Example of establishing the recycling of scrap metal as a waste management option within German regulations

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Overview

- Clearance in Schleswig-Holstein, Germany
- International obligations and national law
- Release of metal after licenced melting
- Practical experiences
- Conclusion
**Competent authority and independent experts**

**MELUR** is responsible for the nuclear licensing and supervising in Schleswig-Holstein:
- NPP Brokdorf
- NPP Brunsbüttel
- NPP Krümmel
- Research Reactor HZG

"... the authorities in charge may consult authorized experts." (Atomic Energy Act § 20)

E.g. **TÜV NORD** for clearance (chosen by contract award)
Dependencies and Responsibilities in Germany

Federal Ministry \(\rightarrow\) Nuclear Licensing and Supervisory Authority (MELUR) \(\leftarrow\) Parliament / Political Parties

- Federal supervision
- Questions / Justifications
- Public
- Criticism

Independent experts (e.g. TÜV NORD) \(\rightarrow\) Atomic Energy Act (AtG) \(\leftarrow\) State-of-the-art technology rules (ISO, DIN …)

- Licences
- Ordinances, e.g. StrlSchV

Guidelines, directives \(\leftarrow\) in compliance with …

- Techn. specifications, operational / company directives
- Independent experts (e.g. TÜV NORD)
- Parliamentary / Political Parties
- Questions / Justifications
- Public
- Criticism

Ministerium für Energiewende, Landwirtschaft, Umwelt und ländliche Räume des Landes Schleswig-Holstein Abteilung Reaktorsicherheit und Strahlenschutz

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Basic Safety Rules

Council Directive 96/29/Euratom / Radiation Protection Ordinance (StrlSchV)

- **Art. 2 / § 2**: practices ↔ work activities
- **Art. 6, 7 / §§ 4, 5, 6**: justification, optimization and dose limitation
- **Art. 18 / § 36**: controlled areas
- **Art. 4 / § 7**: requirement of a licence
- **Art. 3, 5 / § 29**: nuclide-specific clearance levels

Clearance according to § 29 StrlSchV

Clearance is an administrative and supervised act by MELUR:

- Application / granting of a licence
- Material specific confirmation by the licencee
- Assessment by independent experts
- Approval / control by the supervisory authority

The radiation protection officer is responsible for documentation and verification:

- residual contamination is below particular clearance levels
- material conforms to all clearance conditions (licence + StrlSchV)
Treatment and clearance in scope of an external licence (1/2)

... is not a standard option explicitly addressed in the StrlSchV

... is possible under some circumstances:

- Different responsibilities and sovereignties remain untouched
- Agreement with both supervisory authorities
- Responsibility for nuclear waste rests with the NPP
- Comparable requirements on the clearance

On what terms could MELUR agree upon the clearance according to RP89 along with the German regulations?
Requirements on the clearance procedure:

- Safety, transparency and feasibility of the procedures
- Compliance with the EU basic safety standards
- Existing licences
- Compliance with applicable clearance levels
- Completeness of the documentation
- Control by the supervisory authority

Approval by MELUR
Example of establishing the release of metal scrap after licenced melting

- **Approval**
  - Current licences
  - Material declaration
  - Proper waste management

- **Delivery**
  - Sorting and breakup
  - Transport
  - Receiving inspection and acceptance

- **Licenced Melting**
  - Melting will homogenize remaining surface contamination / activity
  - Rad. characterisation of fractions: ingots and secondary waste (slag, filter dust)
  - Classification of ingots: releasable / decay storage / nuclear waste

- **Conditional Clearance**
  - Melting report, confirmed by assessment by the NPP
  - Assessment by independent experts, e.g. TÜV NORD
  - Approval to ownership change with execution of clearance (**MELUR**)

- **Recycling**
  - Recycling according to RP 89
Practical experiences

Mass- / activity flux
→ Weighing discrepancies
→ Calibration errors

Cultural peculiarities
→ Languages
→ Interpretations

Communication
→ Process reliability
→ Operational interfaces
Conclusion

External treatment and clearance of metal scrap in scope of an external licence is a feasible and workable option.

The comparability of national and third party regulatory requirements on clearance is of major importance.

The experience has shown that despite additional requirements the recycling of metals in foreign EU member states can be applied in a practicable way.
THANK YOU FOR YOUR ATTENTION