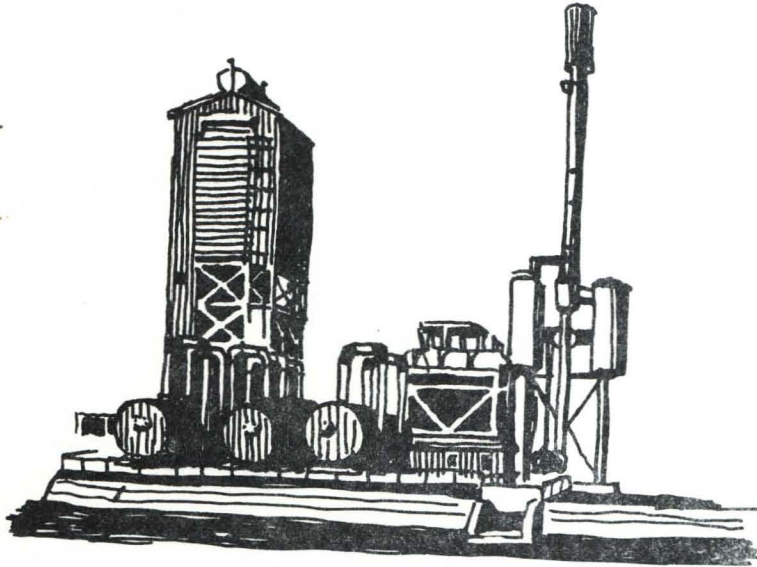




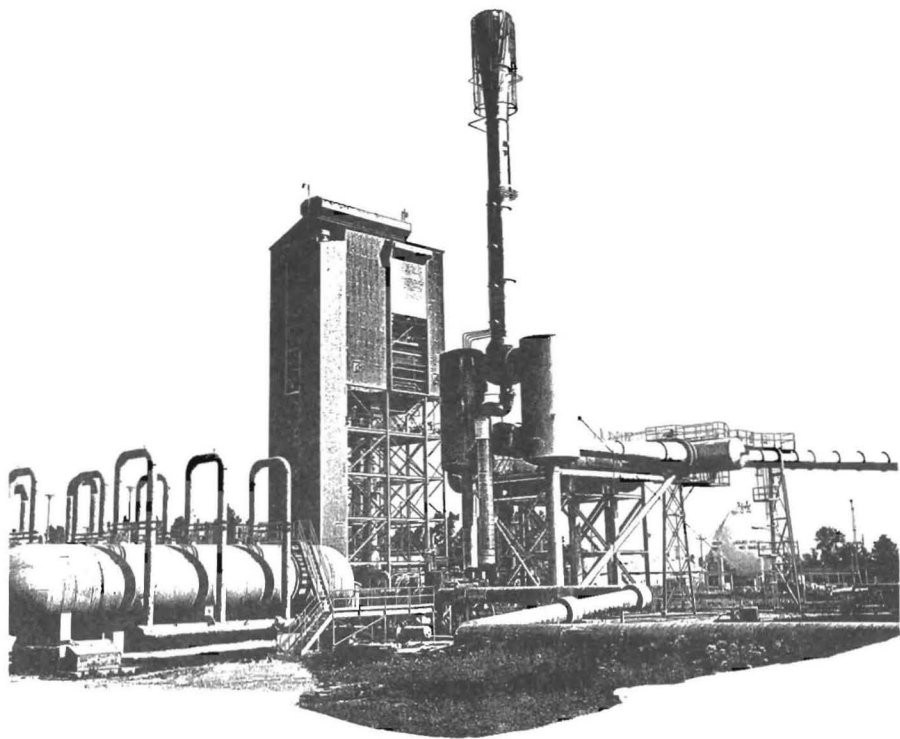
12

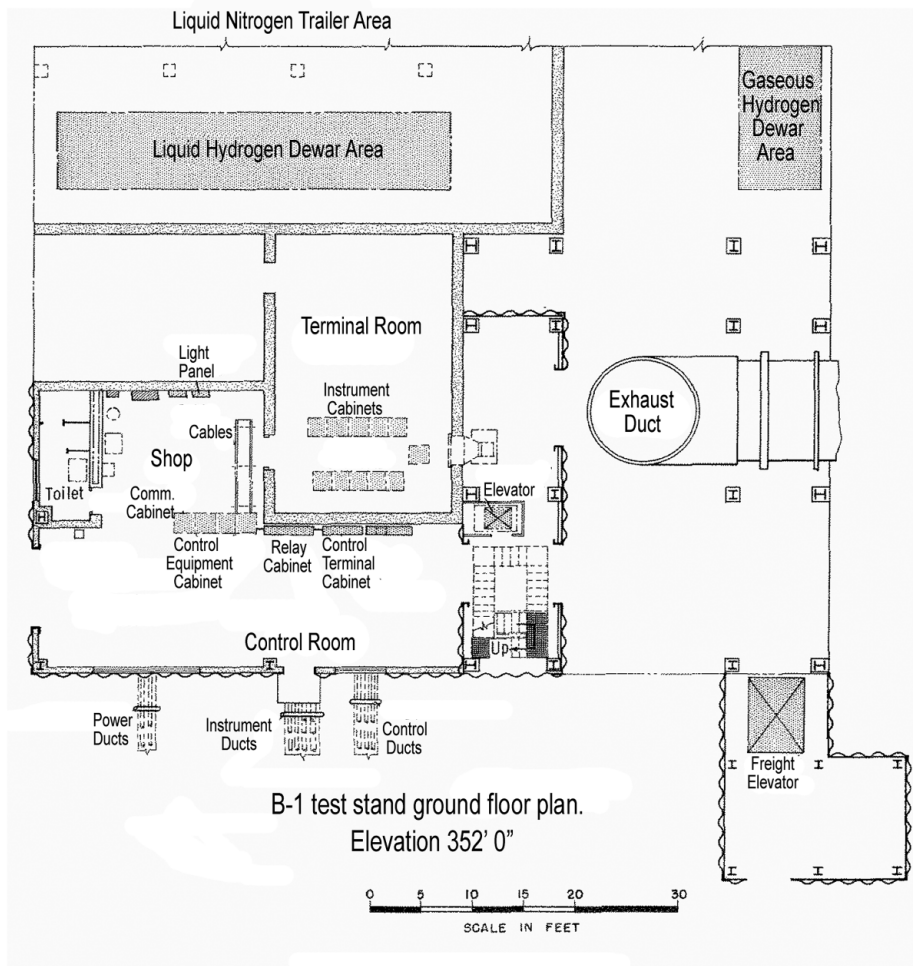
HIGH ENERGY ROCKET ENGINE RESEARCH FACILITY

This facility is designed to test propellant systems at altitude conditions. Tests have been run here on the NERVA (Nuclear Engine for Rocket Vehicle Application) turbopump. The investigations include turbopump tests, fluid instabilities in the engine flow passages, and equipment performance evaluations. The pipe structure to the right of the facility is a steam ejector which is used to obtain the necessary altitude test condition. This ejector will also be used by two other test facilities in this area.

12 HIGH ENERGY ROCKET ENGINE RESEARCH FACILITY

This facility is designed to test propellant systems at altitude conditions. Tests have been run here on the NERVA (Nuclear Engine for Rocket Vehicle Application) propellant feed system. The investigations include turbopump tests, fluid instabilities in the engine flow passages, and equipment performance