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A continuously self regenerating high-flux neutron-generator facility[1] A.M. ROGERS, LBL, T.A. BECKER, Berkeley Geochronology Center, L.A. BERNSTEIN, LLNL, K. VAN BIBBER, Dept. of Nuclear Engineering, UC Berkeley, D.L. BLEUEL, LLNL, A.X. CHEN, Dept. of Mechanical Engineering, UC Berkeley, B.H. DAUB, B.L. GOLDBLUM, Dept. of Nuclear Engineering, UC Berkeley, R.B. FIRESTONE, LBL, K.-N. LEUNG, Dept. of Nuclear Engineering, UC Berkeley, P.R. RENNE, Berkeley Geochronology Center, C. WALTZ, Dept. of Nuclear Engineering, UC Berkeley — A facility based on a next-generation, high-flux D-D neutron generator (HFNG) is being constructed at UC Berkeley. The current generator, designed around two RF-driven multicusp deuterium ion sources, is capable of producing a neutron output of $> 10^{11}$ n/s. A specially designed titanium-coated copper target located between the ion sources accelerates D^+ ions up to 150 keV, generating 2.45 MeV neutrons through the d(d,^{3}He)n fusion reaction. Deuterium in the target is self loaded and regenerating through ion implantation, enabling stable and continuous long-term operation. The proposed science program is focused on pioneering advances in the $^{40}Ar/^{39}Ar$ dating technique for geochronology, new nuclear data measurements, basic nuclear science research including statistical model studies of radiative-strength functions and level densities, and education. An overview of the facility and its unique capabilities as well as first measurements from the HFNG commissioning will be presented.

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