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Performances of a dual-axis radiographic diagnostic for hydrotest

Tuesday 3 June 2025 16:00 (2 hours)

Since 2023, the hydrotest Epure facility, located at Valduc, Burgundy, operates as a dual-axis radiographic system for French and British nuclear deterrence programs.

Each of the two axes is a single pulse electron linear induction accelerator rated nominally at 20MeV, 2kA and driving an X-ray conversion target. The first one is in use since 2013 at Valduc, and the other since 2023. Both share many traits and design features.

We tested each one under a range of operating parameters, mainly current for the one and energy for the other. We assessed performances in terms of X-ray output, beam stability and reliability and evaluated coherence between different diagnostics, including between X-ray detectors and electrical monitors, and between electrical monitors.

Footnotes

Paper preparation format

Word

Region represented

Europe

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