

# *CEWG - Code of Practice*

## Regulatory Background



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## Legislation

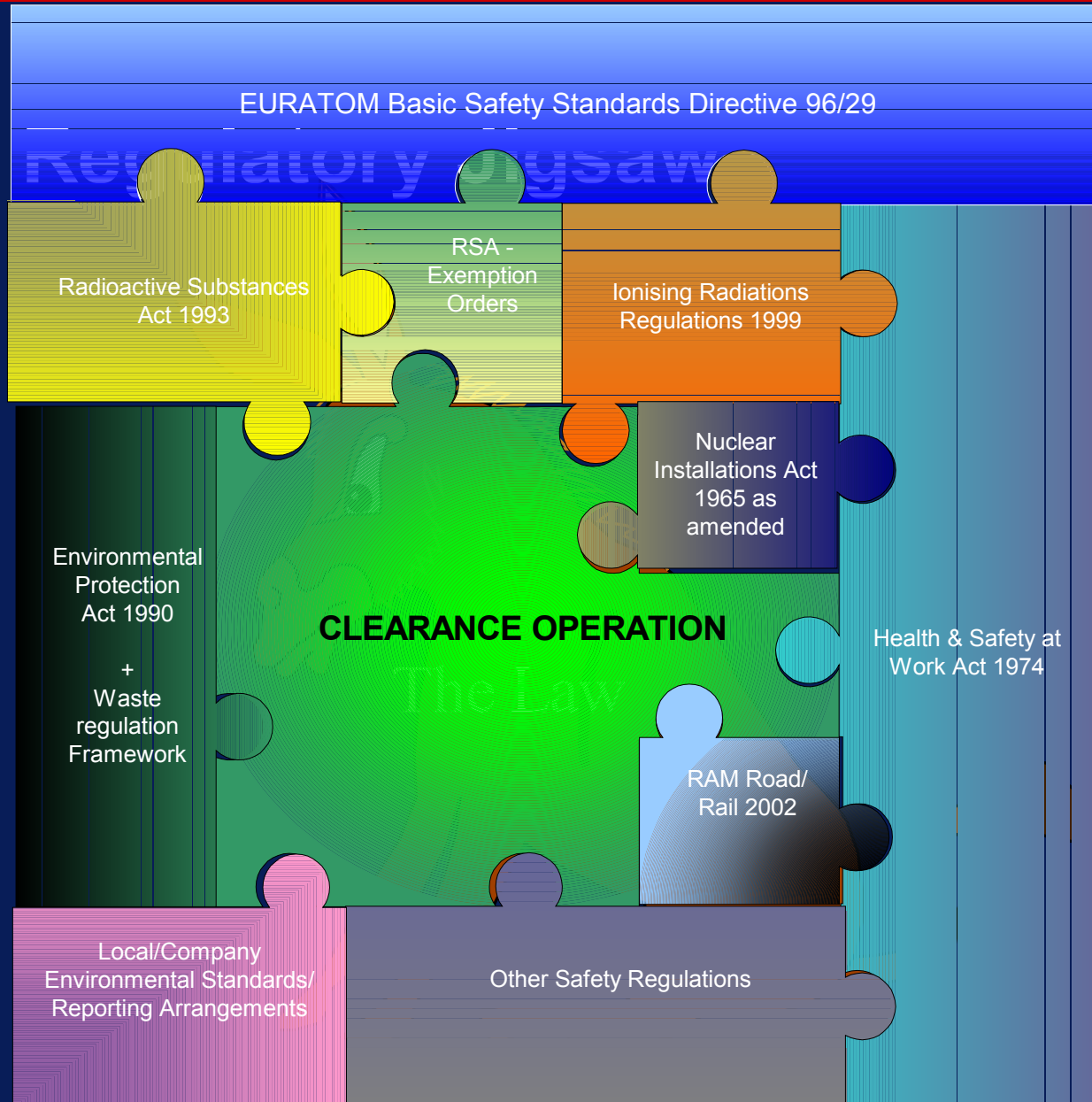
If it can't be interesting at least keep it short

What we'd like -

- Consistent, risk based regulatory framework

What we've got....

