

SPACE PROPULSION SYMPOSIUM (C4)
Propulsion Technology (3)

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DESIGN, CONSTRUCTION AND EVALUATION OF PROPELLANT SUPPLYING EQUIPMENT FOR
KSLV-1

Abstract

The main object of this paper is introducing the details of construction ground equipments for fuel and gases which are one of the major divisions of launch facilities for KSLV-1 (Korea Space Launch Vehicle).

As you know, KSLV-1 has liquid propellant (kerosene, liquid oxygen) rocket for propulsion system and the main purpose of this vehicle is launching scientific satellite in Low Earth Orbit. For operation of this vehicle, KARI (Korea Aerospace Research Institute) and Korean Government constructed launch facility in NARO Space Center and it organized 3 major equipments, fueling equipment, mechanical equipment, control equipment.

Fueling equipment, FGSE (Fuel Ground Support Equipment), can be defined as the equipment for storage and supply the propellants and gases which are used in launching KSLV-1. This equipment constitutes 13 subsystems.

KARI can obtain systematic engineering ability during construction and recognizes several technologies such as high pressure gas controls, cryogenic liquid controls, gas quality management procedures, etc. Those technologies may be contributed to step up industrial technologies of Korea. The details of each sub-system will be defined full paper and presentation slides.

KARI and Korean Government started construction of launch facility in 2005 with technical advice of Russian Space Agency and Russian Government and preparing launch KSLV-1 in the middle of 2009 after 4 years developing periods.

The authors intend to describe constitution of FGSE briefly and present technical data for the sub-systems of it. The readers of this paper can be obtained information about construction of first launch facility of Korea and its operations.