evaluations. The pipe structure adjacent to the facility is a steam ejector which is used to obtain the necessary altitude test condition. A nearby steam plant furnishes the required steam for this ejector and also services the ejectors of three other research facilities.





CORRUGATED GALV. ROOFING

8TH LEVEL = EL. 105'-0"
TOP OF CRANE RAIL

5TH LEVEL = EL. 68'-0"
FLOODLIGHT FIXTURE (TYP) 2

ALUMIN. V-BEAM ROOFING

CONCRETE

OPEN

DO.

DO.

DO.

FACE OF CONC. WALL

CORRUGATED GALV. SIDING

EXPANSION JOINT

INDUSTRIAL PROJECTED SASH

WEST ELEVATION

SCALE: 1/8" = 1'-0"

Vent

2000-lb/sq. in. gaseous hydrogen supply

8'-0"

8'-0"

8'-0"

4'-11"

8'-0"

5'-11"

4'-3"

2'-11"

12'-11"

12'-11"

12'-11"

12'-11"

12'-11"

12'-11"

12'-11"

12'-11"

12'-11"

12'-11"

12'-11"

12'-11"

12'-11"

12'-11"

2000-g Tank

Flowmeter

Shutoff Valves

Pump

Turbine Pump Valve

Feed Line

Engine

Nozzle

Exhaust Line

Diffuser

5'-0"

10"

5'-0"

10"

5'-0"

10"

5'-0"

10"

5'-0"

10"

5'-0"

10"

5'-0"

10"

5'-0"

10"

5'-0"

FLASH.

FLASH.