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## **Nuclear Installations Act 1965 (as amended) - Licence Conditions**

Only applicable to licensed sites

Changes application of parts of RSA

36 Licence conditions - to maintain adequate arrangements

:-

- LC5 - for the keeping of records of all nuclear matter (including excepted matter and radioactive waste) consigned from the site.
- LC32 - for the minimisation SFARP of the rate of production and total quantity of RA waste accumulated on a site, for recording that waste, seeking approval of the arrangements. If specified not to accumulate it in a place not specified the the Executive
- LC33 - Licensee shall dispose of RA waste as directed by the Executive in accordance with an Authorisation granted under the RSA.

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## Health & Safety at Work Act 1974 & other Safety Regulations

### Basic requirements

- Safe working practices SFARP
- Responsibility for yours and others safety
- Managerial responsibility
- Other specific regulations - e.g. Ionising Radiations regulations

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## **IRR-99**

- Limits on concentrations/amounts of radioactive materials requiring notification to HSE - radionuclide specific
- Dose restriction (limits) and ALARP requirement
- Designated areas + Local rules
- Risk assessment
- Workplace monitoring / dose assessment
- Monitoring and control of movement of articles and items/equipment to and from designated areas.
- Contingency plans

## **Euratom Basic Safety Standards**

### Basic requirements - *inter alia*

- community wide standards to protect the health of workers and the general public
- applies to production, processing, handling, use, storage, import/export, and disposal of radioactive substances
- clearance levels established by MS 'competent authorities'

## Euratom Basic Safety Standards II

- Radionuclide specific - across EU except 'in exceptional circumstances' a MS may use values consistent with Basic Criteria of Annex1.
- Annex 1 - Basic Criteria
  - Effective public dose of exempted practice 'of the order  $10\mu\text{Sv}$  or less' and
  - either collective effective dose  $<1\text{manSv}$  or assessment of optimisation of protection shows exemption is optimum option.

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## **RSA-93**

- Primary legislation relating to Keeping, Use, Accumulation and Disposal of Radioactive Material
- Administered by the Environment Agencies (SEPA, EA)
- Remit on Licensed Sites limited to Disposal of RA material
- RSA-93 (and RSA-60) defined values for specified elements below which the substance is not classed as radioactive and registration was not required. Excluded.
- Other materials declared radioactive as a result of fission, neutron or ionising radiation or contamination with these  
i.e. Any Substance Containing Man Made Radionuclides subject to some or all of the Acts provisions
- Exemption orders provide for derogation of some of the requirements

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## Exemption Orders

- Predominantly early 1960's
- 17 Exemption Orders available, specifying classes of premises, undertaking, specific materials or apparatus which do not need registration or authorisation
  - » Phosphatic Substances and Rare Earths etc. EO, Precipitated Phosphate EO, Uranium and Thorium Compounds EO, Geological Specimens EO, Lead EO, Natural gas EO, Luminous Articles EO, Testing Instruments EO, Smoke Detectors EO, Gaseous Tritium Light Devices EO, Electronic Valves EO, Hospitals EO, Schools EO, Exhibitions EO, Waste Closed Sources, Storage in Transit EO, Substances of Low Activity EO
- Two significant orders
  - SoLA, PSRE
- Broadly compatible with BSS requirements

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## **PSRE EO**

Solid materials, essentially insoluble and RA as a result of RSA Schedule 1 elements only-

