
The Work of HM Nuclear Installations Inspectorate

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Rough Guide to the Nuclear Industry

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- What do we do ?
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- Brief History of NII - why it exists, who pays for it?
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- The people
- Work of an Inspector
 - Assessment
 - Site
 - Project
- Any Questions?

WHAT IS HSE ?



- UK Government Agency
- Statutory body, set up under Health & Safety at Work etc Act
- With statutory functions, responsibilities & powers

THE CHALLENGE



- HSE's Nuclear Directorate regulates the construction, commissioning, operation and decommissioning of nuclear facilities in Great Britain
- Nuclear Directorate includes:
 - HM Nuclear Installations Inspectorate
 - Office of Civil Nuclear Security
 - UK Nuclear Safeguards Office

WHAT DOES NII DO ?



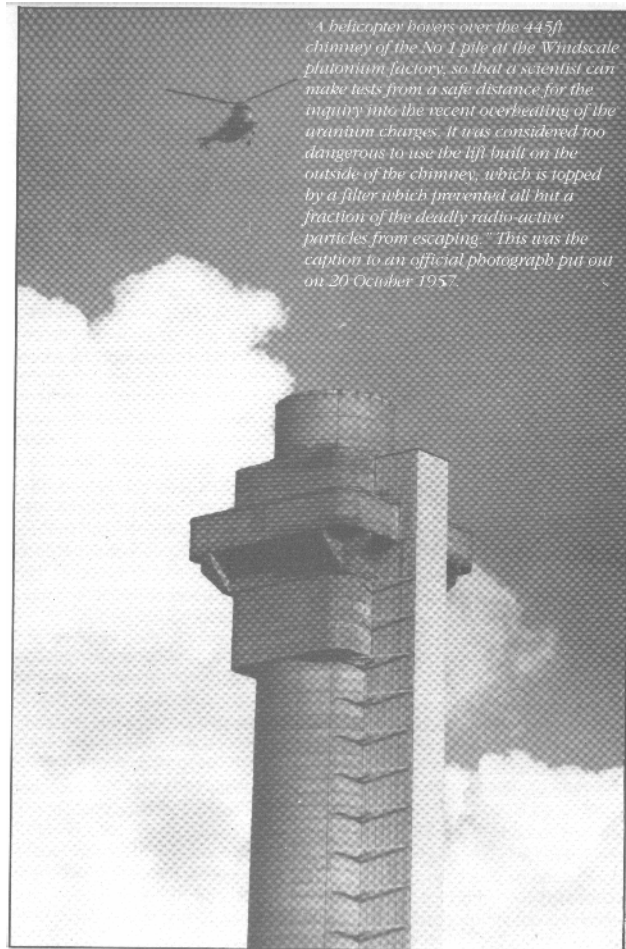
- Regulates safety & health at work (nuclear aspects) in Great Britain
- Regulates public safety from nuclear industry activities
- Regulates radioactive waste management
- Inspects work activities & promotes good practice at nuclear licensed sites
- Represents UK at international fora (IAEA, OECD/NEA, WENRA, etc)

What do we do?



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- NII responsible for ensuring licensees develop appropriate standards of nuclear safety by the granting of site licences (with conditions).
 - NII enforces those licences
 - NII Inspectors are law enforcement officers
 - Independent of Licensees and Government

Why were we formed?



The caption to the official photograph put out on 20 October 1957

“A helicopter hovers over the 445ft chimney of the No.1 pile at the Windscale plutonium factory, so that a scientist can make tests from a safe distance for the enquiry into the recent overheating of the uranium charges. It was considered too dangerous to use the lift built on the outside of the chimney, which is topped by a filter which prevented all but a fraction of the deadly radio-active particles from escaping.”

The Beginning



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- The Pile fire, the melting fuel and the release of radioactivity across northern England and Europe was the worst nuclear accident in our country's history
 - NIA 1960 introduced to regulate the emerging nuclear power programme (insurance driven) but excluded UKAEA
 - a licensing and insurance act it gave considerable powers to the minister to regulate the nuclear industry, to appoint inspectors and recover costs.
 - The Inspectorate of Nuclear Installations was born.

The Definition



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- In 1965 the NIA was amended and underpins nuclear safety regulation to this day
 - Prevents anyone from operating a prescribed nuclear installation without a licence.
 - Conditions could be attached to that licence
 - At that time the minister could write and enforce nuclear law but he delegated to the Chief Inspector
 - Later modifications passed the ministers powers to the HSE who delegate these to the Chief Inspector

The Expansion



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- Magnox Reactors • 1960
 - Magnox and AGR Reactors • 1965
 - Magnox, AGR, BNFL, Amersham, RR • 1970
 - Magnox, AGR, BNFL, Amersham, RR, SGHWR, CFBR and PWR • 1974
 - Government created HSC/HSE and NII became **independent** of the dept responsible for promoting the nuclear industry • 1975
INDEPENDENCE !!

