



R&D EVALUATION

€ Commission of the European Communities

EVALUATION OF THE COMMUNITY'S

INDIRECT ACTION PROGRAMME

ON MANAGEMENT AND STORAGE OF RADIOACTIVE WASTE

1. BACKGROUND

In addition to the direct action research programme on radioactive waste carried out since 1973 in the Joint Research Centre at Ispra, the Commission initiated, in 1975, an indirect action programme on the management and storage of radioactive waste which has been carried out through public and private national research establishments.

On completion of this first five year indirect action programme, the Commission decided to undertake an external evaluation of the results of the programme. This is the fourth²² external evaluation to be completed in the context of the Commission's current effort to develop an evaluation approach suitable for its R&D activities.

²²See reports No's EUR 6902, 7350 and 7422 for previous evaluations.

2. THE METHOD

As for the previous evaluations, the method applied was in the form of a "Peer Evaluation" consisting of a panel of five independent external experts in the field. The panel met seven times over a period of eight months. They consulted all relevant documentation relating to the programme, assessing contracts and sectors on the basis of certain criteria established by the panel. In addition, the team interviewed a number of people involved in the programme, visited the JRC centre at Ispra on one occasion and sent out a questionnaire to contractors. The final report which was submitted to the Commission in October 1981 represents the findings and opinions of the panel.

3. THE TERMS OF REFERENCE

The panel's terms of reference were as follows:

- assess the scientific and technical quality of the results obtained with respect to the programme's objectives, taking into account the resources allocated to it;
- assess the effectiveness of the management and control of the programme and of the utilisation of resources;
- determine the likely contribution of the results of the programme to Community sectoral policies and objectives and to the socio-economic development of the Community in general;

- assess the contribution of the programme to the development of R&D in this area of research within the Community and in relation to related research being carried out elsewhere;
- make recommendations where necessary as to optimum ways of exploiting results, areas requiring further research and on possible improvements in financial, manpower, time and management aspects.

4. COMPOSITION OF THE PANEL

Dr. J. K. WRIGHT	Central Electricity Generating Board
Professor M. CARAPEZZA	Istituto di Geochimica, Palermo.
Dr. Ir. P. DEJONGHE	Centre d'Etude de l'Energie Nucléaire
Mr. J. JACQUET	Electricité de France
Dr. H. STÖBER	K.F.K., Karlsruhe.

The panel selected Dr. J. K. Wright to act as Chairman.

5. CONCLUSIONS OF THE EVALUATION

Below are the Conclusions^{*} of the panel as submitted to the Commission by its Chairman, Dr. J. K. Wright.

- "1. The safe management and storage of radioactive waste must be studied if there is to be an ongoing nuclear power programme. The topic is therefore highly relevant to the European Community's energy policy which aims to reduce dependence on imported oil through various actions including the increased use of nuclear energy for electricity production.

*The full report is available under the reference EUR 7693

- "2. Although there is little doubt that radioactive waste can be managed satisfactorily both now and in the future, there is a need for an ongoing research and development programme to determine the best safe and economic means for handling and storing waste in the medium term and to demonstrate the safe disposal of waste in the longer term.

- "3. The involvement in research work in this strategically important field enables the Commission to ensure that the necessary research programmes are being undertaken and, in addition, to build up a body of expertise on this complex and specialised topic.

- "4. Some member states have judged it right to delay the introduction of nuclear power into their country and have, therefore, little incentive to devote substantial resources to research and development on radioactive waste management. Access to the information gained from the CEC research programme will be of value to the Governments of these states in deciding whether and when to introduce nuclear power, since the issue of the management of radioactive waste is one of the areas of public concern about nuclear energy.

- "5. The initiative taken by the Commission to introduce such a research and development programme in 1975 was a timely one and stimulated complementary work in a number of member states.

- "6. The facilities and coordination provided by the Commission have facilitated the exchange of ideas and results between workers in

the various laboratories within and in some cases beyond the Community. Although there is little doubt that such interchanges of information would have happened in any event through the normal scientific channels and through bilateral agreements for exchanges of commercial information, the Commission's action has enabled this to occur in a systematic and economic way.

- "7. The Commission should find ways of satisfying itself that the programme is not stagnating, possibly by seeking the views of independent experts every few years.
- "8. Because the work has been coordinated by the Commission and results are exchanged it has been possible to undertake a comprehensive programme and avoid undue duplication of effort within Europe.
- "9. Although an overall saving of effort is obtained by different parts of the programme being conducted in specific countries, it gives rise to commercial problems if it transpires that, for example, one method of waste management being investigated in one country ultimately turns out to be more attractive than the alternative method being investigated elsewhere. Since the work is only partially funded by the Commission there remains the problem of whether the country working on the more successful project has any obligation, beyond making published reports available, to assist the transfer of the technology to elsewhere in the Community. It is judged that the conditions of contract presently cover this problem in a realistic manner.

- "10. It is suggested that the question of know-how and technology transfer be extensively discussed with the interested parties and that where applicable a cooperation agreement clause (for instance mutual assistance) be included in future contracts.
- "11. To ease the situation further, consideration should be given to encouraging the interchange of staff between appropriate projects, thereby enhancing the transfer of technology.
- "12. The Commission staff administer the contracts in a thorough and conscientious manner.
- "13. Although the second five year programme was approved by the Council of Ministers in March 1980, only 7% of the contracts have been sent out for signature by May 1981. Since many of the contracts are logical extensions of the work carried out in the first five year programme, the laboratories undertaking the research must either redeploy staff with the danger of loss of expertise and continuity or find funds from other sources. This delay in the letting of contracts is highly undesirable. It has arisen not because of lack of effort by the small team of dedicated staff in the Commission, but mainly because of the procedure by which the second programme was not approved until the first was almost complete thereby leading to peaks in the rate at which it is necessary to negotiate and place contracts. Contracts could be let at a more steady rate if the authorisation at five year intervals related to the commitment of work and expenditure into the future rather than the actual expenditure incurred over the

five year period. Although this procedure would not necessarily be appropriate for all the Community's research programmes, the long term nature of the radioactive waste management and storage programme makes it highly desirable in this particular case.

- "14. The monitoring of the research programme is undertaken in a thorough and professional manner.
- "15. In order to take account of the work entailed by the "Plan of Action" in addition to that of administering the research programme, two additional experienced scientists should be allocated to the programme management team.
- "16. The arrangement by which Commission staff undertake the technical administration of the programme whereas advice on the technical content of the programme and the capability of contractors is provided by national experts through the Advisory Committee of Programme Management is a good one. In particular the use of the same ACPM to cover the direct action programme at Ispra and the "Plan of Action" as well as the indirect action programme being evaluated ensures overall coordination of the Community funded work on radioactive waste.
- "17. The overall cost of managing the programme which is less than 5% of the total CEC contribution to it is at a reasonable level.
- "18. Although the original objectives of the first five year programme have not been achieved in every instance, a reasonable rate of progress of the scientific work is being obtained.

"19. Apart from a very small proportion of the cases studied, the overall quality of the science was found to be of a high standard."