unconditionally exempt @  $<14.8\text{Bq/g}$

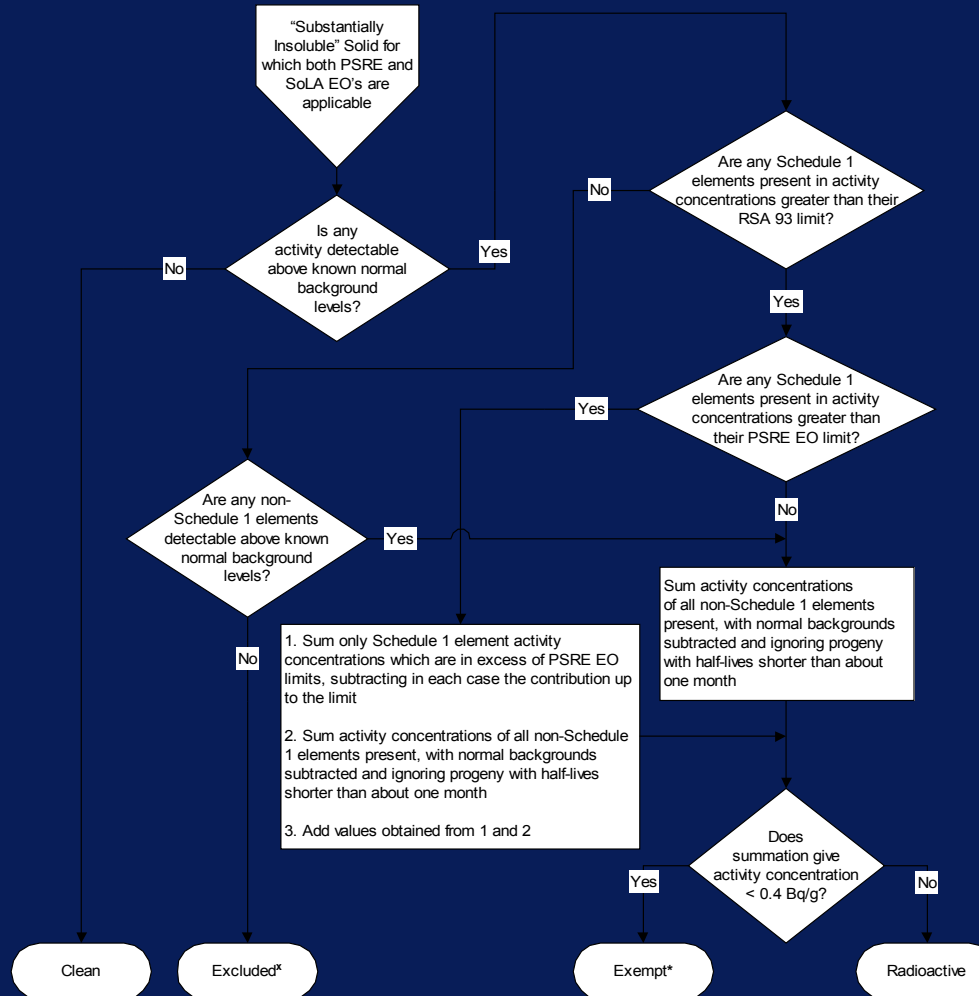
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## **Substances of Low Activity Exemption Order (SoLA)**

- Exemption from requirements viz. Authorisation for keeping, use and disposal under RSA, provided
  - gaseous waste  $T_{1/2} < 100s$
  - organic liquid waste, containing C-14 or H-3 only,  $< 4Bq/ml$
  - solids essentially insoluble in water and  $< 0.4Bq/g$
- Specific Activity Exemption (Bq/g)
- Measured at the point it becomes waste.

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Flowchart 2.1 - Application of Exemption Order Limits to a Substantially Insoluble Solid Item, Material or Waste for which both the Phosphatic Substances, Rare Earths, etc Exemption Order (SI 2648 1962) and Substances of Low Activity Exemption Order (SI 1002 1986) are Applicable



