# THE UK APPROACH TO SECURITY OF RADIOACTIVE SOURCES

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## 1. Introduction

- Soon after September 11 2001, Environment Agency instigated a programme of **increased security** on premises holding the largest 150 radioactive sources in England & Wales.
- These went beyond “Basic Safety Standards” requirements for security intended to keep people safe from sources in normal use.
- Advice on physical protection measures was sought from UK Police forces newly created Counter-Terrorist Security Advisers (CTSAs) and from the nuclear site security regulator (Office of Civil Nuclear Security).
- The UK government later required these to be made into a **mandatory regime**.
- A rare regime started January 2006 based on the then IAEA Best Practice Guidance document (TECDOC 1355).
- UK environment agencies were given a new duty as the regulatory of security of radioactive sources.

## 2. The International Context

UK draws heavily on the IAEA:

- Based on TECDOC 1355 (2003): Deter, Detect, Delay, Respond
- Mainly **prescriptive approach**: simpler than performance-based approach used on nuclear sites
- A **graded approach** based on IAEA TECDOC 1344  
  *Categorisation of Radioactive Sources (2003)*
- Applies to IAEA source Categories 1 to 4
- Additionally, some measures apply to Category 5 radioactive sources

## 3. Typical Sources to be Protected

<table>
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<tr>
<th>Radiotherapy</th>
<th>Industrial Radiography</th>
<th>Industrial Gauges</th>
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## 4. A Legal Requirement

- **Now implemented** in the UK under the Environmental Permitting Regulations 2010.
- The enforcing body in England and Wales is the Environment Agency.
- New applicants for permits must have all security measures in place before a permit is granted, including:
  - A site security plan
  - An information security plan
  - Ability and options for upgrades of security to meet increased threat
  - Personnel background checks (good management practice)
  - Compliance with other relevant legislation for security and keeping and use of radioactive substances

Premises holding Category 1 sources must also have:

- Source protected by 2 physical measures
- Timely detection of unauthorised access
- Timely police response to a verified alarm

Premises holding Category 2 sources premises holding Category 3 and 4 sources have graded requirements.
- Even Category 5 sealed sources are under security regulation, but CTSAs are not involved at this level.

## 5. Why is the regime so rigorous?

We believe:

- The threat remains credible.
- Whilst radioactive sources are hazardous, their main impacts are:
  - Disruption, and
  - Denial of access to key areas or damage to iconic locations.
- Source strength is not the only issue.
- The consequences could be disproportionate to the hazards.

- Physical protection **standards** have been set by the Police experts.
- The requirements are published and made available only to those with a need to know.
- All regulatory power and responsibility is with the Regulators not Police.
- Police give advice on security of unsealed sources.

## 6. Trouble shooting during implementation

- Sometimes, with best intentions, security measures got out of proportion. E.g. safety (such as Fire Requirements must be prioritised over security). Usually, a sensible compromise is achievable. Everyone has learned and cooperated.

Some over-enthusiasm:

- Medical consultant who locked in patients to prevent kidnap of sources.
- Hospital staff worried they are expected to confront terrorists (Police role).
- Over enthusiastic – measures reduced productivity of a radiotherapy department – this needed to be rebalanced.

**Important to find the balance between safety, security and operability**

UK regime: **Necessary, Proportionate, Effective and Acceptable** to users.

## 7. Key Lessons learned

7.1. Security culture is key – for regulators and the regulated.
7.2. Radiation Protection (RP) professionals proved to be a very receptive and educated audience:

- They understood the radiological issues.
- They are a small community of professionals; know each other.
- So, information can be shared with them while maintaining security.

7.3. However, RP professionals needed educating about threat. They did not immediately understand that radiological hazards were not the only risk but also:

- **Social impacts (disruption)**
- Psychological effects
- Potential political consequences

7.4. Regulators, policemen and the regulated can go too far.

- It is vital to **find the balance** between security and operability.

7.5. The aim should be that the security regime enables practitioners to continue beneficial applications of radioactive sources despite the security climate, not preventing them due to the security climate.

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