Health and Safety
Executive

HSE

IAEA General Conference 2008
Scientific Forum

A Harmonised Approach to Nuclear Safety and Security

Dr Mike Weightman

HM Chief Inspector of Nuclear Installations,

Health & Safety Executive

A Harmonised Approach to Nuclear Safety and Security

- Some Thoughts
- Some Experiences
- Some Ideas
- Some Questions

Predominately from a regulatory perspective

Is Harmonisation the Goal?

Harmonisation is a means to achieve the end goal, not the end goal in itself, which is the:

Protection of people and society

This goal is common for both safety and security

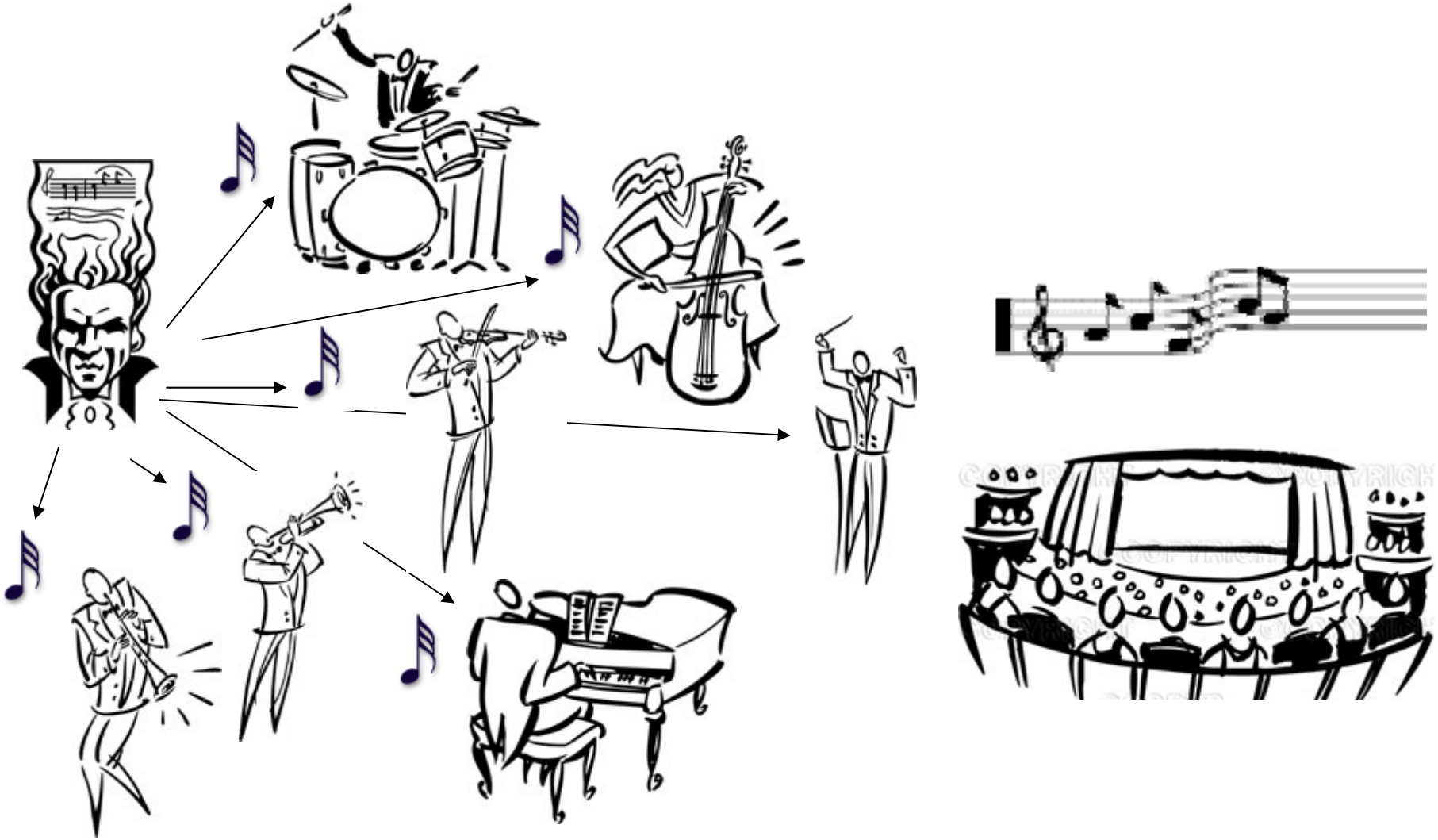
Protection of People and Society

- Common Purpose of Nuclear Safety and Nuclear Security Regulators
- Wider than just preventing harm to people
- Also about protecting fabric of society
- Balance of benefits against the risks – technology that that society tolerates
- UK approach – ALARP provides a means of finding the balance

What is Harmonisation?