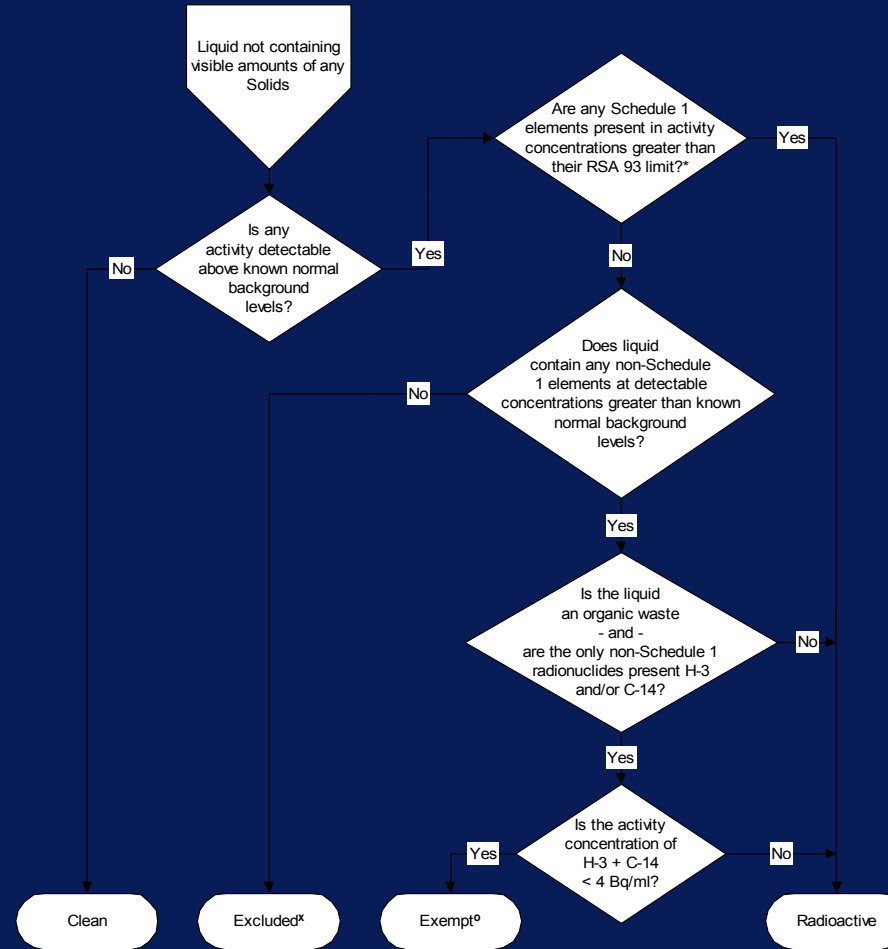
\*Excluded from regulation under RSA 93

\*Exempt from the requirements of RSA 93 for registration as a material or exempt from authorisation for accumulation or disposal as a waste



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Flowchart 2.2 - Application of RSA 93 and Substances of Low Activity Exemption Order (SI 1002 1986 and SI 647 1992) Limits to a Liquid not Containing Visible Amounts of any Solids



\*Excluded from regulation under RSA 93

\*The higher Phosphatic Substances, Rare Earths, etc Exemption Order (SI 2648 1962) limits (instead of RSA 93 limits) can be applied here to liquid materials, but not to liquid wastes (in the absence of non-Schedule 1 elements this will be exempt, not excluded)

\*Exempt from the requirements of RSA 93 for registration as a material or exempt from authorisation for accumulation or disposal as a waste



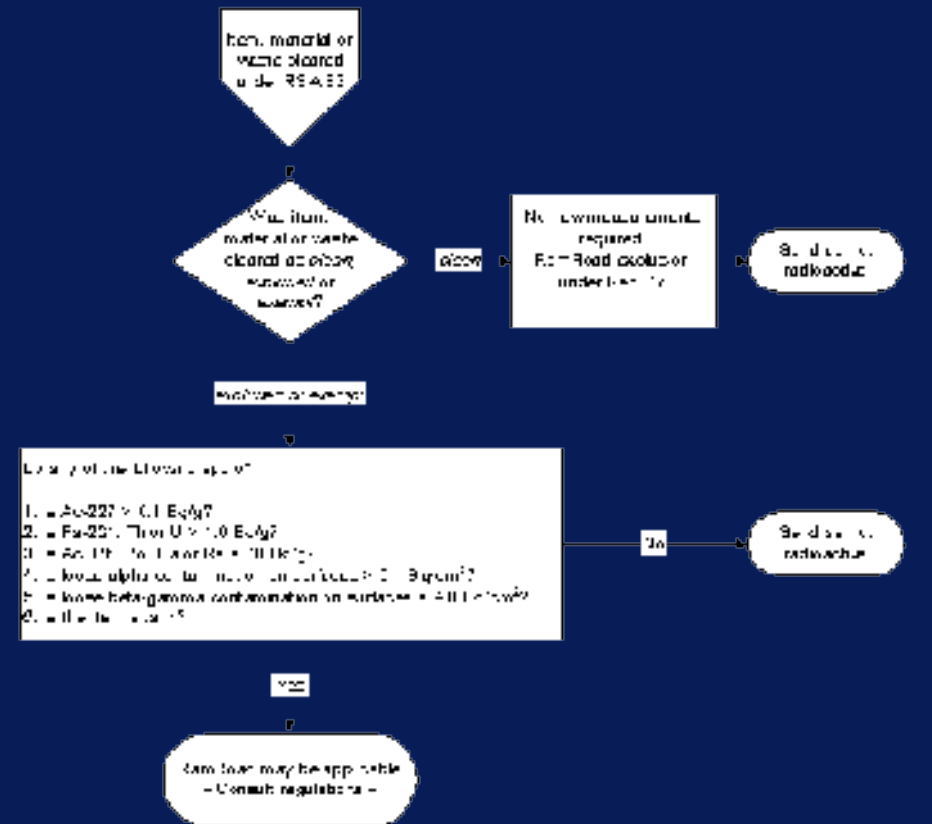
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## RAMRoad/Rail 2002

