

Joint Statement on Trilateral Cooperation in the area of Sodium-cooled Fast Reactors

By

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Cooperation on sodium-cooled fast reactor (SFR) technology among the Japan Atomic Energy Agency (JAEA), France's Commissariat à l'Énergie Atomique et aux Énergies Alternatives (CEA), and the United States Department of Energy (DOE) is focused on the development of prototype/demonstration (proto/demo) SFRs. To build on the previous cooperation, these three national organizations have signed an extension to their August 26, 2008, Memorandum of Understanding (MOU) to renew and expand their productive collaboration on SFR technology.

This MOU enables continued coordination among JAEA, CEA and DOE, on proto/demo SFR concept development consistent with each country's nuclear energy programmatic goals. The MOU advances the SFR development process by exploring practical collaborations involving technology providers in each organization's country. Both France and Japan have definitive timetables for deployment of such SFRs, while work in the United States is focused on system evaluations, material issues, safety analyses, and implications of SFRs for management of used nuclear fuel.

Under the existing MOU, the organizations have discussed common design requirements, comparison of reactor types, and the technologies and facilities that enable research and development (R&D) cooperation on future SFRs. The organizations have confirmed that both pool and loop configurations are technologically feasible and found broad collaborative areas independent from those specific configurations. With this new MOU, the organizations intend to share information and engage in collaboration on the harmonization of SFR development through identification of possible complementary R&D areas relating to fast reactor and related fuel cycle technologies.

In order to further advance SFR technologies, the organizations added the following specific cooperation items under the revised MOU:

- (1) R&D related to the proto/demo SFR development in many areas, including safety, system configuration, advanced materials, instrumentation, in-service inspection and repair, under sodium viewing, thermal hydraulics, neutronics, and operational experience of fast reactor operations at Joyo, Monju, Phenix, Superphenix, EBR-II, and FFTF.
- (2) Exploration of collaborative component design and fabrication. Joint design tool development may assist each party by exchanging benchmark experimental data for validation of codes.
- (3) Shared facilities for component testing, fuel development, and/or safety testing
- (4) Proto/demo reactor design studies.
- (5) Feasibility study on joint fuel fabrication for future proto/demo reactors.
- (6) Discussion on advanced fast reactor fuel cycle.

The organizations already cooperate within the framework of the Generation IV International Forum (GIF), a multilateral collaboration focused on promoting R&D for the development of next (fourth) generation nuclear energy systems. The collaborators under this new MOU will maintain continuous active dialogue with these and other international partners to ensure that nuclear power continues to play a major role in the global energy future.