- Not the **goal** – that's Protecting People and Society
- Not **Standardisation**
- Best means to **reach** the goal?
- Means of **continuously improving** nuclear safety and security through **challenge** and **learning** from each other
- Having **Complementary** and **Compatible** approaches and means to avoid **Conflicting** requirements

Harmonisation: Like an Orchestra



Common Purpose for 3S's but also Common Principles?

- Threat Assessments and Vulnerability Analyses
- Multiple Barriers
- Defence in Depth
- Segregation
- Diversity/Redundancy
- Single Failure Criteria
- Human Beings a critical common mode failure mechanism

And, Common Processes?

- Assessment
- Permissioning
- Inspection
- Investigation
- Enforcement

UK experience - pre April 2007

Separate Nuclear Regulatory Bodies:

Nuclear Safety - NII (HSE Nuclear Safety Directorate)

Nuclear Safeguards – UKSO

Civil Nuclear Security – OCNS

- Little day to day contact
- Post 9/1 much closer – OCNS threats analysis, NII vulnerability analysis & plant change control

UK experience - post April 2007

Joined-up Nuclear Regulatory Bodies:

HSE's Nuclear Directorate

Divisions 1, 2, & 3 - Nuclear Safety: NII

Division 2 - Safeguards: UKSO

Division 5 - Civil Nuclear Security: OCNS

- **Complementary** components (3S's), but recognising differences, e.g. different legislative basis, different background and experience of inspectors, different stakeholders, different constraints
- Provides internal means to **resolve conflicts**, **opportunities to learn** including challenges to established ways of working

Synergies in Nuclear Safety and Security Regulation

Experience so far in Nuclear Directorate:

- Combined enabling functions – finance, HR, admin. support, etc
- Common management systems
- Joined-up strategic regulatory planning
- Much closer working in all areas
- Moving towards still closer working at site inspection level (some co-located as one team)

Great Possibilities:

- Joined up emergency exercises/incident response exercises
- Assessment principles
- Regulatory processes, enforcement practices

Moving forward together at International Level

- As the world-wide interest in nuclear power grows it is important that effort are made to ensure that safety and security (and safeguards) are adequate in all countries – **a global approach**
- To maximise protection of people and society in this day and age **need** harmonised approaches to nuclear safety and security (and safeguards – **3S's**)
- Harmonisation of Safety and Security – for regulation, 3 Fronts: Purpose, Principles and Processes (**3P's**)

New reactor designs

- New designs of nuclear reactor have been and are being developed for a global market and are likely to be constructed and operated in many countries worldwide
- Some of these countries have a long history of nuclear power, others do not and may be embarking on a programme for the first time
- Many countries will need significant assistance in doing this
- In the UK we now have an approach that ensures harmonisation of 3S's regulatory requirements for new build – the Generic Design Assessment approach
- But do we have global guidance? - INSAG document for 2S's

Opportunities for Harmonisation?

- New international/global designs present opportunities for harmonisation of design standards through practical convergence
  - Is this possible if you harmonise 3S's?
- This needs a degree of international agreement on a wide range of topics but the sovereignty of Member States must not be undermined
  - Is this possible with the wide divergence of threats and national practices in security field?
- The difficulties of doing this should not be underestimated, but the success of IAEA in developing Safety Standards provides a good starting point

