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Installation Of New Solid-State Amplifiers For CEBAF's Pass 5 Extraction Cavities

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The Continuous Electron Beam Accelerator Facility (CEBAF) at Jefferson Lab initially delivered a 4 GeV electron beam simultaneously to three experimental halls. Through two major energy upgrades, it now delivers an 11 GeV beam to three halls and a 12 GeV beam to a fourth hall. These upgrades necessitated modifications to the Separation System, including increasing RF power, reconfiguring the cavities, and upgrading the RF power amplifiers. An aging Inductive Output Tube (IOT) system and operational challenges prompted the installation of Solid-State Amplifiers (SSAs) to amplify the RF required for the 750 MHz cavity portion of the system. This presentation will discuss the operational challenges and the rationale behind selecting Solid-State Amplifiers for this application.

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