



## About the Cover:

On both the cover photo and the photo to the left, Roger Gram, research engineer, and Jason Hobler, laboratory engineer, perform tests on the high-pressure-filling portion of the cryogenic fill/transfer station, where they recently demonstrated the system's ability to fill targets to high pressures with the required rate of pressure rise. To pressurize targets, deuterium or deuterium-tritium (DT) is first condensed into a small vessel inside chamber (A) and cooled to 10°K. Using the controller (B) the temperature is slowly increased, raising the pressure around the targets inside a permeation cell (not shown). The pressure is monitored by a high-accuracy pressure transducer (C). After the targets have reached a pressure of ~150 atm, the diaphragm compressor (D) is operated, slowly raising the pressure to ~1000 atm. Chamber (E) provides secondary containment for the valves and pressure transducers that control the process. All elements containing 1 atm or more of DT will have secondary containment. The glovebox (F) will provide tertiary containment when DT is introduced.

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For questions or comments, contact P. B. Radha, *Editor*, Laboratory for Laser Energetics, 250 East River Road, Rochester, NY 14623-1299, (716) 275-1453.

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