- Complicated legislation controlling the transport of radioactive material by road or rail.
- Utilises the same bulk radionuclide specific activity limits as IRR-99.
- Controls on Surface Contamination (SCO1)
  - ALARP
  - $<4\text{Bq/cm}^2$   $\beta/\gamma$ ,  $0.4\text{Bq/cm}^2$   $\alpha$  over  $300\text{cm}^2$
  - Re-use of tanks/bulk carriers  $<4\text{Bq/cm}^2$   $\beta/\gamma$ ,  $0.4\text{Bq/cm}^2$   $\alpha$  over  $300\text{cm}^2$
- Complex treatment of the additivity for different radio-elements and radionuclides, the relevance of loose and fixed contamination and inclusion and exclusion of natural background.
- There are specific conditions where cleared materials/items MAY still fall under RAMRoad ....

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Application of RAMRoad to transport of items, material or waste cleared as excluded, exempt or clean under RSA93 or EO's.



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## **EPA 1990 - Waste regulation**

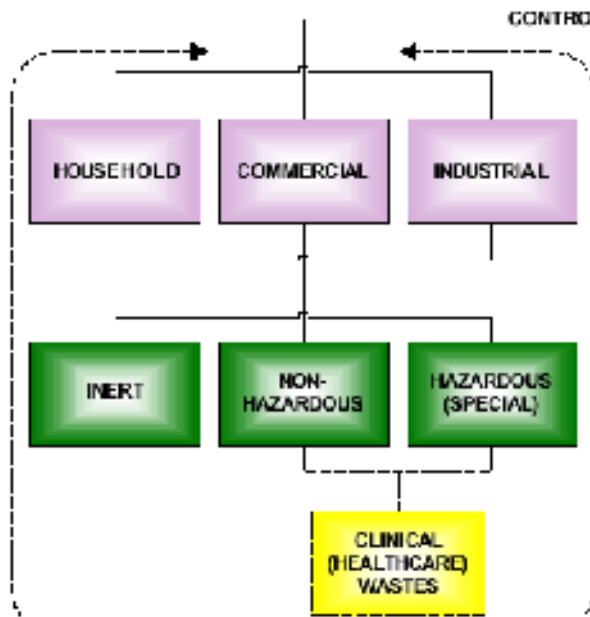
- Regime for controlled and special wastes (not radioactive)

