This is a sectional view of the Rocket Engine Test Facility (RETAF) Building 202. The viewer is looking north along an imaginary axis through the center of the building's semicircular cross-section. This view shows the construction of the horizontal, transverse, and vertical sections of the structure. The horizontal section is a cylinder measuring 100' in diameter. During testing, researchers placed the rocket engine on Stand A inside the test cell. The exhaust was directed downward into the scrubber. Stand A was instrumented with lead cells that sent engine thrust data to the observation room terminals and on to the control room in Building 100. Scanners also measured temperature and pressures at critical points on the engine.

Rocket engines mounted on Stand A discharged exhaust at a rate of up to 12,000 pounds per second (lbs) and at temperatures of 600°F. A water-cooling system operated inside the scrubber and intercepted the engine exhaust. To cool this spray, water flowed from a 500,000-gallon reservoir located on a hill 0.6 miles east of Building 202. RETAF personnel have not confirmed that the water was gravity-fed, but there are no pumps in that part of the system, and a gravity-fed system would not have been vulnerable to power interruptions. This water circulated into a manifold, and then to the nozzles mounted on a series of pipes inside the scrubber. The nozzles produced a heavy mist or aerosol of water that cooled the exhaust and prevented hot gases from the gas stream. The water also purged combustion products, approximately 10 to 15,000 pounds per minute, which were dispersed in the exhaust stream. The condensation of water vapor during combustion also reduced the velocity of the exhaust stream. Rapid condensation and the large diameter of the scrubber tank in comparison to that of the rocket nozzle further decreased the exhaust velocity to 15 feet per second. Additional water supplied from the reservoir cooled the exhaust stack temperatures to below 100°F and at velocities of 20 feet per second or less.

A section through the fuel pit is delineated at (1). The fuel pit housed two tanks that contained fuel, chemicals, and other items. In the event of an explosion, the tanks were quickly replaced after a fire to re-etch and enclose the test cell. The portion of the test cell's inner perimeter near the roofline consisted of a fire suppression system (2). In case of fire, water from the roofline and the associated sprinkler system from the 500,000-gallon reserve into the test cell, which flooded the cell with carbon dioxide.

To cool the rocket nozzle after testing, the 500,000-gallon water tank (3) east of Building 203 fed water pumps that had a capacity of 650 or 1,400 gallons per minute. Water from this reservoir also cooled a rocket altitude simulation system added to the RETAF in 1958. A section through this system is delineated at (4). The fuel tank was located in the central area of the facility and contained approximately 20,000 gallons of fuel. The tank was equipped with a fire suppression system (5).
SECTIONAL VIEW OF HIGH-ENERGY ROCKET TEST FACILITY