## Abstract Submitted for the SHOCK17 Meeting of The American Physical Society

High Performance Modeling of Novel Diagnostics Configuration<sup>1</sup> DALTON SMITH, Primary Author and Co-lead, JOHN GIBSON, RYLIE LODES, HAYDEN MALCOLM, TEAGAN NAKAMOTO, Supporting Author, KRISTINA PARRACK, Supporting Author and Team Lead, CHRISTOPHER TRUJILLO, ZAK WILDE, Supporting Author, LOS ALAMOS LABORATORIES Q-6 STU-DENTS TEAM — A novel diagnostics method to measure the Hayes Electric Effect was tested and verified against computerized models. Where standard PVDF diagnostics utilize piezoelectric materials to measure detonation pressure through strain-induced electrical signals, the PVDF was used in a novel technique by also detecting the detonations induced electric field. The ALE-3D Hydro Codes predicted the performance by calculating detonation velocities, pressures, and arrival times. These theoretical results then validated the experimental use of the PVDF repurposed to specifically track the Hayes Electric Effect.

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