



European Commission

Main Focuses of the New EURATOM Basic Safety Standards

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Unit TREN H.4

Radiation Protection

Rôle of the EU

- Euratom Treaty (1957):
 - allow the development of nuclear energy while protecting the Health and Safety of workers and members of the public
- Establish uniform Basic Safety Standards
 - and ensure that they are applied
 - transposition; implementation; infringement procedure
- Ensure the protection of the “environment”
 - “air, water, soil”
- Research (fission/fusion Framework Programmes)
 - radiation biology

Rôle of other Agencies

- UNSCEAR
- ICRP
 - since 1959, ICRP recommendations have been promptly transposed in Euratom legislation
- IAEA
 - first and later IAEA standards very similar to Euratom
 - no co-sponsorship as a consequence of the binding nature of EU Directives

Co-sponsorship of the BSS

- Common basis: ICRP
 - need for international consensus
- IA-Standards not directly applicable
 - through ILO Convention
 - through EURATOM Directives
 - through national legislation, regulatory authorities
- Focus:
 - IAEA: whole world, developing countries
 - EC/NEA: industrialised nations
 - WHO/PAHO: medical applications; health policy
 - UN family: FAO, UNEP
- Equal partnership

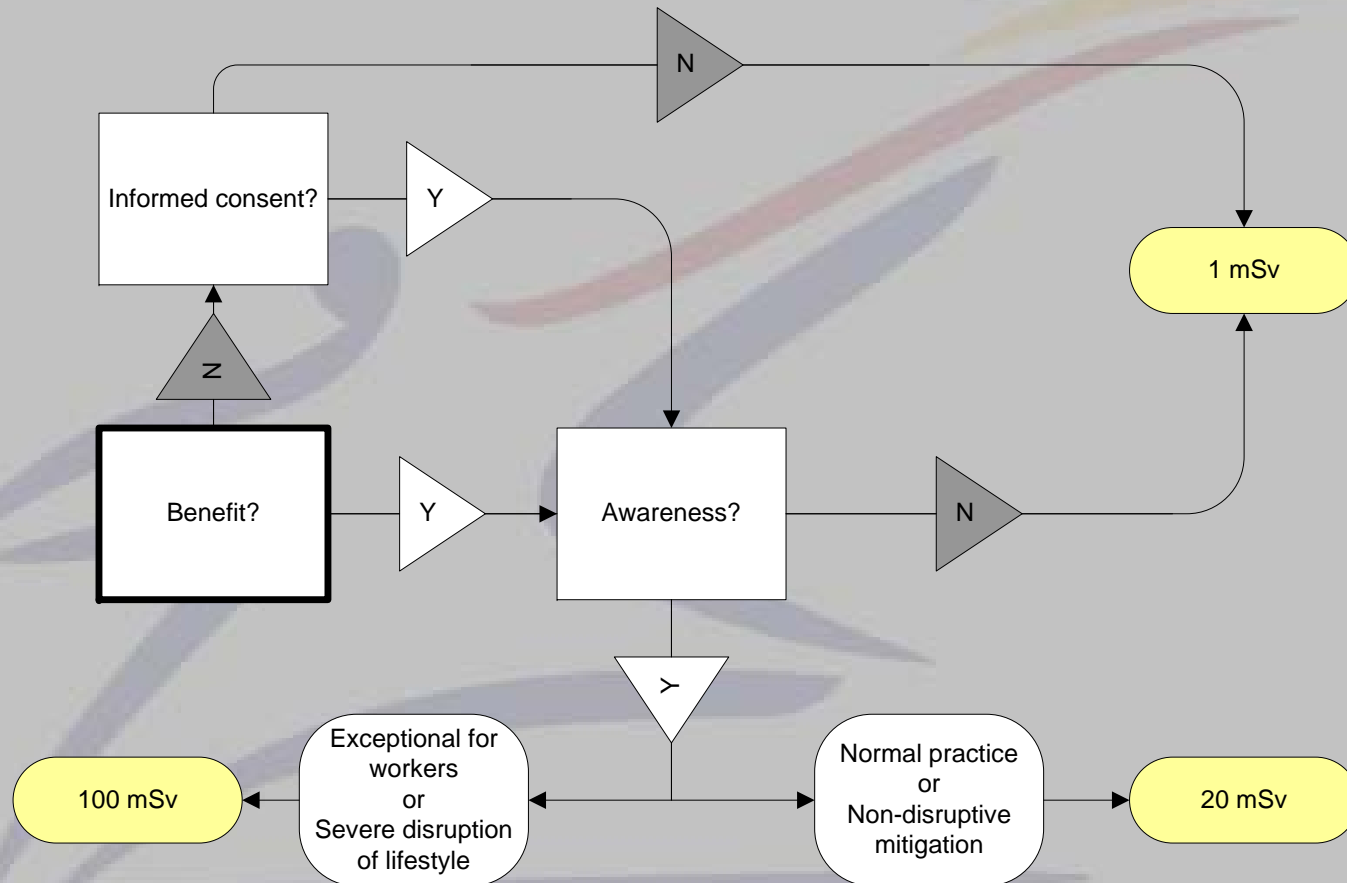
Impact of new ICRP recommendations

- Distinguish between exposure situations:
 - Planned
 - include identified NORM industries
 - Existing (Radon, long-term post-accidental)
 - Emergency
- Practices and intervention
 - Types of action, not situations
- “Enterprises”
 - Any *planned activities* to the extent that these activities involve the introduction or handling of radiation sources or radioactive substances, or affect exposure pathways from existing sources or radioactive substances. An enterprise may be *undertaken either in view of a resulting benefit or in order to intervene in existing exposure situations* with a view to reducing the exposures

Constraints/Reference Levels

- Societal basis (bands of constraints):
 - equity (dose distribution)
 - information/training, individual dosimetry
 - involvement in the management of exposures
 - benefit (individual, societal)
- Source related prospective tool for optimisation
- Generic basis:
 - generic optimisation, best practice/past experience
 - allowance for other sources
- Basis for intervention plans on the basis of:
