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Redesigned frontend for the upgrade at CHESS

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We will report on beamline front-end upgrades for the 24-pole wiggler beamlines at CHESS. A new design for primary x-ray beamstops based on a tapered, water cooled copper block has been implemented and installed in the CHESS F - beamline. The design uses a horizontally tapered "V" shape to reduce the power density on the internal surfaces, and internal water channels in the block to provide efficient water cooling. Upstream of the beamstops, we have installed a new photoelectron style beam position monitor with separate monitoring of the wiggler and dipole vertical beam positions with micron-level sensitivity. The monitor's internal surfaces are designed to absorb the full x-ray power in case of beam missteering, and the uncooled photoelectron collecting plates are not visible to the x-ray beam. A graphite prefilter has been installed to protect the beryllium windows that separate the front end from the x-ray optics downstream. The redesigned front end is required by the upgrade of the Cornell storage ring, now in progress, which will allow stored electron and positron currents of 300 mA by 1996, and 500 mA by 1998. At 500 mA, the wiggler power output will over 32 kW.