Abstract Submitted
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High-Voltage Solid-State Trigger for HEDP Applications Phase I Results[1] JAMES PRAGER, KENNETH E. MILLER, Eagle Harbor Technologies — Eagle Harbor Technologies (EHT), Inc. is developing a solid-state thyratron replacement that can be used to trigger higher voltage spark-gap switches at Sandia and other laboratories. The current trigger generators used at Sandia are marginally reliable and have a long manufacturing and delivery time, and there is concern about the long-term availability of these thyratrons. When measured over short timescales, thyratrons typically have a jitter of a few nanoseconds; but over longer timescales, they can have a much larger drift. Additionally, thyratrons need stable, high-current, low-voltage power sources, have long warm-up times, and require conditioning shots to achieve a stable operating point. EHT recently completed a Phase I program to develop a first-generation prototype solid-state thyratron replacement. This unit produced 20 kV into 50 Ω with a sub-10 ns rise time and 100 ns e-folding fall time. EHT will present the design tradeoff study, selected topology, and key waveforms results.

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