

7.0 HOLD/CUTOFF GUIDELINES

7.1 VERBAL REQUESTS.

7.1.1 Launch Countdown Holds (call to stations to T-31 seconds). The NASA Test Director (NTD) is responsible for management of the countdown clock (CDC) during launch operations. All verbal requests for a launch countdown "HOLD" of the CDC shall be directed to the NTD. No verbal "HOLD" request shall be initiated through the NTD after T-31 seconds.

7.1.2 Launch Countdown Cutoffs (T-9 minutes to T-0). The Ground Launch Sequencer Operator (CGLS) is responsible for operation of the GLS cutoff switch from GLS start (T-9 min) until SRB ignition. All verbal requests for launch countdown "cutoff" shall be directed to CGLS.

7.2 MANUAL ACTIVATIONS.

7.2.1 Launch Countdown Holds. Manual activation of "HOLD" switches from the NTD, Range Safety/Cargo or Integration Console will interrupt the GLS and cause the launch countdown process to hold at a subsequent pre-defined hold point. Range Safety/Cargo hold switch is not effective after T-10 sec.

7.2.2 Launch Countdown Cutoffs. Manual activation of GLS cutoff by CGLS shall occur as a positive response to a verbal request from the launch countdown team. Since there is no capability to "HOLD" the launch countdown after T-31 sec, a manual activation of any hold switch during this time period will be treated as a cutoff signal by the Ground Launch Sequencer.

7.3 AUTOMATIC ACTIVATION.

7.3.1 Launch Countdown Holds/Cutoffs. Automatic interruption of the launch countdown for either a hold or cutoff condition is managed by the Ground Launch Sequencer software. These interruptions will be in response to NTD/TD, Range Safety/Cargo, or Integration Console hold switches or monitored measurement out of tolerance condition(s).

On NASA missions with IUS payload, IUS telemetry from the T-0 lines is monitored in the Checkout Station (COS) on CCAFS. The capability exists for the COS computers to be linked with the Ground Launch Sequencer (GLS) via the range safety circuits in the Range Control Center. Any parameters which fail between T-9 minutes and counting, and T-10 seconds would cause an automatic hold or cutoff of the launch countdown.

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Terminal Countdown Hold Points

T-9:00 minutes	Prior to GLS activation
T-7 minutes, 30 seconds	Prior to OAA retract
T-5:00 minutes	Prior to APU start
T-4:00 minutes	Prior to Purge Seq 4
T-2 minutes, 55 seconds	Prior to ET LO2 prepress
T-1 minutes, 57 seconds	Prior to ET LH2 prepress
T-31 seconds	Prior to Auto Seq Start

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