5.25   PARKED REGENERATION

Regeneration is the oxidation of soot in the Aftertreatment Device (ATD). This process happens during the normal operation cycle of the vehicle; it can occur both passively and actively. If the ATD is not capable of completing a successful regeneration due to duty cycle constraints or other restrictions, a parked regeneration may need to occur.

5.25.1   OPERATION

To initiate a parked regeneration, the following must occur in one ignition cycle:

1. The engine should be fully warmed up and operating on thermostat temperature (>60°C)

2. Engine Speed should be < 1000 rpm (CPC R2.0 or later).

3. Vehicle speed must be 0 mph.

4. Cycle the park brake OFF to ON – once an ignition cycle.

5. Cycle the clutch pedal (if configured) – once an ignition cycle.

6. Park Brake must be ON and the clutch must be released.

7. For J1939 transmissions, the transmission must be cycled to Drive, then back to Neutral and remain in Neutral.

8. Engine should be on the idle governor (can not be in Fast Idle or PTO Mode – not applicable for fire truck applications).

9. Hold the Regen Switch to the ON position for five seconds and release.

When the request is accepted, the DPF Regeneration Lamp will turn on for one second and then go off for the rest of the parked regeneration and the engine RPM will increase. The HEST Lamp will flash once every 10 seconds. Once the stationary regen is completed successfully, the DPF Regeneration Lamp will remain off and the engine will return to base idle.

If any of the above requirements are removed, the engine will return to idle.

High idle regen initiated by the tool will continue and complete regeneration even if the tool is disconnected.

To cancel the manual regeneration, the driver can toggle the Regen Switch to ON for 5 seconds. The DPF Regeneration Lamp will turn on for one second to show acceptance of the cancellation request and then return to the appropriate state as defined by the current level of soot in the engine.

Regeneration Options (MCM V61.4 or later; MCM V9.6.1 or later)

With these software versions, two new regeneration options are available:

☐ DPF Zone Turn On Regen Switch – This feature can be configured to allow a DPF
Regeneration via the DPF Regen Switch based on the zone that is programmed
(DPF_Zone_Turn_On_Regen_Switch). The switch request will only be honored for the
zone programmed or greater as listed in Table 5-96.

☐ Park Brake on Dosing Inhibit – This feature if enabled will not allow dosing unless the
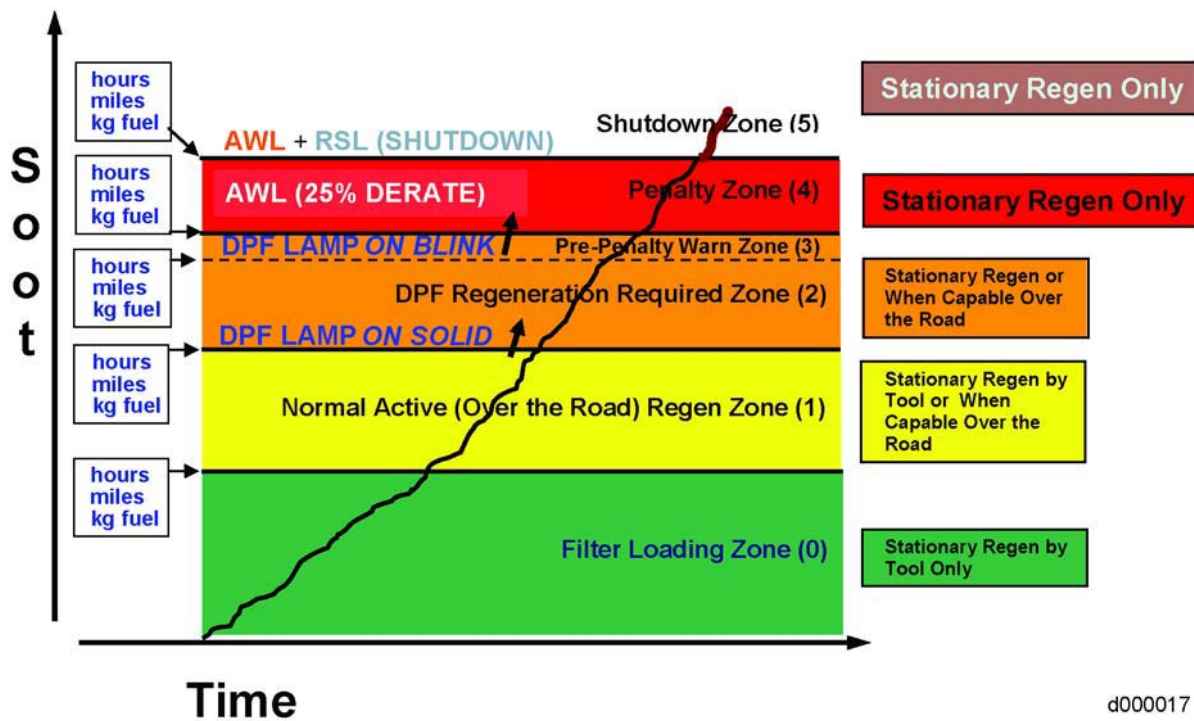park brake is grounded.

