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Gamma Reaction History on Sandia's Z Machine[1] KEVIN YATES, YONGHO KIM, HANS HERRMANN, KEVIN MEANEY, JUSTIN JORGENSON, Los Alamos National Laboratory, GORDON CHANDLER, PAT LAKE, MICHAEL JONES, JOHN MCKENNEY, CHRIS BALL, DECKER SPENCER, Sandia National Laboratory, MORRIS KAUFMAN, JAMES CORCORAN, KEVIN MCGILLIVRAY, KEN MOY, Nevada National Security Site, LANL TEAM, SANDIA TEAM, NNSS TEAM — Reaction History diagnostics are being fielded on Sandia's Z machine to demonstrate the ability to measure gamma ray reaction history. Tritium introduction into the Z experiments provides necessary gammas for analysis of the reaction history. We will outline the proposed experiments which include mixtures of deuterium (99%) and tritium (1%) as well as deuterium (50%) and helium 3 (50%) with the ultimate goal of diagnosing the evolution of the fusion plasma on Z. D^3He also has a steep dependence on ion temperature, making the reactivity ratio between DT and D^3He a sensitive ion temperature indicator. D^3He is also highly sensitive to non-thermal beam reactions and can provide an indication of the degree of thermalization of the fusion plasmas.

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