### English Legislation - Waste

Control of Pollution (Amendment) Act 1989  
The Landfill (England and Wales) Regulations 2002  
Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations 1991, SI 1624  
Environmental Protection (Duty of Care) Regulations 1991, SI 2839  
Controlled Waste Regulations 1992, SI 588  
Transfrontier Shipment of Radioactive Waste Regulations 1993, SI 3031  
Controlled Waste (Amendment) Regulations 1993, SI 566  
Waste Management Licensing Regulations 1994, SI 1056  
Transfrontier Shipment of Waste Regulations 1994, SI 1137  
The Waste Management Licensing (Amendment No. 2) Regulations 1995  
The Waste Management Licensing (Amendment) Regulations 1996  
Special Waste (Amendment) Regulations 1996, SI 2019  
The Waste Management Regulations 1996  
Special Waste Regulations 1996, SI 972.  
The Waste Management Licensing (Amendment) Regulations 1997  
Special Waste (Amendment) Regulations 1997, SI 251  
Producer Responsibility Obligations (Packaging Waste) Regulations 1997, SI 648  
The Packaging (Essential Requirements) Regulations 1998, SI 1165  
Controlled Waste (Registration of Carriers and Seizure of Vehicles) (Amendment) Regulations 1998, SI 605  
The Waste Management Licensing (Amendment) Regulations 1998  
The Waste Management Licensing (Amendment) Regulations 1998  
The Environmental Protection (Prescribed Processes and Substances Etc) (Amendment) (Hazardous Waste Incineration) Regulations  
Producer Responsibility Obligations (Packaging Waste) (Amendment) Regulations 1999, SI 1361  
Producer Responsibility Obligations (Packaging Waste) (Amendment) (No. 2) Regulations 1999, SI 3447  
The Waste Management Licences (Consultation and Compensation) Regulations 1999  
Animal By-products Order 1999, SI 646  
Produce Responsibility Obligations (Packaging Waste) (Amendment) (England and Wales) Regulations 2000, SI 3375.  
The Animal By-Products (Amendment) (England) Order 2001, SI 1704  
The Animal By-Products (Amendment) (England) Order 2001, SI 1704  
Special Waste (Amendment) (England and Wales) Regulations 2001 SI 3148

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## UK Waste Classification System



**ENVIRONMENTAL PROTECTION ACT  
1990 PART II**

Controlled Waste Notes:

Excludes:

Gas and waste covered by other legislative regimes, e.g. LPG, BPG

Effluent discharges controlled by other legislative regimes, e.g. controlled waters, discharge controls, and land fill controls (e.g. air quality)

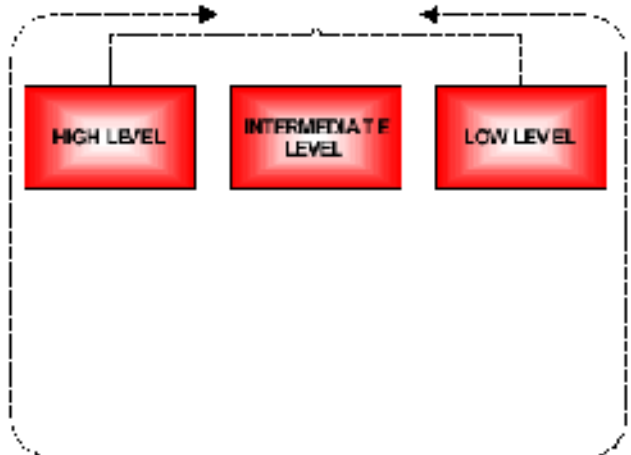
**NON-CONTROLLED WASTE**



Non-Controlled Waste Notes:

Agricultural wastes are seen to be regulated under the EP/100 regime

**RADIOACTIVE WASTE**



**RADIOACTIVE SUBSTANCES ACT 1993**

Radioactive Waste Notes:

Certain Exemptions Occur, e.g. vi

Certain RW wastes will contain controlled substances which will also have to be Special Wastes, e.g. asbestos, ions in heavy metal. This will mean the waste will be dual regulated as Special Waste and RW waste

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## Summary

- Wide range of safety and environmental legislation imposes on clearance operations
- Some historical/ some EU derived risk based.
- No consistent designation of 'radioactive'
- Continued use of SoLA 0.4Bq/g for anthropogenics + PSRE + RSA Sch.1
- Care necessary with interactions with other legislation e.g.. Non-RA waste regime.

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## **Summary continued.**

In law clearance can only be made against Specific Activity (Bq/g) limits - RSA.

Dose/Risk ALARP constraints continue to apply.

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