 - Reference levels in terms of total projected dose
 - Action/intervention levels in terms of avertable dose, for individual considered types of action

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Constraints/Reference Levels

- Constraints:
 - occupational
 - tool in the optimisation process
 - responsibility with the operator/employer
 - members of the public
 - licencing authority: allow for multiple sources
 - compliance with dose limit is the responsibility of the authorities
 - actual exposures often far below the constraints
 - » *representative person*
 - ignore exposures under a constraint $< 10 \mu\text{Sv}$?
 - constraint for long-term exposures (waste disposal): 0.3 mSv?
 - hypothetical exposures
 - comforters and carers

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Constraints/Reference Levels

- Reference levels:
 - radon in dwellings/workplaces
 - emergency situations: 100 mSv
 - emergency planning: strategy to avoid exposures above the reference level and to optimise intervention
 - long term after an accident (existing situation):
 - evolving reference level starting at criterion for relocation
 - endpoint 1 mSv per year
 - distinguish between *collective* intervention, and action at individual level

Revision of Euratom BSS

- Allow for ICRP/IAEA
- More binding requirements on:
 - Natural radiation sources
 - Criteria for exemption and clearance
 - Cooperation between MS for emergency planning and response
- Review of regulatory control system
 - Graded approach to regulatory control
- Consolidation of existing Directives

Consolidation of Euratom BSS

- Better legislation: simplification of “acquis” by codification
 - BSS Directive 96/29
 - Directive 97/43 (MED)
 - Directive 89/618 (Public Information)
 - Directive 90/641 (Outside Workers)
 - Directive 2003/122 (HASS)
- Revision of BSS Directive 96/29
 - Anticipate consolidation or immediate recasting
 - Council adoption of modifications only
- Radon:
 - Commission recommendation 90/143/Euratom

Radon

- Requirement for a national Action Plan
 - All sources: soil, building materials, water
 - Definition of *radon prone areas*
 - Means and methodology for surveys
 - Reference levels for existing dwellings, workplaces, public buildings
 - Maximum levels: 400 Bq m⁻³, 1000 Bq m⁻³
 - Building codes (200 Bq m⁻³)
- Provide information to:
 - House-owners/occupants
 - Upon real-estate transactions
 - Building profession

