Minutes from Advisory Group Meeting

Date: 11th and 12th May 2026

Location: Quality Hotel Olavsgaard and Institute for Energy Technology (IFE) (Kjeller)

Participants:

Advisory group: Johan Andersson, Catherine Banet, Steve Barlow, Simon Carroll, Tom Heldal

DSA: Madeleine Barbru, Hildegunn Dahl

NND: Grete Rindahl, Hanne Lund-Bøhmer

Date for next meeting: *12th November 2026 – digital meeting*

Agenda

11th May Time	Topic
10.00–10.10	Welcome
10.10–10.30	Update on NND
10.30–10.40	Break
10.40–11.30	Plans for treatment, export and return of spent nuclear fuel
11.30–11.45	Break
11.45–12.30	Cont. Plans for treatment, export and return of spent nuclear fuel
12.30–13.30	Lunch
13.30–14.20	Cont. Plans for treatment, export and return of spent nuclear fuel
14.20–14.35	Break
14.35–15.20	Requirement Management Systems
15.20–15.30	Break
15.30–16.00	Sum up meeting day one
12th May	
9.00–9.10	Welcome day two
9.10–10.05	Culture for safety /security in transition phase
10.05-10.20	Break
10.20–11.15	Cost estimation methodology
11.15– 11.45	Reflections
11.45– 12.30	Lunch
12.30-15.00	Tour of the Kjeller-facility Sum up of the meeting
15:00	End of meeting

11 May 2026

Welcome and update on NND

Grete Rindahl opened the meeting by welcoming the participants. She reported that during a recent all-staff meeting, it was announced that the transfer of the nuclear facilities at Kjeller to NND is planned for 1 January 2027. This development was the reason for the Director General's inability to attend this Advisory Group Meeting.

Grete gave a presentation on the latest updates regarding NND since the previous meeting.

Plans for treatment, export and return of spent nuclear fuel

Peter Bennett gave a presentation about the plans for treatment, export and return of spent nuclear fuel.

Key subjects from the presentation and subsequent discussion included:

- Mobile Melt Consolidate (MMC)
    - is for HEU-Th fuel (1 % of the total amount of Spent Nuclear Fuel (SNF)) – the "exotic" fuel
    - Estimated operation time is 2-5 years
    - The actual product will be a metallic wasteform. Intention to directly dispose of the product
    - Not a competence that is considered necessary for the future, so can be procured
    - The MMC-project has been discussed with Lillestrøm Municipality
    - The Ministry of Trade, Industry, and Fisheries has assigned both IFE and NND the task of following up the MMC project in their allocation letters
    - A pilot study will be carried out in a hot cell on Kjeller site
- Treatment of metallic U fuel
    - NND has not considered swaps
    - Disposability should be weighted; *Why would you do any of this if it leads to a non-disposal?*
    - Metallic uranium should be stabilized to provide a passive safe product for storage and disposal. Studsvik's dry oxidation technique is proposed and supported Norway is part of the International Atomic Energy Agency (IAEA) Coordinated Research Project Enhancing Global Knowledge on Deep Borehole Disposal. Deep borehole disposal may be an option for NND's SNF.
    - Implementation and collaboration are sub-criteria for the CRP:
        - Do we think others have same fuel and will be aided with our work?

NND reported that additional, written, feedback on the presentation had been received from members of the Advisory Group and will be taken into consideration.

Christoffer Nicolaisen gave a presentation about the International Framework and Norwegian Regulations pertaining to export and transport of nuclear materials.

Key subjects from the presentation and subsequent discussion included:

- Discussion about the interpretation of relevant regulations for export, transport and return of SNF and waste products in connection with the dry oxidation proposals by Studsvik (Sweden):
    - Destination
        - 10 years ago, the agreed transfer of responsibility was at the gate, but the new DSA guidelines have since then been updated (created)
    - Return duties / return capacity
        - There are not treatment facilities in Norway. Norway needs to export SNF for treatment
        - It has been suggested that the regulations require that Norway should be prepared for the immediate return of exported fuel at any time – discussion about the international application of this requirement. Such a requirement could potentially be problematic. During discussions it was noted that
            - Norway may have self-imposed itself a requirement that does not formally exist in the current international regime, and immediate ad hoc return at any time might be counter to the underlying principles of the applicable international instruments
            - International transport of nuclear materials entails complex multilayered requirements, and not always clear delineation of responsibilities between countries of origin, destination and transit.
            - Transport and processing in Sweden will be subject to SSM requirements
                - Note that "responsibility" can mean different things in differing contexts.
    - Export permit vs. transport/consignment
        - Transport permits will be specific
        - Storage incidental to treatment

- The relevant regulations and their interpretations are addressed in guidance meetings with DSA. Understanding these matters is essential for accurate contractual management.
- It was suggested that NND consult with WNTI (World Nuclear Transport Institute) who may be able to provide their interpretation of the various legal requirements and how they might apply in this case.