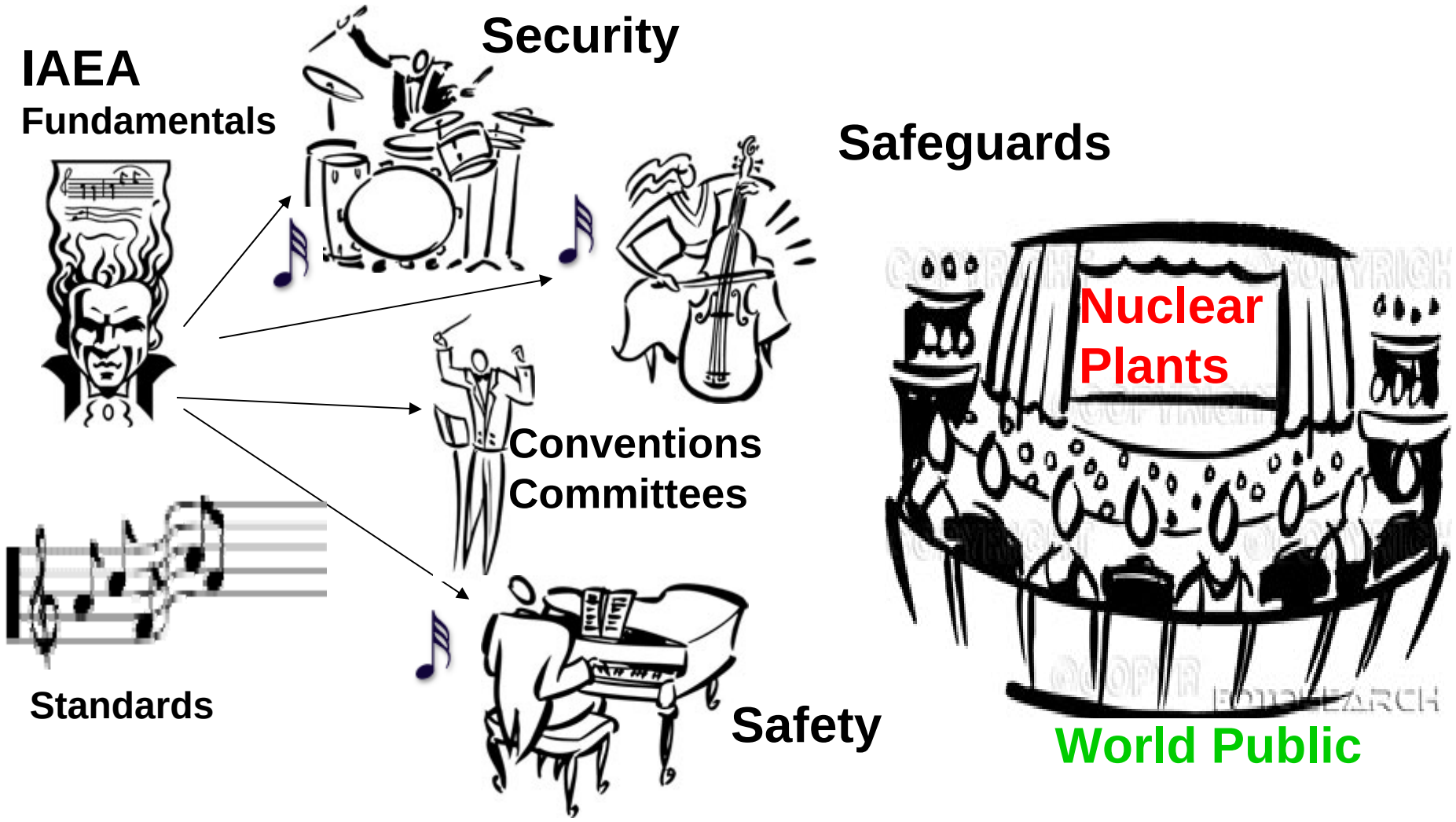
Way forward internationally

- Problems arise at **detailed level** from national regulatory systems reflecting historical development in specific countries, legal frameworks, national cultures, societal norms and needs, different technologies and nuclear accidents etc.
- To address this, we need to:
  - Develop **high level goals, which are technology neutral**, that all agree on from which detailed requirements can be derived
  - **Generalise principles functions and approaches** so they can be meet a wide range of regulatory systems without imposing a specific solution
  - Cover **all aspects of safety and security** from design through to decommissioning, including dealing with spent fuel and waste management

IAEA’s role as global leader

- IAEA has a role as global leader to promote continuous improvement, through harmonised approaches, in international safety, security and safeguards
- But how?
- The “composer and conductor” of harmonisation of standards for safety, security and safeguards

Harmonisation: Like an Orchestra – Led by IAEA?



IAEA's role as global leader

- Can it be the Composer and Conductor?
- Only if it is properly resourced and supported by Member States to fulfil these roles
- Worldwide nuclear renaissance and high standards of nuclear safety, security, and safeguards needs this.

Some Challenges/Questions on Harmonisation of 3S's

1. Can you have in the same operating organisation two separate cultures – a safety culture and a security culture?
2. Can you have harmonisation of the 3S's?
3. Do they have common Purpose, Principles, Processes from a regulator's perspective?
4. Can you resolve differences on openness and transparency?
5. Can security regulation be independent when it relies so much on information from government sources?
6. How can you have global standardised designs and supply without full openness between parties from different states?