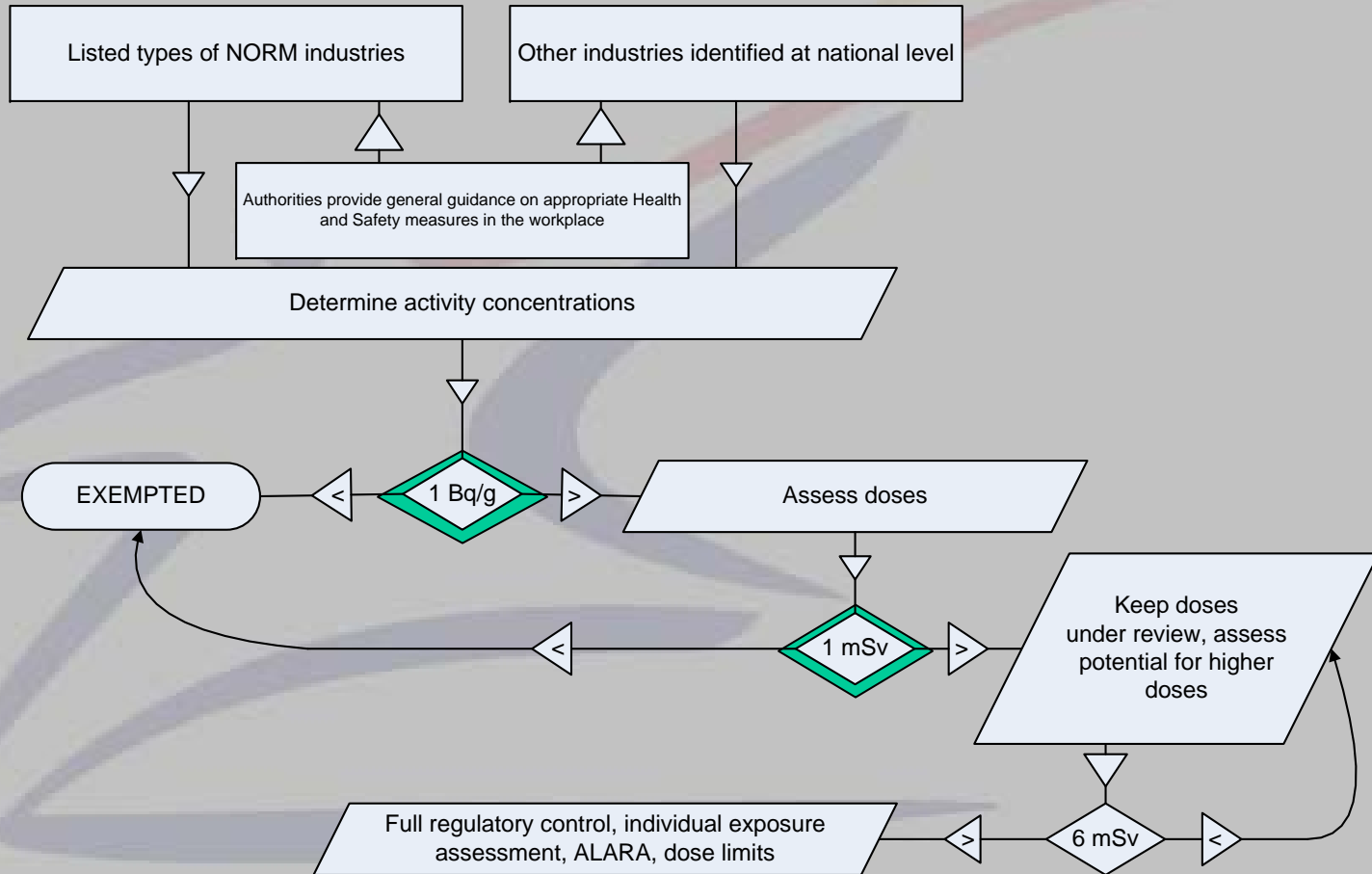
Radon

- Occupational exposure:
 - Radon measurements in
 - radon prone areas
 - underground workplaces
 - NORM industries
 - Reference level 500-1000 Bqm⁻³
 - Account for occupational exposure above 500 Bqm⁻³
 - Include radon as an exposure pathway for NORM industries?
 - Above 1000 Bqm⁻³ possible need for controlled areas
 - e.g. waterworks, spa's, ...
- Public buildings: workplaces
 - Except high residence times (schools, ...)

