

Dispenser fire  
incident at bp  
Mabopane  
forecourt on  
07 February  
2022



# What happened?

07 Feb 2022, 08H14



1. Customers #1 and #3 competed to get to the pump first.

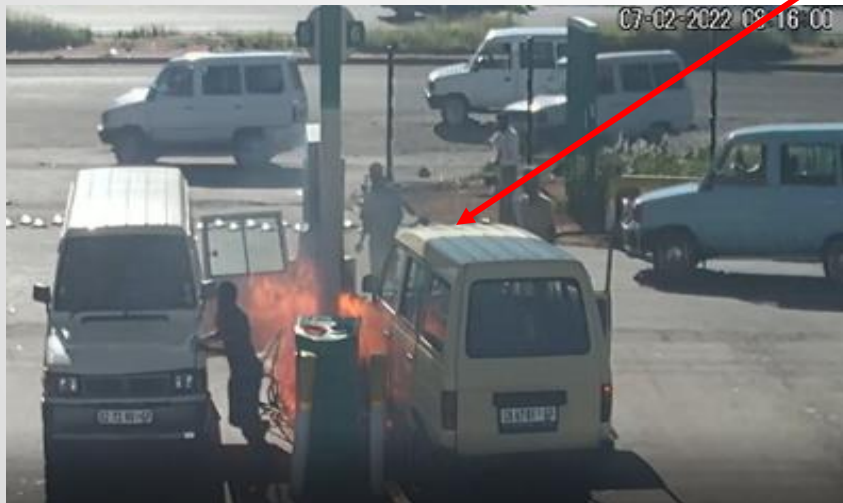
2. Customer #1 Maneuvered to the left at an angle and collided with the pump to avoid colliding with customer #3.

3. Customer #1 knocked the dispenser with his vehicle's left side corner light, breaking the ULP 95 hose's safety swivel breakaway coupling and all three product (ULP 93,95 and Diesel 50) shear valves underneath the dispenser riser resulting in LOPC.

4. The spilled product from the hose and nozzle was immediately ignited by customer #1 **vehicle's energized light bulb** which broke off on impact causing electrical short circuit.

5. The onsite first responders activated the emergency stop button to shut off all product pumps. After a brief struggle to access the fire extinguishers, the fire was eventually extinguished limiting the spread of damage only to dispenser pump 5/6 and the two vehicles.

Source of Ignition

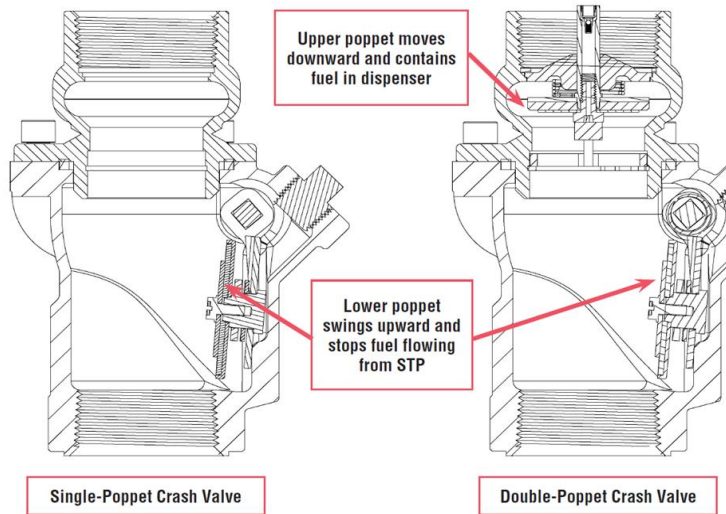


# What went wrong?



1. The crash barriers that are installed at the forecourt were not able to prevent the dispenser from vehicle collision. That is because existing bp generic crash barrier design is based on protecting the dispenser against impact from vehicles that are approaching the dispenser in the direction of traffic and not from a side or at an angle.

2. Fuel from the dispenser riser and filters spilled into the sump when the single poppet shear valves broke. This resulted in the flash fire which started outside of the dispenser to develop into a pool fire underneath the dispenser sump. That is because a single poppet shear valve does not stop the reverse flow from the dispenser side when it shears off.



3. Progressing of flash fire to a pool fire was not timely stopped due to first responder's struggle to break the glass to access the keys for the fire extinguisher cabinet. This was because the cabinets doors were damaged providing very little resistance to be able to break the glass



4. There was a continuous drip of fuel from the hose end which kept the flame burning after it was initially ignited during the first flash. This was because the in-line valve of the breakaway coupling did not fully seal off the fuel from the hose when the hose and nozzle separated upon impact. The swivel integral valve was mechanically damaged during the collision.



# Local Actions



<p>Action/s defined by business</p>	<ol style="list-style-type: none"><li>1. Benchmark the <u>forecourt bollard design against global and local bollard designs</u> to review various solutions to address this risk of <u>side impact</u> to the dispenser.</li><li>2. Initiate a MOC which will outline a program to <u>install the double poppet shear valves</u> across the network.</li><li>3. Dealer to train all staff on the <u>Emergency Response Plans</u> and conduct full scale drill exercises on fire-fighting.</li><li>4. Bp Territory Managers to conduct <u>self-verifications</u> to ensure that dealer checks on safety critical equipment are completed and documented as per the bp Operating Manuals.</li></ol>
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