

December 5th 2002

The organizers' conclusions and recommendations

We, the organizers of the seminar on *The European Spallation Source* in Copenhagen Friday the 29th of November 2002, draw the following conclusions from the information that was presented at the seminar and the developments leading up to it:

We regret that **Dr. Patrik Carlsson**, spokesperson of ESS SCANDINAVIA and **Prof. Kurt Clausen**, Technical Director of the ESS COUNCIL, chose not to participate in the seminar, thereby continuing the ESS policy of avoiding public debate and not responding earnestly to criticism. Nevertheless, **we welcome** the statement in their press release from November the 28th where it is said that " ESS will not be used for any activities linked to transmutation, partitioning or reprocessing of spent nuclear fuel or any transmutation related experiments".

This is the first time that the leading persons of the ESS publicly have rejected the transmutation option.

At the same time we note that the memorandum *The European Spallation Source Project and Nuclear Waste Transmutation*, we commissioned from WISE-Paris¹ – and which probably triggered the boycott from the ESS people – establishes the existence of a double strategy in the ESS project management process. The memorandum concludes that " the present preliminary analysis of the history and purpose of the ESS Project shows that nuclear waste transmutation experimentation has clearly been a strategic and logical orientation of the project throughout its development. The recent redefinition of the project in 2001 no longer mentions transmutation. However, the future adaptation of the redefined project in order to carry out transmutation experiments is both: feasible without major technical challenge and economically achievable (...) The reasons presently preventing the ESS Council from maintaining the transmutation option are not technical, but rather seem to be political and financial in nature".

We also take note of the fact that

- although dissenting statements were given as regards singular aspects of this topic during the seminar, it was not contested that the strategic core of transmutation technology, i.e. advanced accelerator and adapted spallation target, were present in the latest design and that this design would allow future developments to reintegrate transmutation. The transformation of the pulsed beam to a continuous beam of neutrons, more suitable for transmutation experiments, is technically feasible through an injector replacement, as it has been achieved in SINQ.

- 7 of the 26 neutron scattering facilities around the world have designs comparable with the ESS and most of them have been equipped with subcritical reactors allowing transmutation studies. Moreover, a major spallation project currently under construction in Japan includes specifically waste transmutation research and applications in the main proclaimed purpose of the facility.

¹ WISE-Paris (World Information Service on Energy) is an information and consulting agency based in Paris, France and is independent of any other organisation named "WISE".



- there is no transmutation without nuclear reprocessing. The current generation reprocessing plants located at Sellafield in the UK and at La Hague in France are the single largest sources of manmade radioactivity and lead to more than 80% of the radiation exposure of the European population from the nuclear industry.

- although the initiators of the ESS project claim that they have rejected the transmutation option, they still have to have their project funded by the EU budgets. In the draft proposal for a Council Directive (EURATOM) on the management of spent nuclear fuel and radioactive waste through geological disposal – one of the two directives in the so-called “nuclear package” published in November 2002 under the Danish EU presidency – the Commission stresses the vital importance of research in partitioning and transmutation. This research would need an Accelerator Driven System (ADS) that may be more easily financed through changes in the ESS project than separately.

- the information provided from the seminar and the WISE-Paris memorandum not only confirms that the transmutation option will be available in the future, but also raises a number of fundamental questions, including the viability of the project as a whole. Mainly, it sets forth the question, what would be the result of a comprehensive social, environmental and economical analysis of yet another accelerator based system in Europe, e.g. considering:

- Risk assessments of all parts of the outlined ESS facility and elaboration of worst case scenarios;
- Impact assessments of worst case scenarios on a local and regional scale;
- The projected investment cost of some 1.5 billion euros and the projected annual expenditure of over 140 million euros. Which other budget lines are influenced by this huge investments in spallation-related science and could the money be used better in order to pursue EU’s sustainability strategy ?
- the significant electricity needs (at least 100 MW generating capacity, corresponding to the electricity consumption equivalent to that of a Danish city of more than 74,000 inhabitants, i.e. more than 1.7 times the electricity consumption of the city of Roskilde, and approximately that of a city like Esbjerg – or the city of Lidingö in Sweden, representing over 30 % of the annual operational costs or some 9,000 euros per hour of operation);
- the significant underlying driving force motivated by competition with the US and Japan beyond identifiable scientific rationale;
- contribution to sustainable development;

Consequently, we propose that

*a thorough independent investigation on the impact of the ESS project should be made **before** any decision on the viability of the initiative is taken. Considering that the funding of the project will derive mostly from The European Union and to some degree from the hosting country, the investigation should be a joint enterprise between the EU and the applicant countries. The investigation should comprise an independent in-depth assessment of the justification, long term orientation, environmental and social benefit and effects of the project. The project’s local and*



regional safety implications should be analyzed as well as the project's role in the EU policy for sustainable development, especially as regards the enormous energy consumption of the research

facility. In order to guarantee the neutrality of the investigation one or more independent research agencies should participate in the enterprise.

Considering the one-sidedness of the marketing of the ESS-project, we call on the initiators of the ESS-project to make available to the public any information on the project now and in the future.

The organizers of the seminar

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Additional information on the ESS seminar programme and the memorandum from WISE-Paris can be found at www.ecocouncil.dk, www.folkkampanjen.se and www.noah.dk/energi