
TECHNICAL FACILITIES RESUME

DATE OF RESUME:

FACILITY NO:

1. REPORTING INSTALLATION: Lewis Research Center
Cleveland, Ohio
2. FACILITY NAME: Nuclear Rocket Dynamics and Control Facility (B-3)
3. LOCATION (if other than in 1. above): Plum Brook Station
Sandusky, Ohio



4. FUNCTIONAL NAME: Nuclear Rocket Dynamics and Control Facility

5. TECHNOLOGICAL AREAS SUPPORTED: Research and Development of cryogenic turbopumps and their incorporation into vehicle propellant systems.

6. NARRATIVE DESCRIPTION OF FACILITY CAPABILITIES & FUNCTIONS: This facility was designed to conduct altitude tests on propellant systems and their components for nuclear rocket engines. Paralleled pumps can be driven at liquid hydrogen discharge flow rates up to 200 pounds per second. There are no provisions for hot firing tests. The test structure is a steel tower 50 ft by 50 ft at the base and 210 ft high. The tower is enclosed above the 74 ft level, but has large doors on three sides for adequate ventilation. The research package is normally mounted on the third level which is 74 feet above grade. A liquid hydrogen run tank is mounted inside the test stand with the bottom of the tank approximately 115 feet above grade and 42 feet above the research package mounting level. A 200,000 gallon LH₂ storage dewar is located at grade level about 400 feet from the test structure. A 54 inch diameter exhaust duct connects this facility to the same altitude exhaust system that is used for the Altitude Rocket Test Facility which is adjacent. The exhaust system performance is essentially the same for both

6. NARRATIVE DESCRIPTION (continued from pg. 1)

facilities. The details of the exhaust system are included in the description of the Altitude Rocket Test Facility. Gaseous helium and nitrogen are supplied from trailers and gaseous hydrogen from two railcars each with a capacity of 780,000 ref at 5000 psig.

Testing in this facility is controlled remotely from the same control building that is used for the Altitude Rocket Test Facility.

MAJOR SUPPORT COMPONENTS OR EQUIPMENT

Altitude exhaust equipment.
200,000 gallon LH₂ storage tank.

7. POTENTIAL: No expansion of capabilities planned.

8. PLANS: None

9. BLDG. NO. 3311, 3331 10. YR. BUILT: 1965 11. FAC. CAT. CODE: 320-22
12. INITIAL-COST: \$ 1,878. K 13. NASA B.O.D. 1965 14. STATUS CODE: Active
15. ACCUM. COST: \$ --- K 16. LIFE EXPECT. Indef. 17. OWNER CODE: NASA
18. OPER. CODE: NASA 19. CONTRACTOR NAME (if contr. oper.):*

20. OTHER SOURCES OF INFO:

Facility Brochure being prepared by LeRC.

21. COGNIZANT ORGANIZATIONAL COMPONENT:

Rocket Systems Division

22. LOCAL OFFICE TO CONTACT FOR FURTHER INFO:

Chief, Rocket Systems Division Org. Code 6100

Phone: 419-625-1123 ext. 461

*LEAVE BLANK IF NOT APPLICABLE