



Powerpack 1A Test Firing

Ares I Crew Launch Vehicle

# Upper Stage Engine

## ◆ Major Milestone:

### Concluded J-2X Powerpack 1A Testing at Stennis Space Center (SSC)

- Completed Preliminary Design Review for oxygen turbopump bleed valve, helium spin-start, pneumatic purge control assembly, and support equipment
- Completed Critical Design Review for the J-2X gas generator fuel valve and gas generator oxidizer valve
- Continued A-3 subscale diffuser testing to validate diffuser and test cell operation



Powerpack 1A at SSC



Subscale Diffuser Testing



Test Stand A3 Construction