4'-3"

15'-0" MIN. FOR 2" DIA. COLUMNS

6

5

4A

4

3

2

1

2'-5" MIN. 4" DIA. COLUMNS

CORRUGATED
GALV. ROOFING

8TH LEVEL = EL 105'-0"
TOP OF CRANE RAIL

5TH LEVEL EL. = 68'-0"
FLOODLIGHT
FIXTURE (TYP) 2

105'-0"

10'-2"

12'-11"

12'-11"

12'-11"

12'-11"

8'-0"

8'-0"

4'-11"

8'-0"

5'-11"

4'-3"

2'-9"

4'-11"

Elevation 101 ft

Vent

2400-lb/sq in. gaseous
hydrogen supply

2000-g
Tank

Flowmeter

Shutoff Valves

Pump

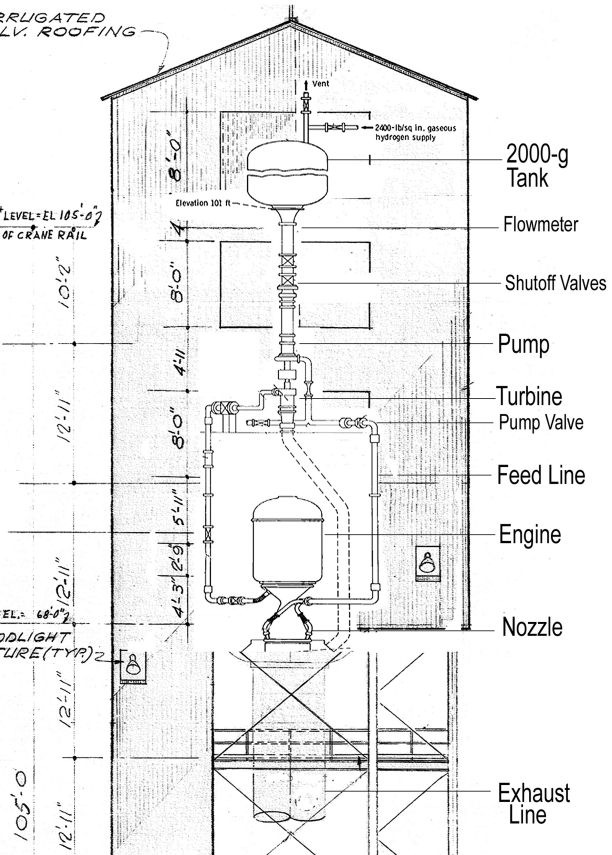
Turbine
Pump Valve

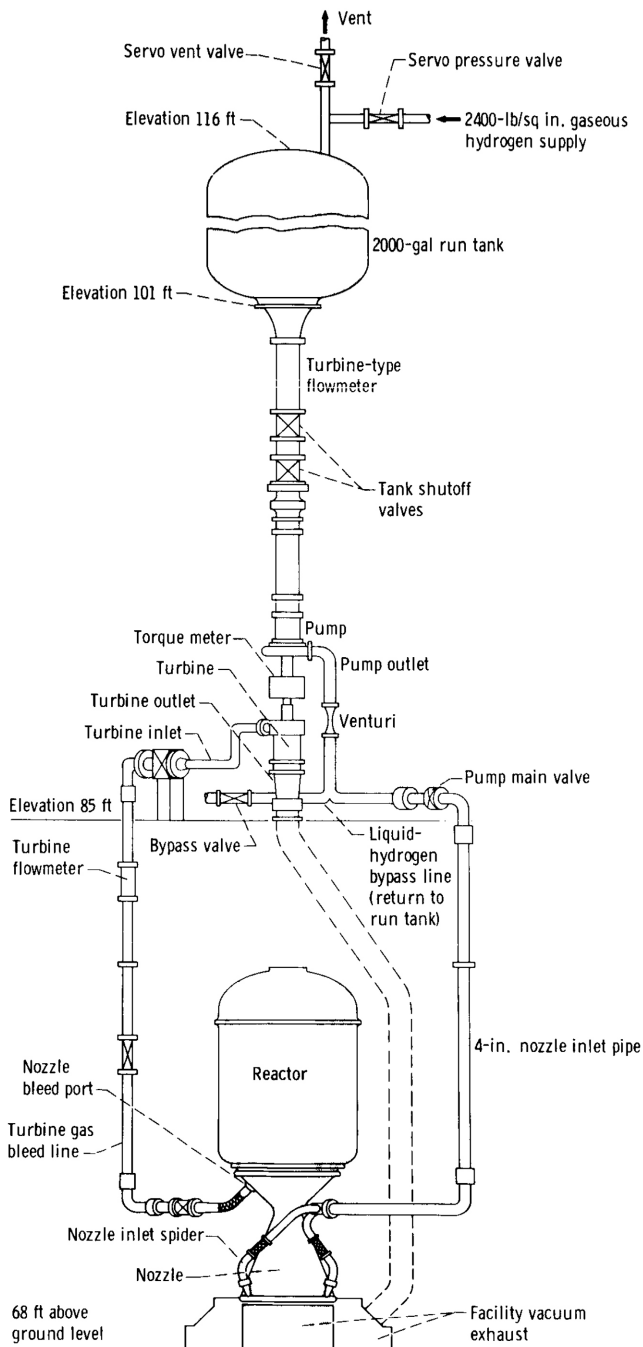
Feed Line

Engine

Nozzle

Exhaust
Line





CD-8113

Figure 2. - Schematic of simulated nuclear rocket experimental test setup in B-1 facility.