

Chapter 5

Clearance and Sentencing Processes

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Introduction

- Provide a brief overview of Chapter 5, Clearance and Sentencing Processes
- Run through two simple worked examples to illustrate how the process Flowcharts are used

Structure of Chapter 5

- 14 clearance and sentencing flow charts
 - 11 flow charts for solids, 2 for liquids & 1 for gases
- Flowchart stem for a computer based UKAEA model that leads the user on from each decision to the next question
- Explanatory text for each flow chart to aid decision making and prompt consideration of all the potential issues

General Features

- Decision regarding history /provenance of the material is at the core
- Flowcharts prompt decisions and lead the user through to an outcome or on to succeeding flowcharts for further consideration
- Prompt consideration of BPM , ALARP and BPEO
- The flowcharts should be consider alongside the advice provided in the previous and succeeding chapters

Outcomes

- Excluded / Exempt / Clean
 - leads in to the waste management hierarchy of reuse, recycling or disposal
- RSA Authorised transfer off site
- RSA Authorised discharge
- Storage on site of radioactive material

Flowcharts – solids

- Solid items believed to be clean
- Surface contaminated items
- High surface area to volume items, materials and clothing X 3
- Potentially activated solids
- Potentially tritiated solids
- Loose solids – soils, sediments and sludges
- Porous solids – brick, concrete etc.
- Impervious solids with accessible surfaces
- Impervious solids with inaccessible surfaces

Flowcharts – Liquids and Gases

- Potentially Contaminated Aqueous and Non-Aqueous Liquids containing Sludges and /or Suspensions
- Potentially Contaminated Aqueous and Non-Aqueous Liquids
- Contaminated gases or vapours

Clearance of Solid Materials Believed to be Clean – *Flowchart 5.2*

- First flow chart for all solid materials
 - Key is Management, History and Provenance
 - Provenance used to make a judgement that the material has had no potential for activation or contamination.
 - If the history suggests not and appropriate measurements confirm that judgement then the Item is Clean
 - measurement is for reassurance only
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Clearance of Solid Materials Believed to be Clean – *Flowchart 5.2*

- If measurements reveal detectable activity above normal background levels consider flowcharts 5.3 – 5.10
- Similarly if history is not adequate then consider flowcharts 5.3 – 5.10
- **Important** -
 - Initiate suitable management controls
 - investigate implication of unexpected activation / contamination

Surface Contaminated Items

- All surface areas must be accessible for measurement
- If practical 100 % of surfaces should be monitored
- Consider against the reference surface clearance levels in Chapter 3
- Not high surface area to volume items
- Not potentially activated or tritiated items

High Surface Area to Volume Items

- Three options:
 - Assessment using specialist Bulk monitoring equipment able to confirm compliance with RSA and EOs
 - Assessment using suitable surface monitoring equipment able to confirm compliance with RSA and EOs
 - Assessment using equipment unable to confirm compliance with RSA and EOs
- Not for clearance of contaminated coveralls for disposal or laundering

And there's more... .

- Further flowcharts of a variety of solid material forms
- Two further flowcharts for liquids and 1 for gases
- All follow a very similar structure and require consideration of similar issues
- You will get the chance to use them in anger later

Sentencing Process - common elements

- Plan the sentencing process
- Consider discussions wider within the organisation and with local regulators
- Record process assumptions, decisions and data

Example 1 – Bagged Asbestos Waste

- History suggest potential activation
- Flow chart 5.2 point to 5.5
- History and screening measurement suggest that waste may still be suitable for clearance
- Plan sentencing process with appropriate assessment and decision points
- Consider informing the regulator
- Process – clean, exempt/excluded or disposal under RSA authorisation

Example 1 – Bagged Asbestos Waste

- If asbestos provenance suggests a potential for contamination
- Consider flow charts 5.6 *potentially tritiated solid* and 5.8 *potentially contaminated porous solids*
- Reconsider sentencing process, assessments and decision points

Example 2 - Oil

- Flowchart 5.1 points to either 5.1.1 or 5.1.2
- Flowchart 5.1.2 -no visible insoluble solids
- History and previous measurements
- Consider measurements against normal background
- Sentence

