

Abstract Submitted
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High-Voltage Solid-State Trigger for HEDP Applications¹ KENNETH E. MILLER, JAMES PRAGER, ILIA SLOBODOV, TIMOTHY ZIEMBA, CHRIS BOWMAN, CONNOR LISTON, Eagle Harbor Technologies, Inc. — Eagle Harbor Technologies (EHT), Inc. is developing a solid-state thyatron 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 thyatrons. When measured over short timescales, thyatrons typically have a jitter of a few nanoseconds; but over longer timescales, they can have a much larger drift. Additionally, thyatrons need stable, high-current, low-voltage power sources, have long warm-up times, and require conditioning shots to achieve a stable operating point. In the Phase I program, EHT will develop a first-generation prototype solid-state thyatron replacement, which will be able to produce 20 kV into 50 Ω with a sub-10 ns rise time and 100 ns e-folding fall time. EHT will present the Phase I program plan and initial results.

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