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Nuclear Energy's Renaissance ANDREW C. KADAK, MIT — Nuclear energy is about to enter its renaissance. After almost 30 years of new plant construction dormancy, utilities are seriously preparing for ordering new plants in the next two years. This resurgence in interest is based on improved plant performance, new Nuclear Regulatory Commission licensing processes, significant incentives introduced by Congress in the Energy Policy Act of 2005 to encourage new orders, and new technologies that are competitive, simpler to operate and safer. These new evolutionary light water reactors will pave the way to more advanced high temperature gas reactors such as the pebble bed or prismatic reactors that will provide improved efficiency and safety leading to more process heat applications in oil extraction or hydrogen production. The Next Generation Nuclear Plant (NGNP) also authorized by the Energy Policy act will provide the fundamental technical basis for the future of these technologies. Progress continues on the Yucca Mountain nuclear waste disposal site enabling this expansion. When coupled with the long term strategy of waste minimization through reprocessing and actinide destruction as proposed in the Global Nuclear Energy Partnership, the future of nuclear energy as part of this nation's energy mix appears to be assured.

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