

CDX-U Operation with a Liquid Lithium

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– The CDX-U spherical tokamak has now been operated with a fully toroidal limiter composed of liquid lithium. The liquid lithium fills a shallow toroidal tray at the bottom of the vacuum vessel, has a surface area of 2000 cm², and forms the lower limiting surface for the discharge. Operation with the liquid lithium limiter results in a reduction in radiated power, an increase in the core electron temperature, and a slight increase in the plasma current. Spectroscopic emissions from the edge plasma adjacent to the liquid lithium surface indicate that operation with a liquid lithium limiter strongly reduces recycling and plasma impurities, especially oxygen. Operational details to be presented include the results of vessel cleanup and replacement of the first-generation limiter system. *Supported by US DOE contract #DE-AC02-76CH-03073