Other Categories Using SCR System

- OFCI Products
- Light-Duty Vehicle (LDV) / Medium-Duty Vehicle (MDV) Chassis Products
OFCI Products
OFCI Issue
Safe Harbor Issue

• Safety Issues for equipment/operator

• Possible Types of Engine Inducements:
  • Zero work for the equipment
  • Idle-Only
  • Forced Shut-down
  • Limited Re-starts
**GOAL:** Discourage repeat tampering and repeat use of poor quality reductant

**KEY POINTS:**
- System should monitor for repeat faults for a minimum of 40 engine hours or minimum of 160 real-time clock hours
- Return to final inducement for repeat offense within – 60 minutes
- Repeat offense – Any 2nd offense
OFCl Issue
Delegated Assembly

• **GOAL:** All system components designed to comply and installed in certified configuration

• **KEY POINTS:**
  - Components to be considered in addition to other devices:
    – Reductant storage (configuration and volume)
    – Freeze protection system
    – How SCR inducement triggers are affected
OFCI

Questions / Answers
Compression-Ignition and Heavy-Duty Certification

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LDV/MDV Chassis
Reductant Level

Goals: Minimal vehicle operation when SCR system is no longer able to dose

Key Points:
- Reductant level is indicated to operator
- Initiate inducement early enough so that final inducement is engaged prior to noncompliance
- Any driver inducement should account for safety concerns
- Notify operator at least twice prior to final inducements

Inducements:
- The specific strategy is at the manufacturer’s discretion but the operator should be warned.
- Several options for final inducement.
Reductant Level

Example 1

**Step 1:** When sufficient reductant remains in the reductant tank corresponding to the reductant quantity required for driving the range of four diesel fuel tankfuls, warning signals consisting of a reductant light and audible chimes should begin to alert driver of low level of reductant remaining.
Step 2: When sufficient reductant remains in the reductant tank corresponding to the reductant quantity required for driving the range of two diesel tankfuls, a noticeable vehicle speed limitation would be imposed and would continue until the next trigger is reached.
Reductant Level Inducements

Example 1-con’t

Step 3:

*When*

- The tank reads empty to the operator but sufficient reductant remains in the reductant tank corresponding to the reductant quantity required for driving the range of one diesel fuel tankful.
- A more significant vehicle top speed limiter occurs.

*Then if one of the following occurs*

- Diesel fuel refueling (must be defined)
- Vehicle parked or idled (must define)
- Vehicle restarted

Final inducement is activated (e.g., 5 mph top speed, idle only, no start).
Reductant Quality

• Frequent reductant quality assessments must be made.

• Examples presented earlier are appropriate for the LDV/MDV category with vehicle speed limitations replacing engine derates and mileage limits (added to) time limits.
Tampering

- Other tampering deterrents may be acceptable
- The disconnection of any sensor that stops the flow of reductant should trigger inducements
- Examples presented earlier are appropriate for the LDV/MDV category with vehicle speed limitations replacing engine derates and mileage limits replacing (or added to) time limits.
LDV / MDV Chassis

Questions / Answers
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