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OPERATION PROCEDURES OF LAUNCH COMPLEX IN NARO SPACE CENTER FOR KSLV-II FLIGHT TEST

Abstract

The launch operation of KSLV-II basically proceeds for two days except the launch vehicle assembly (including pre-inspection, preparation) and launch preparation of launch facilities itselves. It begins with the roll-out and transporting of launch vehicle from the assembly facility to the launch facility. The launch vehicle, KSLV-II which was assembled horizontally, transported along the road of NARO Space Center premises using special vehicles and transport equipment (which called "Transporter-Erector"). The Transporter-Erector with launch vehicle is placed on an erection device (which called "Erector") after transferring and they are erected vertically using hydraulic equipment. The launch vehicle is fixed at the Launch Pad using Vehicle Holding Device, and connected to launch complex using Umbilical Connection Device in accordance with the interface and operation requirements of the KSLV-II. On the day of launch, the launch operation is started from the electrical and mechanical inspection of the vehicle. Propellant, kerosene and liquid oxygen and helium gas, are supplied according to the prescribed sequence. About one hour before the launch, supplying propellant is stopped and supplement supply of propellant is going on. The Erector and Transporter-Erector should be separated from launch vehicle and switched horizontally for the safety. About 10 minutes before the launch, the automatic parallel sequence which called "Pre-Launch Operation" is executed and launch vehicle is lift-off when the count-down time is reached to zero. The above-mentioned launch operation procedures are developed, updated and verified through the 6 times flight tests of KARI from KSLV-I to KSLV-II. The authors and KARI developed the launch operation procedure which was introduced in this paper and participated in the actual launch operation of KSLV-II. In addition, we will be participate in continuing launch operations, developing new launch vehicles, and its launch operation procedures in line with Korean National Space Development Plan.