

## **THE DOE GENERATION IV NUCLEAR POWER PROGRAM**

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Generation IV reactors follow the generation of Advanced Light Water Reactors, (some of these are under construction outside of the U.S., but none have been ordered). The Generation IV Program Goals are aimed at developing advanced nuclear systems that are deployable by 2030 or earlier. They have adequate fuel resources and reserves for many years (a sustainable fuel cycle), they are economically competitive with other energy alternatives, are even safer and more reliable than current technology, and are exceptionally proliferation resistant and have additional protection against external threats. Six concepts, identified through an international roadmapping effort, were chosen as the most likely to satisfy these goals: the Very High Temperature Reactor (VHTR), the Fast Gas Reactor (GFR), the Supercritical Water Reactor (SCWR), the Lead Fast Reactor (LFR), the Sodium Fast Reactor (SFR), and the Molten Salt Reactor (MSR). The VHTR is currently the highest priority system for the U.S., followed by the GFR, SCWR, and LFR. The U.S. is not currently engaged in research in support of the SFR and MSR, but keeps abreast of work underway in other countries through the Generation IV International Forum (GIF) which provides a vehicle for international collaboration and cooperation. R&D on the four systems under study in the U.S. is focused on feasibility issues specific to each system. There is also crosscutting R&D that is applicable to more than one system. The R&D will support a down-select in the future, and eventual construction of one or more of the selected reactors.