NND reported that additional, written, feedback on the presentation had been received from members of the Advisory Group and will be taken into consideration.

Requirement Management Systems – Concrete examples

Morten Nytun gave a presentation.

Key subjects from the presentation and subsequent discussion included:

- RMS – a new way of working rather than a new system
    - Do not go for complicated computer solutions – a spreadsheet solution works well initially: the benefit comes from the mindset that is necessary
    - Start slowly, and get used to phrasing the requirements in the right ways
    - The system (new way of working) made us think what are the actual requirements of the project/design. It gave insight to differentiate between facts and assumptions that were accepted as facts
    - Who is using it and for what purpose? It is important to understand and apply it accordingly.
- The tricky part in requirements is to formulate the requirements and to assess their implications.
    - This requires involvement of the subject matter experts.
    - An RMS should primarily be used to document and retrieve existing requirements. It can usually not be used as an active tool for updating them.
    - Focus on requirements unique to the NND mission
- Different timescales for different projects, interface through different organizations
- Resources
    - Change manager
    - Specialist for input to the system
        - Different disciplines using the system

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Culture for safety/security in transition phase

Ann Britt Skjerve gave a presentation.

Key subjects from the presentation and subsequent discussion included:

- The importance of the leadership team demonstrating through their actions that safety is paramount was emphasized
    - Leaders should explain the thought process – increase trust
    - Trust is an enabler for people to speak up about issues. Listening and following up
- Actions:
    - Safety moments
    - Focus on a no blame culture
        - Identify what happened, what the consequences might have been. Ask "what if?" several times
    - "Safety case on a page"
        - Found it helpful to communicate concisely to operators on the plant what are the key hazards and safety functions providing protection.
        - Translates many pages of a safety case into something more easily understandable. Found to promote trust and better communication
- Build a learning organization
- Discussion on the increased security requirements vs. openness within the organization; *If people do not know about it, they will not do it?*
    - Restriction of information will be a will be a hindrance to competence development
    - Classifying all information by default may have detrimental impact on safety culture.
    - High level of both internal and external openness strongly supported the development of trust for the nuclear waste programs in Sweden and Finland
    - Consider a thorough assessment of what are the specific concerns related to safety, competence and security threats in order to reach a balanced level of security and openness.
- Importance of having an idea of what you are going to do – what you are transitioning to and why. Visualize it and communicate it.
    - How do you make the "black hole" / the greenfield or brown field a vision so that people can contribute to achieving this?
- Need to keep the management system fully up to date
    - If not, workers may use informal networks to overcome inconsistences to

enable the work to progress. This may be hazardous and operators should have confidence that any problems found with procedures will be taken seriously and updated quickly. Allocate a named individual to be responsible for the update. With the license transfer there will inevitably be inconsistences and gaps in the management system build trust by being open to suggestions and implement revisions and updates
    - Recognize that it is a learning curve, continuously work with your management instructions and procedures
        - Gap should be nominated to a person
- Transfer of knowledge
    - Transfer of knowledge from a time perspective
        - Figure out the knowledge you need over time
    - Better on- / off-boarding: Overlap, shadowing, reverse shadowing, informal meet chats

NND reported that additional, written, feedback on the presentation had been received from members of the Advisory Group and will be taken into consideration.

Cost estimation methodology

Svein Erik Klemetsen gave a presentation.

Key subjects from the presentation and subsequent discussion included:

- Norway do not have the corrective where the price of electricity will increase due to costing
- The wait cost money
- Structure *risk, assumption,* and *uncertainty* so that it is not counted twice. See definitions in IAEA guidance
    - Regulatory change – a risk
- The cost increases when you must redo things; *Spend money on characterization now, save money later*
- Remember the decommissioning will result in non-radioactive but possibly hazardous wastes, for instance asbestos and lead and these too will need to be managed safely
- Bias: Optimizing bias. Avoid being trapped by pressure from above to reduce estimates – just because it is wanted. Justify, properly, if projected costs are to be reduced
- Public and political trust: more a narrative than a “magic number”
- Pricing of services, limited providers
    - NND has not sent applications for state aid

- Workforce composition will change over time. How to estimate the cost of reskilling new personnel entering was discussed:
    - Understand how your workforce is going to evolve over time – understanding the plant, the workforce and the labor cost involved
    - Overall documentation on changes in costs
    - Analyze what personnel you need to run equipment
    - NTNU might have competence

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Tour of the Kjeller-facility

Hans-Jörg Kleeman (IFE) gave a tour of the Kjeller-facility.