Figure 5-30   DPF Zone Turn On Regen Switch

5.25.2 DPF PARKED (STATIONARY) REGENERATION FOR HAZARDOUS APPLICATIONS ONLY

The MCM should be configured to not allow automatically triggered over-the-road regenerations (DPF Manual Regen Only Enable = Enabled).

The appropriate options, based on the MCM, are listed in Table 5-92.

Application	MCM Setting	CPC Setting
Standard	DPF Manual Regen Only Enable – Disabled	DPF Stationary Regen Only – 1 Dash switch requests parked regen only
Hazardous	DPF Manual Regen Only Enable - Enabled	DPF Stationary Regen Only – 0 Dash switch requests parked and in transit regen DPF Stationary Regen Only – 1 Dash switch requests parked regen only

Table 5-92   Parked Regeneration Options

There are two CPC options:

- ☐ DPF Stationary Regen Only = 0 – Dash switch requests parked and in transit regen
- ☐ DPF Stationary Regen Only = 1 – Dash switch requests parked regen only

DPF Stationary Regen Only = 0-Dash switch requests parked and in transit regen – This option allows the DPF Regeneration Switch to request a parked regeneration if the parked regeneration entry conditions are met (refer to section 5.25.1). This option also allows MCM initiated over-the-road regenerations to occur via the Regen Switch. See Figure 5-31. ▌

