

# Magnet-Vacuum Module Assembly of the APS-Upgrade Storage Ring Vacuum System

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The APS-Upgrade (APS-U) project's new storage ring vacuum system has been assembled and installed between 2022 and early 2024. Much of the vacuum system was pre-assembled during a magnet & vacuum module assembly phase between 2022 and mid-2023 where 200 magnet modules (5 modules per each of 40 sectors) were assembled comprising about 90% of the storage ring vacuum system components. This assembly phase was performed at an offsite warehouse which was specially outfitted with storage and assembly spaces appropriate for UHV vacuum work. A team of technicians was trained to perform the work required to assemble and certify all magnet vacuum modules. This talk will discuss the work that helped make this magnet-vacuum module assembly phase a success including the scope of work, the facilities for assembly and inventory storage, inventory management, work planning and control, and the timeline of work performed.

## Summary

The APS-Upgrade project's new storage ring vacuum system was pre-assembled in modules, each sector comprising five distinct types across a total of 40 sectors. This significant endeavor took place in a dedicated offsite warehouse, purposefully equipped for module pre-assembly.

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