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Towards increased cooperation and coordination of R&I activities for decommissioning

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CEA (French Alternative Energies and Atomic Energy Commission) is both the operator of important nuclear facilities all over the nuclear cycle, in charge of major new built or D&D projects and a R&D group with dynamic policy of technology transfer. The position of CEA in D&D is unique because of the number and the wide diversity of facilities under decommissioning, with some high level of contamination.

Innovative solutions are thus being developed in 6 main axes to protect the operators, to minimize the overall costs and the volumes of waste:

- Investigations in the facilities
- Radiological measurement of waste
- Robotics, laser cutting devices, virtual reality to simulate and choose the best way to operate,
- Decontamination of soils and structures
- Waste treatment and conditioning
- Methods and Information Technology (IT) Tools for project and waste management

CEA developed tools for its own D&D projects when they didn't exist yet on the market: robots, tele-operated equipment, cutting process and software for validation and optimization of intervention scenarios.

Concerning decommissioning and environmental remediation (D&ER), there appears to be a general consensus:

- Significant redundancy exists in current R&D programmes for D&ER being undertaken in different countries, though often no basis for industrial competition exists, e.g. on methods for treatment of exotic waste or for conditioning of intermediate and high activity waste;
- Project managers are often reluctant to use innovative technologies and need confidence from pilot operations with successful results to minimize project risks;
- Individual countries are finding it increasingly difficult to justify expenditure on developments that can require up to 10 years to complete; and
- Many possibilities exist to promote exchanges of information and lessons learnt but, beyond these, there is an urgent need to promote and organize at multinational level, the co-financing of R&D developments by actors with common objectives.

As a forerunner to the establishment of a framework for collaboration on R&D activities related to D&ER, it is proposed firstly to undertake a study to provide the following outputs:

- A mapping of the needs of D&ER projects, R&D programmes, human resources and platforms currently available;
- Identification of candidate topics for international financial collaboration, identification of actors involved with current sources of funding and rough business plans and schedules;
- Choice of financial and organizational model after benchmarking in other fields; and
- Proposal for an implementation schedule for projects that may begin immediately with varying timeframes for implementation, with the main focus being on projects taking place over the next 5-10 years.

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