DPF Stationary Regen Only = 1-Dash switch requests parked regen only – This option ONLY allows a parked regeneration to occur using the DPF Regeneration Switch. The MCM will be unable to initiate an active over-the road regeneration when this is enabled via the Regen Switch.. ▌
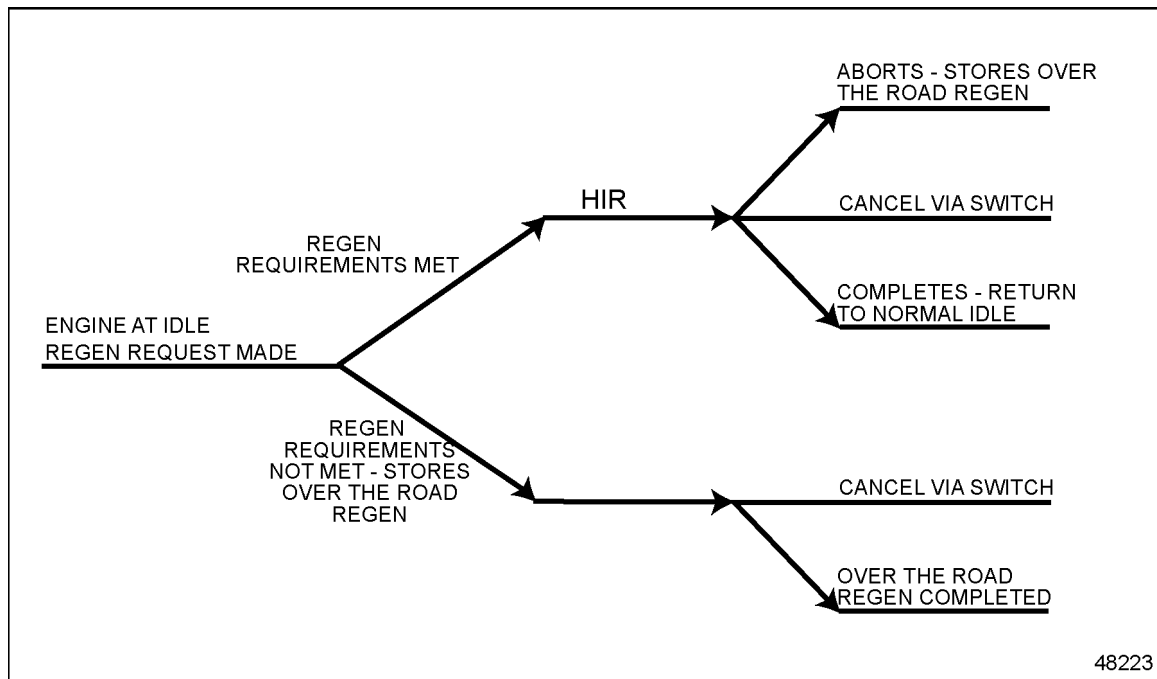
Figure 5-31   Parked Regeneration – Hazardous Applications

Programming Requirements and Flexibility

The parameters listed in Table 5-93 must be set for manual transmissions.

Parameter Group	Parameter	Setting
13	Clutch Switch Config	1 – 1 Clutch Switch
13	4 08 DI Selection	1 – 1 Clutch Switch
13	Trans Neutral Input Config	0 – Hardwired 255 – Not Available (typical setting)
13	Park Brake Switch Config	0 – Hardwired (typical setting) 1 – CCVS1 2 – CCVS2 3 – CCVS3
13	1 02 DI Selection	1 – Enable Park Brake Interlock
8	Vehicle Speed Sensor	4 – Magnetic Pickup Vehicle Speed Sensor

Table 5-93   Parameter Settings for Manual Transmissions

The parameters listed in Table 5-94 must be set for Allison, Eaton UltraShift transmissions.

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Parameter Group	Parameter	Setting
13	Clutch Switch Config	0 – No Clutch Switch
13	4 08 DI Selection	0 – Disable
13	Trans Neutral Input Config	1 – Info from J1939
13	Park Brake Switch Config	0 – Hardwired (typical setting) 1 – CCVS1 2 – CCVS2 3 – CCVS3
13	1 02 DI Selection	1 – Enable Park Brake Interlock
8	Vehicle Speed Sensor	3 – J1939 ETC1

Table 5-94   Parameter Settings for J1939 Transmissions (Allison, Eaton UltraShift, Eaton AutoShift)

The parameter listed in Table 5-95 is optional for hazardous applications.

Parameter Group	Parameter	Description	Default	Access
46	DPF Stationary Regen only	0 – DPF Regen Switch can request parked regen or over-the-road regen 1 – DPF Regen Switch can request parked regen only.	1 – Enabled	VEPS, DRS

Table 5-95   DPF Stationary Regen Only Parameter

Parameter Group	Parameter	Options	Default	Access
MCM	DPF Zone Turn On Regen Switch	1–6	2	VEPS, DRS
MCM	Park Brake On Dosing Inhibit	0 = Disabled 1 = Enabled	0 = Disabled	VEPS, DRS

Table 5-96   Optional MCM Features for Regeneration