Note:
This is a translation of the ESK memorandum entitled
"Kompetenzerhalt im Bereich der Entsorgung radioaktiver Abfälle".
In case of discrepancies between the English translation and the German original, the original shall prevail.

MEMORANDUM of the Nuclear Waste Management Commission

Maintaining competence in the field of radioactive waste management

Radioactive waste management is a long-term social task. It can only be carried out successfully if a sufficient number of competent experts dedicate themselves to this task over the entire period.

The time horizon for accomplishing this task is long. From today's point of view, the safe operation of storage will be necessary at least until well into the 50s and 60s of our century. It is only terminated when all waste packages have been transferred from the storage facilities to the repositories, the low and intermediate level radioactive waste to the Konrad mine and the high level radioactive waste to the repository the site of which is still to be selected according to the Repository Site Selection Act (*Standortauswahlgesetz* – StandAG). As regards disposal, the time horizon is even longer. Technically, this task will not be accomplished until the Konrad mine and the repository for high level radioactive waste have been finally filled and sealed. From today's point of view, the overall task is not expected to be completed before the beginning of the 22nd century.

This time horizon requires that several generations of professionals work on these projects and that their know-how is further transferred. However, these professionals must first be recruited or trained. The area of "nuclear waste management" is in massive competition with many other fields of activity for scientific and engineering professions.

Although nuclear waste management offers a long-term career perspective, it is suffering from the negative image that nuclear energy and all related issues have in public perception.

Attractiveness plays a major role in the selection of the field of activity, both for university graduates as well as for potential lateral entrants with professional experience in other fields of activity. This is all the more relevant as there is currently a shortage of skilled staff – especially engineers and scientists – so that the existing specialists are highly sought after.

The criteria for the attractiveness of the professional activity are person-specific, usually there are several components. The social prestige of the field of activity is important to many people and a central aspect. The

determining factor in the selection can also be the benefit to society or the challenge of solving exciting tasks. It will therefore be crucial whether solving the waste management issue is seen as a positive task in our society. That is a matter for politics, but also social groups – such as journalists and NGOs – should do their bit. Politics has made its first contribution to this by paving the way for the solution of the waste management issue in recent years with a high degree of cross-party consensus.

For the short- and long-term future, it is absolutely necessary for politics to make clear that the solution of the waste management issue is socially necessary and requires qualified expertise. So politics has to devote a good deal of persuasive effort in this field to communicate this to the wider society. This is the only way to make the activity in the field of nuclear waste management more attractive in the long term. This will not happen by itself but requires active action both in political institutions and in the competent ministries.

The ESK strongly urges to make this insight the benchmark for further action. The necessary improvement of the social image of nuclear waste management activities can primarily only come from the political area.

Of course, all organisations involved in waste management, including research facilities, are also challenged. Their public relations must emphasise the social necessity of waste management in order to improve the social standing of the task. However, they are also required in practice to create and maintain a high attractiveness of the jobs. Finally, these jobs offer a wide range of challenges that can only be mastered with in-depth technical know-how.

After the organisational restructuring of the nuclear waste management situation in the last months and with the start of the search for the repository site for high-level radioactive waste, the need for experts increases significantly. This is also due to the extensive scientific work that must be carried out by the organisations involved in the course of the search. It is to be feared that without the continuous work on improving society’s image of nuclear waste management, it will be very difficult to meet the concrete demand for specialist capacity in the long term.

This situation is currently aggravated by the fact that current organisational restructuring and waiting for the results of the decision-making processes in recent years have resulted in a number of waste management specialists focusing on other fields of activity.

A further effect is the overall comparatively high average age in the current community of nuclear waste management specialists. Many of them will leave the active working life in the foreseeable future. The aforementioned effects lead to an even greater need for specialist workers than it would be the case if undifferentiated figures were taken into account.

In addition to the sustainable supply of the operational organisations (operators, authorities, authorised experts) with sufficient professional staff – which is essentially achieved by qualified engineers and scientists who may receive a nuclear-specific training on the job or special training courses – it is absolutely essential to maintain and further develop a research landscape that deals with the scientific principles of waste management, continuously develops the relevant knowledge and also plays an important role in the training of future nuclear waste management specialists. Research should be application-oriented and include

application-oriented basic research. This requires a modern research infrastructure with the necessary special laboratories.

The unclear situation in recent years has resulted in significant constraints and obstacles in the research landscape, which have rather reduced its capacities. The ESK considers it necessary for politics and organisations involved to establish very quickly clear boundary conditions for the research landscape on nuclear waste management as a whole and for the individual parties involved. Otherwise, further crumbling in the research landscape and closure of facilities (e.g. laboratories dealing with radioactive substances) is almost inevitable.

Experience has shown that the need for specialists in nuclear waste management cannot be met without a larger number of lateral entrants. Young professionals must be trained in the specifics and cross-disciplinary aspects of nuclear waste management. Therefore, the development of appropriate training opportunities is a challenge that must be addressed. Employers in the field of nuclear waste management and potential training providers should agree on the content and organisation of the advanced training.

Conclusion:

- The tasks of nuclear waste management require a high capacity of specialists over a very long period of time.
- Without the necessary capacities, it will not be possible to solve the waste management tasks to the extent required; the facts outlined here show that it will be difficult to meet the demand.
- The ESK is concerned that too little attention is still being paid to maintain competence in the field of radioactive waste management.
- Timely action is required in order to avoid that waste management tasks cannot be solved due to an insufficient number of specialists. That is why it is important to improve the image of this profession.
- From the ESK’s point of view, it is important that politics and organisations involved in waste management present their viewpoint to the general public, namely that nuclear waste management is a long-term task and responsibility for society as a whole.