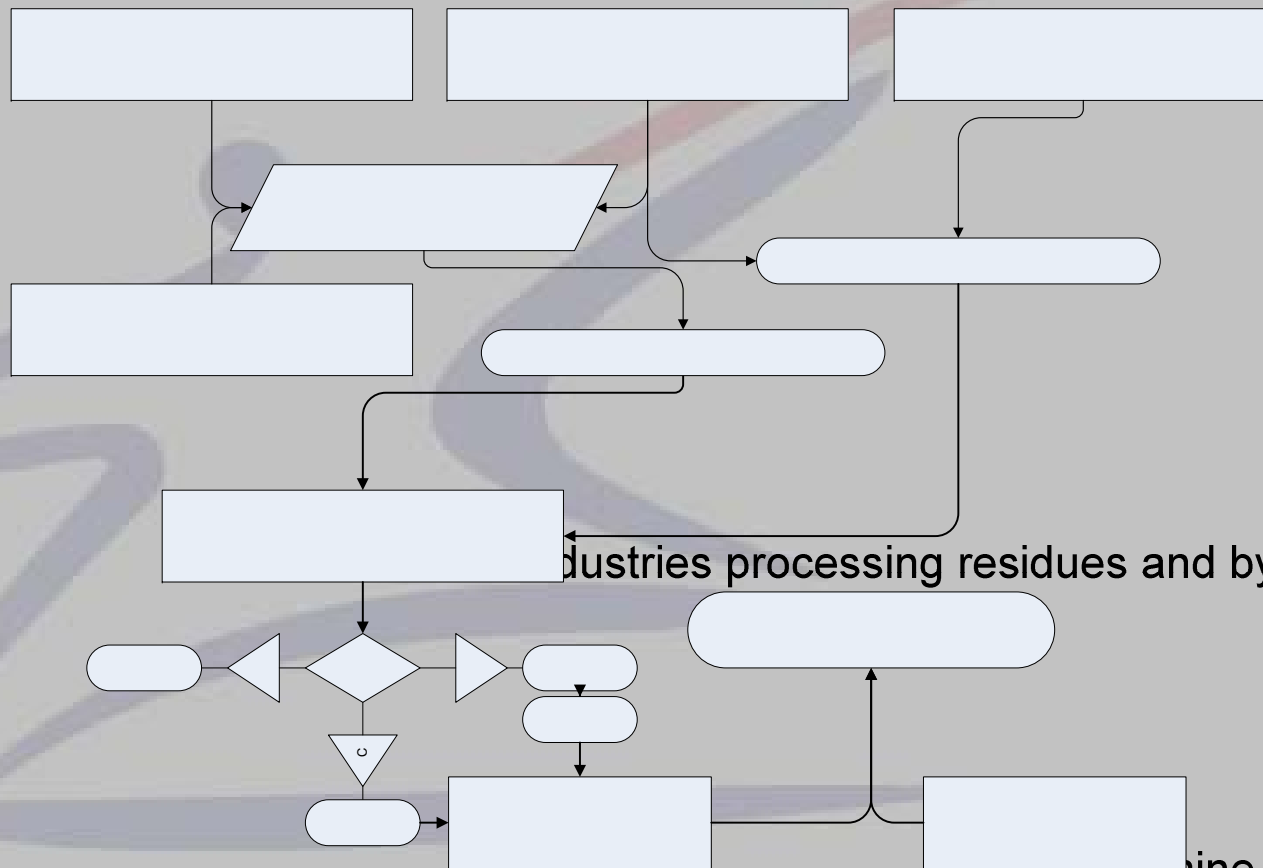
NORM-industries

- “Positive list” of types of industries
- Activity concentrations above 1 Bq/g (10 Bq/g for K-40)
 - higher values for segments of decay chain
 - not applicable to (recycling in) construction materials
 - Include guidance in RP 112
 - Characterise into 3 classes of materials (A-C) by activity index I
 - lower values where appropriate in specific cases
- Assessment of doses to workers
 - 1-6 mSv: keep under review /ALARA
 - > 6 mSv: controlled areas
- Assessment of effluents and disposal of waste
 - constraint of 0.3-1 mSv (including drinking water?)
 - recycling rather than radioactive waste disposal

