GTR #13 (Phase 2)
FIRE TEST DEFINITION
Task Force 4 Status

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October 2020
Background
FIRE EXPOSURE TEST IN CURRENT GTR #13

• Builds on excellent CNG experience

• Localized fire stage added based on on-road experience in the US.
  ➢ Challenges the ability of TPRD(s) to sense fire and to activate.
GTR #13 PHASE 2
TF4 OBJECTIVES

• Address variability noted in fire test results at various test sites.

• Ensure test method is applicable up to heavy-duty vehicles
STATUS

• Burner configuration selected for uniform temperatures and stable operation.
  ➢ LPG fuel nozzles with air pre-mix for stable operation.
  ➢ Nozzles located every 50mm on 5 fuel rails for uniformity.
  ➢ Burner width fixed at 500mm regardless of cylinder diameter.

• LPG settings defined based on JARI testing.
  ➢ Temperature measurements from JARI vehicle fire tests used to establish equivalent fire exposure in localized and engulfing fire stages.

• “Time out” added to the fire test to accommodate venting through container surfaces or well protected containers that do not need TPRDs to prevent rupture.
  ➢ Test terminates at 30 minutes for light duty vehicles and 60 minutes for heavy duty vehicles.
  ➢ Additional ultimate strength test required at 180% NWP to demonstrate adequate stress rupture withstand for emergency response.

• Need for separate bonfire test (under 6.2.5.2) eliminated based on decision to allow freedom to rotate or translate the CHSS under test, even when vehicle-specific features are included.

• Working draft of proposed changes to the fire test has been prepared and is being reviewed by TF4.
OPEN ITEMS

• Finalization of fire test method for cylindrical containers.
  - Selection of fuel flow (heat release) settings, particularly for the engulfing fire stage.
  - Extension of engulfing fire from the localized fire zone -- two directions or one?
  - Maximum length of engulfing fire zone – 1.65m or greater?
  - Definition of container cooldown if the fire test times out.
  - Harmonization of terminology with TF3.

• Determination of adjustments (if any) for conformable containers.
  - Should length or width of burner be different from cylinders?
  - Other changes?

• Round-robin testing to confirm repeatability of test results world-wide.