in-service inspection and functional testing	20
	LM	Emergency operational procedures (EOP) and Severe accident management guidelines (SAMG)	14
	N	Content and updating of safety analysis report (SAR)	16
Safety verification	O	Probabilistic safety analysis (PSA)	16
	P	Periodic safety review (PSR)	9
	Q	Plant modifications	15
Emergency preparedness	R	On-site emergency preparedness	18
	S	Fire protection against internal fires	20



The WENRA Approach (2)



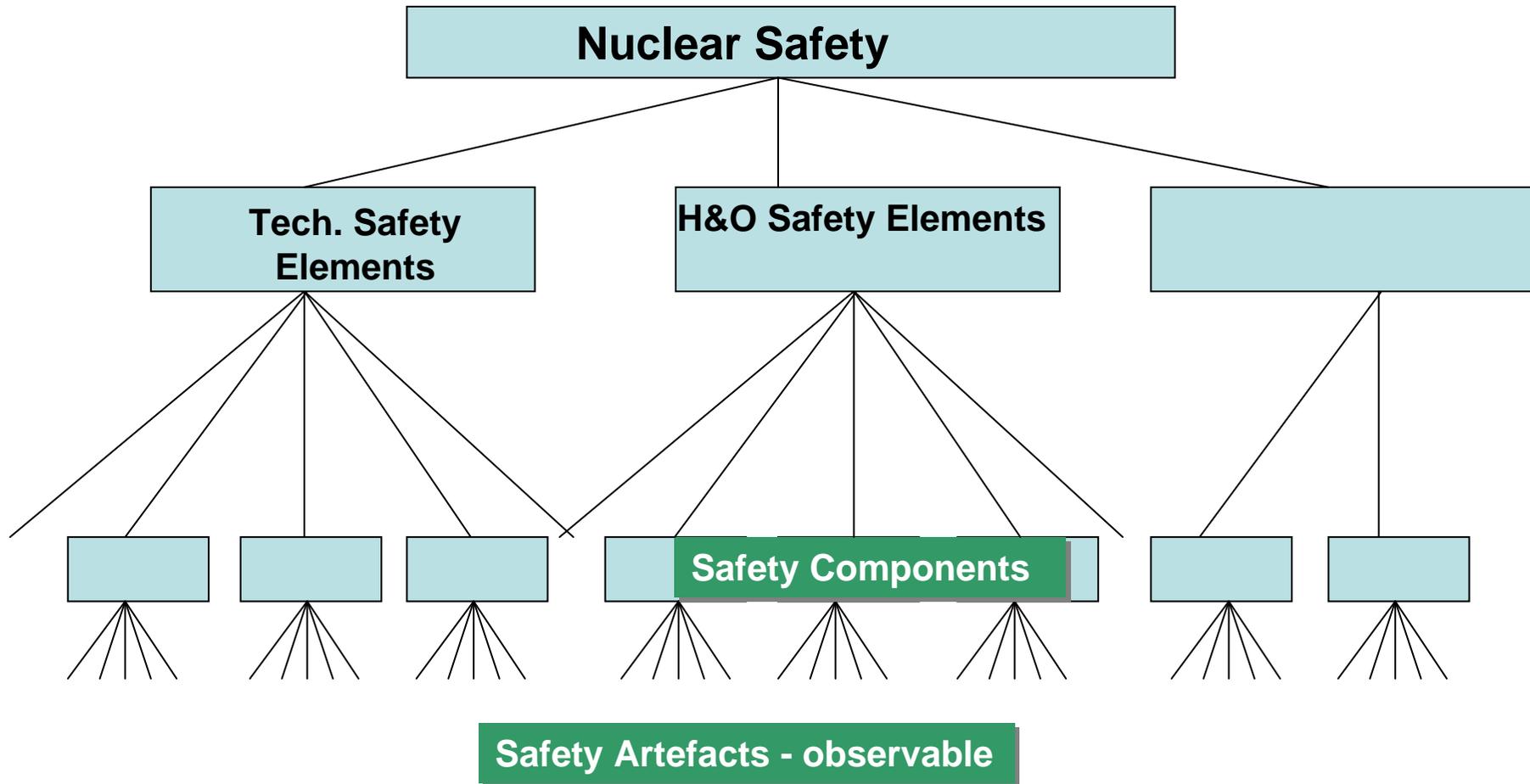


Nuclear Security Standards

- Safety and security issues are quite similar
 - A closer cooperation in the development of standards is of benefit for security and safety
 - Close cooperation between the national security experts is strongly recommended to reach a consensus upon regulation and oversight practice in the security area
- Security guides should go through a similar review and quality assurance process as the safety guides
- The security standards should be integrated in the proposed long-term structure of the safety standards



Oversight of Nuclear Safety





The IRRS Mission

It is:

- **International peer review against international standards**
- **An exchange of professional regulatory experiences**
- **A sharing of lessons learned and good practices**

It is not:

- Individual judgments or opinions
- Regulatory inspections
- Licensees review

IRRS missions should be performed periodically at least every 10 years.



Conclusion

- **The IAEA plays a key role in ensuring the safety of nuclear installations through its safety standards and its peer review services.**
- **Both are of utmost importance and should be enhanced and strengthened.**
- **Nuclear safety is a challenge for all of us and we have to do our best to improve it continuously.**
- **To reach the goal of “no nuclear accident” we have to work together to operate all nuclear facilities worldwide at the highest possible safety level.**