Increasing Public Profile

- Thorp
- Sizewell B (PWR)
- Sellafield Audit
- Chernobyl
- 1979
- 1986
- 1986



Further Highlights



-
- Royal Dockyards
 - Hinkley Point C Enquiry
 - UKAEA - Harwell, Winfrith, Dounreay
 - The standard licence
 - Aldermaston/Burghfield
 - 1987 more people!
 - 1989
 - 1990
 - 1990 (35 conditions)
 - 1996 nuclear weapons sites

Post Millennia



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- Licence Condition 36 - management of change
 - NDA
 - New Build and Security
 - Stone Review
 - 2000
 - 2002/3 reorganisation
 - 2007 New Divisions for prelicensing and security
 - 2008 Review of regulation and potentially creation of a statutory corporation

Current Structure of NII



Nuclear Sites



Until recently 42 with 2 of these multi-plant sites
Also now have Studsvik, Cumbria
the Deep Geological repository
Government indicates possibly 10 new reactor sites
165 inspectors (should be 192)
With new reactors complement should be 230+

Sites NII regulates

- conversion & fuel fabrication – Springfields, Derby
- enrichment - Capenhurst, Urenco,
- reprocessing – Sellafield
- weapons - Aldermaston, Burghfield
- reactors – new, operating and decommissioning
- naval - Devonport, Rosyth, Barrow, Vulcan, Faslane, Coulport, Z-berths
- isotopes - Amersham
- research - Harwell, Winfrith, Dounreay, Ascot
- waste - LLWR (Drigg), Studsvik



ND/NII Role in National and International Scene



- Assistance in the formulation of national safety policy
- Liaison with other national regulators
- IAEA
OECD NEA
EU
- International Standards- nuclear safety standards codes

Inspectors - professional experience

- Specialists
- Chartered status (or equivalent)
- Significant experience in high hazard industry
- Wide range of disciplines

Inspectors - personal skills



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- Good communicators with good interpersonal skills
 - Authoritative
 - Assertive
 - Independent
 - Able to apply discretion
 - Appreciation of the work of other disciplines
 - Good level of knowledge of nuclear field
 - Patient?

Locations



- Bootle, Merseyside



- London
- Cheltenham

Work of an Assessment Inspector



-
- applies expertise and knowledge to the regulation of nuclear safety
 - challenges validity of licensee's safety case and its underpinning assumptions
 - directs the investigations of the site inspectors to ensure that all that is claimed for in the safety case is present correctly
 - follows all issues up to closure (auditable trail)
 - technical resource for work on national and international standards and advice on research issues

What is Assessed?

- Periodic Safety Reviews of existing plant
- Safety Cases for new facilities, support for more in-depth inspections
- Plant modifications
- Assessment led projects
- Licensee Strategies

Assessment activities



- Largely office based but moving to include more compliance inspection at site
- Visits to sites and headquarters
- Good understanding of the work of other assessors and the site/project inspectors
- Record findings

Site Inspector's Role

- Public Representative
- Must see risks are controlled
- Enforces the law consistently, impartially, courteously and fairly
- Is not responsible for safety on the site
- *Keeps safety representatives informed*
- Spends a third of time on site

What is Site Inspection for?

- Inspection of plant and procedures to confirm that they meet the requirements of the safety case
- Monitor compliance with site's arrangements to satisfy Licence Conditions, etc
- Observes activities and behaviours on the site
- Carry forward NII initiatives
- Monitor Licensees major initiatives
- Investigating events

Project Work



- Leading teams
- Collate assessments to form overview
- Tasks that are similar to assessment and Site Inspection
- Strategic Role

Life in the Office

- Plan inspections
 - 3 year programme
 - Licence Compliance
- Site event reports to HSE/Ministers, briefings, FOI requests, planning applications
- Report last site inspection
- Prepare for next site inspection!

