Do We Need a Nuclear Steward?

Monitoring as Task for Long-Term Governance Institution

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1. Introduction

- Institutionalized control of nuclear waste is needed. Underground repositories for high-level wastes favoured, but far away from implementation (e.g. Germany and others).
- Many generations of professionals and citizens will be involved.
- Who is prepared? Institution in what sense?

2. ITAS and its Context

- Interdisciplinary research, combination of independent basic research and policy advice, national and international.
- Reference to state of the art central, often tension between positions.
- Since 2001 a line of interdisciplinary and social-science-based research, intensified from 2012 up to now (www.itas.kit.edu).

2-2 (analytical concept)

- Established conceptual “thinking”: Law and regulation allows to control the collective process and decision-making (“radwaste as one case in this pattern”)
- New established perspectives in (innovation) research:
  > collective binding decisions (policy is responsible)
  > the social side of R&D
- “Problem-oriented Research” (Grunwald 2018)
- Focus: systematic analysis of side-effects caused by technical RADWASTE installations in an underground repository with monitoring (expectations of affected citizens etc, institutional control of safety and security).

3 Why planning for the future?

- “Governance” as one mode to react in front of side-effects expected, challenges and inherent tensions of the project “disposal”: Time is one complex side-effect in this case.
- In this perspective, time means “institutionalization” for the close “future”.
- Quality standards for decision-making are not allowed to erode, “precautionary principle” in the European Union (TA)
- Routines in administrative settings as a problem (Sträter), degree of attention, up to now impossible to transmute, high number of engaged and interested collective actors (incl. NGO).
- Which setting reasonable for organizing these collective goods in a cooperative way, which are addressed in this case? How many checks and balances?

4 What is a Nuclear Steward?

- Two concepts are fascinating:
  a.) in force DOE's long-term stewardship (LTS)
  b.) under debate focussing "eco systems": 'planetary stewardships' and its idea of "resilience to widespread biodiversity loss" (PSS)
  > LTS: next 100 years, managerial task (like monitoring, repairing surface installations, information management).
  > PSS: understanding of eco systems, influenced by human action, understanding stimulus/response relations for knowledge management, interest: effects of measures.
- **Opening the "black box"** (see D. Metlay in reflecting LTS).
- PSS: close to a "wait-and-see" strategy (reflect later, not now?).
- Taking care for long-term future / time and context: number of decades and some centuries under contexts of "non-knowledge", measures and cultural effects (like expected loss of attention).

5 Long-term Governance

- Governmental arrangements and their limited commitments for the future: some concerns can be stressed by rational arguing!
- Two questions relevant:
  a. How can be ensured that safety and security do not fall prey to routine?
  b. How can robust decision-making take place?
- Examples for current challenges: one technological, one cultural challenge:
  Case 1: against the position "everything-is-under-control" promoting the "uncovering of errors and problems" (as a strategy of down-sizing the negative side-effects of routines)
  Case 2: unexpected monitoring results after 40 years of the operating phase and very limited resources of the responsible federal governmental organisation.

5-2 (support for institutionalized cooperation)

Sociotechnical Perspective: pre-discussed institutional arrangements, balanced systems of control checked by authorities and civil society / interested public

Interdisciplinary academic support: natural sciences like chemistry and radioecology, civil engineering, philosophy, law studies, political sciences, and technology assessment.

→ More fantasy! (more than labeling!)

6 Outlook

- Not too optimistic, but also not pessimistic in terms of planning.
- "public expectations": Is it possible to have no plan for long-term, if the conceptual strategy is fixed now (e.g. retrievability, e.g. in GER)? Discourse about the different "futures" (see Grunwald and his conceptual frame of "different technological futures" as possible options).
- There is "public knowledge" about the shortcomings and mistakes of deducing conceptual thinking by focusing on formal rules and regulations.
- "stewardship organization" ←→ "precautionary principle"
- Personalized system vs. stewardship as part of a system of checks and balances ("task force" with resources, competences & ability of qualified action) (Kuppler et al. 2018)

Thank You for Your Attention!

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