Refurbishing NASA’s Space Launch System (SLS) RS-25 Engines for First Flight

1. External Nozzle Inspection
   Similar to when a pilot walks around an airplane before flight, Aerojet Rocketdyne experts examine the engine externally for signs of damage.

2. Initial Engine Drying
   The initial engine drying process focuses on areas susceptible to corrosion.

3. Set Up Work Platforms
   Provide ergonomic-friendly access for technicians to work on the engines.

4. External Inspection of Major Components
   Searching for signs of damage.

5. Final Engine Drying
   The final engine drying process focuses on the remaining areas of the engine.

6. Nozzle Tube Leak Checks
   The nozzle is continuously cooled using liquid hydrogen (LH2); therefore leak checks on all 1,090 coolant tubes are conducted to ensure there is not excessive LH2 loss that could degrade engine performance.

7. Internal Inspection of Critical Components
   A borescope is used to see if any critical engine components have experienced abnormal wear and tear.

8. Perform Disturbed Joint Leak Checks
   Any joints that were taken apart or disturbed, as part of the refurbishment process, are checked for leaks.

9. Closeout and Final Inspection
   Remove platforms and prepare for arrival at Kennedy Space Center.

Removing Moisture From the Engines
- Water is formed when the engine combusted liquid hydrogen and liquid oxygen.
- Heated nitrogen gas is used to efficiently dry the internal passages of the engine.
- Dew point checks are used to verify engine dryness.

NASA’s Space Launch System (SLS) powered by Aerojet Rocketdyne