The Rest of an Inspector's life



- Other sites:
 - emergency exercises, team inspections
- Licensee's HQ :
 - large projects & specialist meetings
- Training
- HSE & Other projects - UK & International
 - Give training, specific support, conferences, develop guidance and standards

Organisations we deal with

- Nuclear site licensees
- Site owners – Nuclear Decommissioning Authority, Ministry of Defence, British Energy
- Contractors - design, equipment suppliers, maintenance
- Other regulators
- NGOs
- Local authorities, government, international bodies, foreign regulators

Other regulators

- Conventional safety -
HSE's Field Operations Directorate
- Hazardous chemicals –
HSE's Hazardous Industries Directorate
- Disposals of radioactive wastes and
chemical discharges –
Environment Agency
Scottish Environment Protection Agency
- Department for Transport

NII's Enforcement Powers

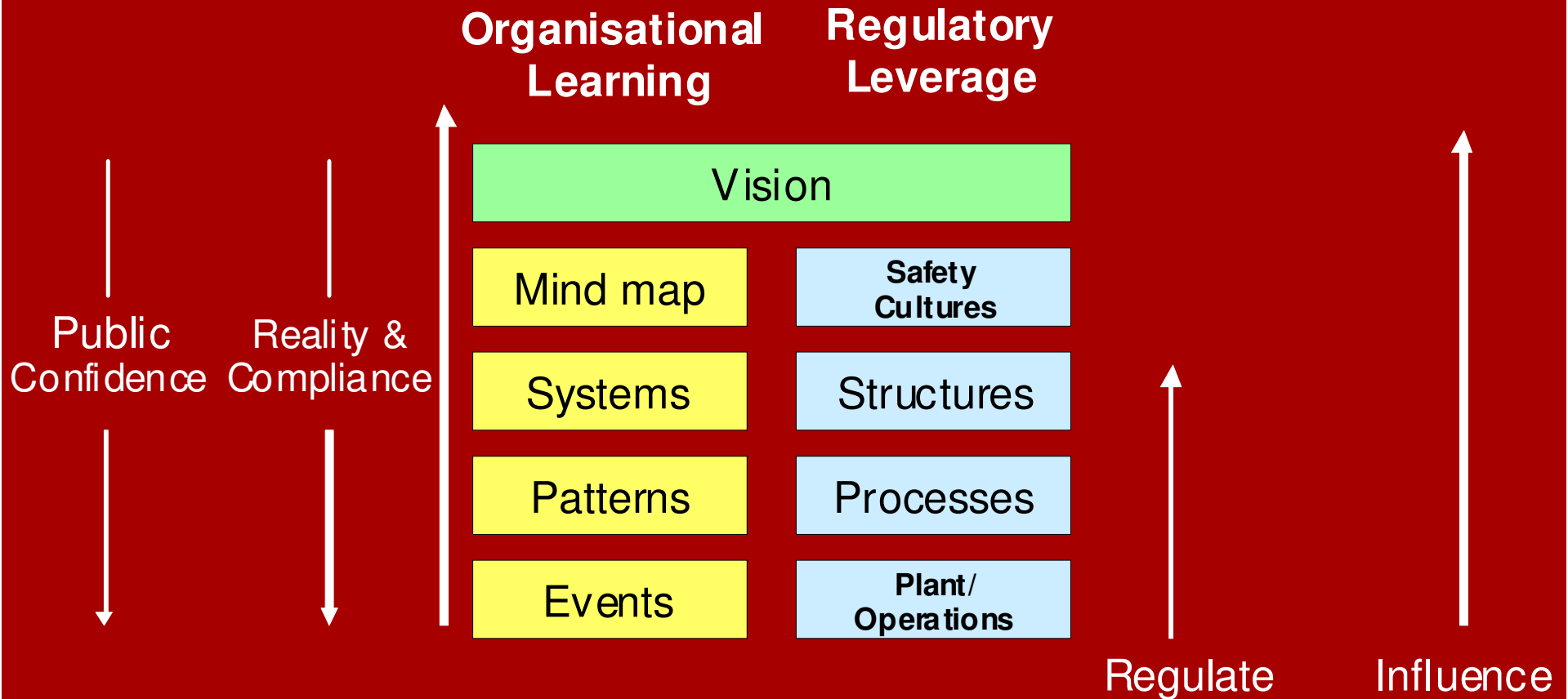
- Advice
- Letters - one or more safety problems
- Formal interview with senior staff
 - repeated safety problems
- Direction to shut down operation or review safety case
 - inadequate safety case
- Prosecution, Prohibition Notice or Improvement Notice - broken the law

Preferred Enforcement Method



- Using leverage model to influence the Corporate Body to change behaviours and mindset thus avoiding the need to carry out enforcement which is costly for all

Leverage through influence



TARGETED INTERVENTION STRATEGIES - DYNAMIC RESPONSE TO CHANGING ENVIRONMENT

Any Questions?