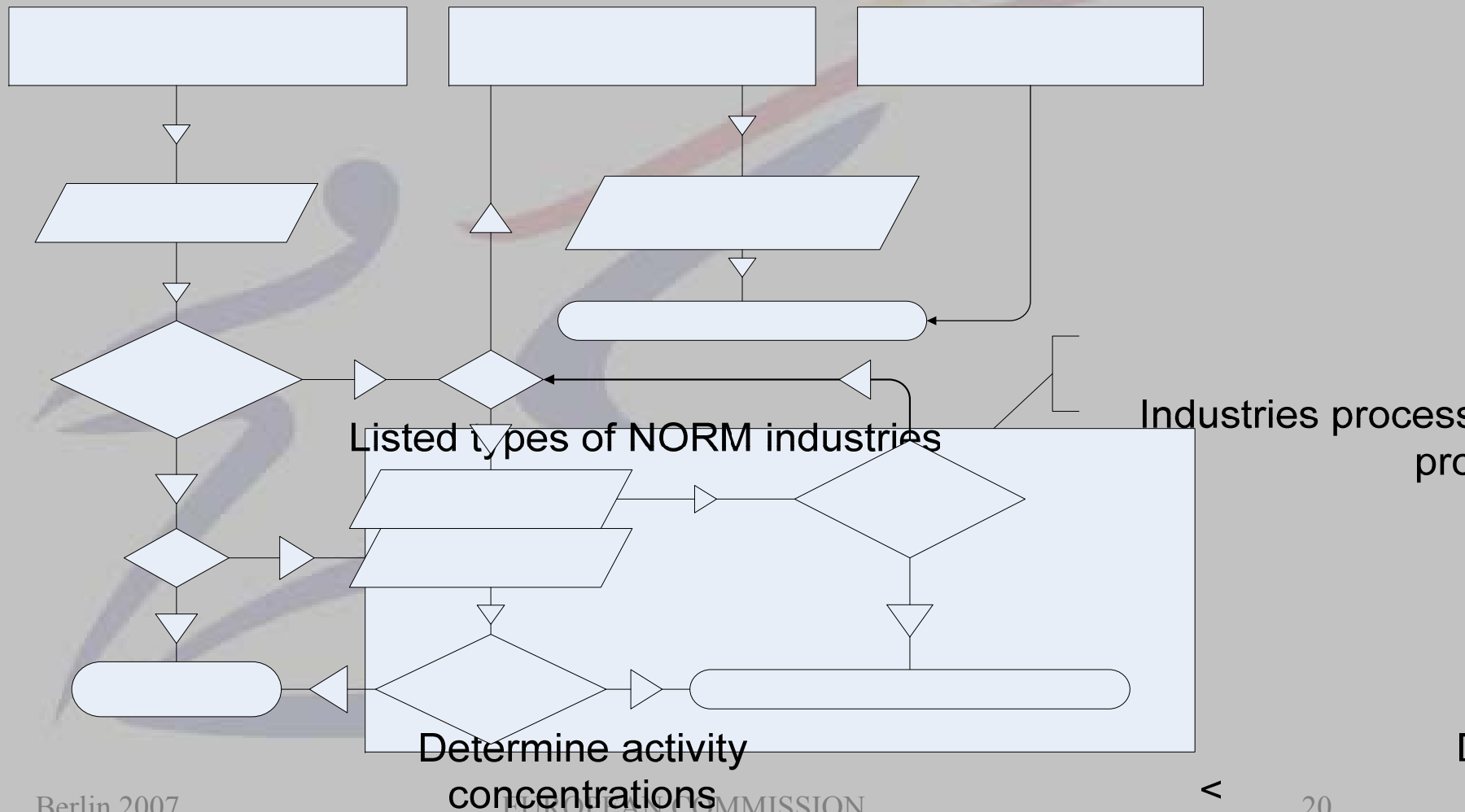
NORM industries



Building Materials



Recycling/building materials



Exemption and clearance

- Same levels for both concepts, including for transport
 - basis: RS-G 1.7 (close to RP 122)
 - however: a study will be launched to investigate the differences
- Higher values (MS's, not harmonised) for:
 - Specific practices
 - Specific materials (e.g. metals, small amounts of building rubble)

Regulatory control

- Graded approach:
 - Exemption
 - Notification and registration
 - Cf. current « authorisation in cases of a limited risk, in accordance with conditions laid down in legislation »
 - Prior authorisation/licensing
 - Licensing requirements for different types of practices

Conclusion

- Time to revise the BSS
 - And to consolidate all existing legislation
- Integration of natural and artificial sources
- Impact of new ICRP recommendations
 - Especially for emergency planning and response
- Harmonisation/uniformity versus flexibility
- Offer a solid overall framework
 - Little need for amending national legislation