LOCOMOTIVE SHUTDOWN

BUILDING AMERICA®

Locomotive Shutdown.

Purpose: To ensure locomotives are shut down in a safe and efficientmanner to reduce fuel consumption and emissions while maintaining their operating availability. Rule 32.20

	Unit Locations		
	Road	Yard/Terminal	Shop/Service Track
Work Group responsible for shutting down the unit	Road Crew	All Crews, Supervisors, and Managers	All Mechanical Department Employees
When to shut down the unit	Unattended longer than 15 minutes	Unattended longer than 15 minutes	Unattended longer than 15 minutes
Application of fuel conservation rules	Center the reverser when stopped. Use AESS override feature if necessary to maintain A/C or heat when locomotive is attended. Shut down when in consist as trailing unit and isolated.	Shut down all units unless engaged in continuous switching operations. During short-term shutdown of RCL units, do not turn off circuit breakers or open battery knife switch.	Units may be started only when necessary for movement or as required for maintenance activities.
Ambient Temperature	Shut down all trailing units when temperature is expected to be 35° or greater.	Shut down all units when temperature is expected to be 35° or greater.	Shut down all units when temperature is expected to be 35° or greater.
Exceptions	Do not shut down linked Distributed Power Units (DPU) attached to a train.	Always shut down Genset units regardless of air temperature.	None

When Should I Shut Down a Locomotive?

GCOR 32.20.2

Shut down all diesel engines to be left standing unattended for 15 minutes or longer. However, the lead locomotive of the consist must be left running if needed to maintain the air supply on the train. It is not necessary to shut down DPU locomotives that are actively linked.

The following guidelines apply:

- Keep the lead engine idling to maintain air pressure if coupled to a train and not equipped with AESS.
- Shut down trailing locomotives if the idle time is expected to exceed 15 minutes or longer. If you don't know, shut it down.
- Shut down all light locomotives if outside air temperature is 35 degrees or more.
- Shut down when in consist as trailing unit and isolated.
- Tag any locomotives with weak batteries or other condition that prevents starting. Report the condition to the locomotive help desk and include in the electronic engine defect report.
- Local managers do not have the authority to allow diesel engines to idle.
- Report any locomotive with disabled AESS or SmartStart to the Mechanical Desk and the Engine Defect (ED) reporting system. If AESS is working properly, the Indicator light displays green on EMD AESS and SmartStart. GE AESS displays "ready."

How Do I Shut Down the Locomotive?

GCOR 32.20.2

1. Properly secure equipment. Set hand brakes on all units.
2. Fully apply independent brake; make a 20# automatic brake application.
3. Turn generator field switch to OFF position.
4. Remove and stow the reverser.
5. Move the engine control switch to Start/Stop/Isolate position.
6. If engine has been at throttle 4 or lower during the past 10 minutes, push the Engine Stop button until the engine stops.
7. Turn off required circuit breakers; however, some breakers must be left on.

The circuit breakers illustrated below are to always be in the on position.

8. Wait five minutes after the engine stops and open the battery knife switch, unless the engine has been at throttle 4 or lower during the past 10 minutes.

   NOTE: The five-minute wait is not required on low-horsepower engines.

9. Pull the battery knife switch open after required wait time.

   NOTE: If battery knife switch is pulled, cab signal test must be performed in CCS/ATC territories.

Don't assume someone else will do it for you; ask questions about the locomotive's status.

When It's Necessary to Keep the Lead Locomotive Idling.

Should the lead locomotive need to idle for heating or air conditioning, use the reset button on the lead locomotive to override the AESS feature.

GE Display Panel

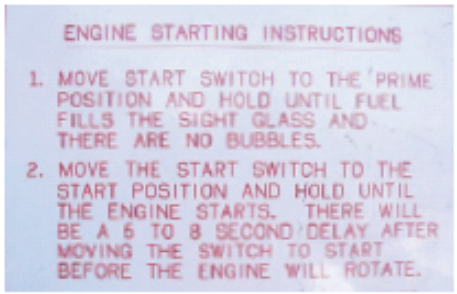
EMD Display Panel

NOTE: Some AESS reset keys are located on the back panel of the electrical cabinet. Other reset keys are located on the operator control screen.

How Do I Start the Locomotive?

GCOR 32.20.3

Engine Starting Instructions.



Air Brake and Train Handling Rule 32.20.3 explains general requirements for starting the locomotive diesel engine. It is necessary to follow any starting instruction posted on the locomotive or instructions displayed on the electronic screens.

Illustrated above is an example of the delayed starter engagement instructions on some GE locomotives.

Prime Engine Before Starting.

Hold start switch in the prime position until fuel fills the sight glass. Crank the engine until starting occurs (not longer than 20 seconds on EMD engines).

NOTE: Some engines may not crank for several seconds after moving the switch to "START."

LOCOMOTIVE SHUTDOWN

FAST SIMPLE SMART

To complete required personal training plan, access the online course "Locomotive Shutdown" (LSSUE) located on the Employees Web site. Go toTraining and Testing and search for Locomotive ShutdownClick on Locomotive Shutdown, then Go to Content.

"Locomotive shutdown is a critical part of managing our natural resources and reducing our environmental impact. The process for locomotive shutdown will help Union Pacific achieve our financial and environmental goals without reducing velocity."

– Larry Breeden, General Manager, Operating Practices

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