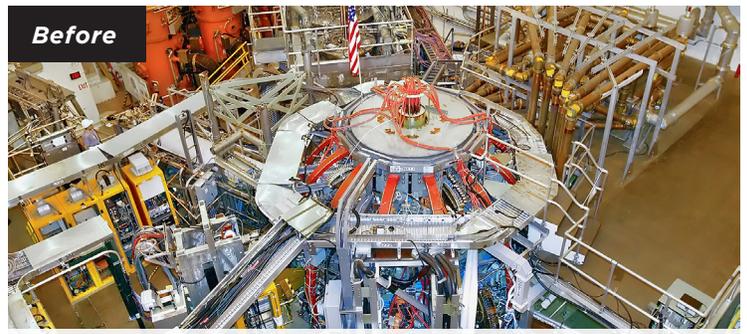
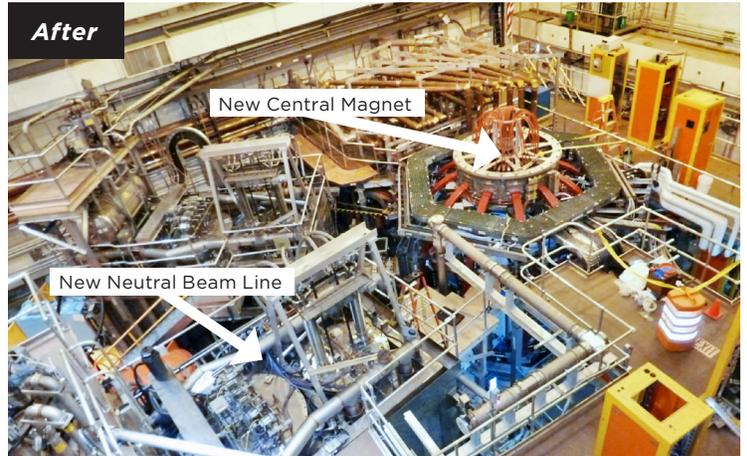


# National Spherical Torus Experiment - Upgrade

NSTX was a magnetically confined fusion experiment that had great scientific results for 10 years. Each experiment in the machine lasted about one second. The \$94 million upgrade project doubled the magnetic field by building a new central magnet, doubled the heating power by adding a second neutral beam heating system, and increased the experimental time to about five seconds. To complete this experiment, much of the existing machine had to be disassembled, reinforced with nearly 1,000 pounds of weld wire, and reassembled with the new hardware. The project was completed on schedule and within budget. This upgrade will allow scientists to reach new experimental regimes not available with the original experiment.



Original NSTX prior to the upgrade.



Completed NSTX-U.



New neutral beam box (40 tons) being moved into the NSTX-U test cell.



Building the first quadrant of the center stack magnet.



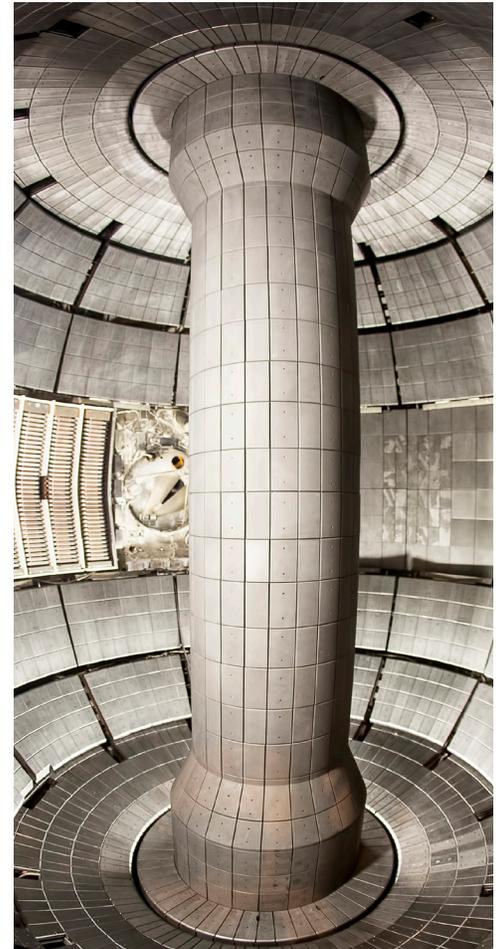
Winding the ohmic heating coil around the center stack.



Cryogenic panel (15 tons) being inserted into the new neutral beam box.



Center stack encased within the vacuum boundary and lowered into the NSTX-U.



Completed center stack installed in the NSTX-U.