

**Name of the organization**

Health and Safety Executive

**Name of the infrastructure / laboratory**

HiPress-High-Pressure facility

**Address and country of the infrastructure / laboratory**

Health and Safety Laboratory, Harpur Hill, Buxton, Derbyshire, SK17 9JN, United Kingdom

**Person responsible of the access / Contact person**

Dr Roger Brentnall

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**Main field of activity of the infrastructure / laboratory**

► Transportation and Refueling Infrastructure

**Short description of the infrastructure / laboratory**

The HSL High pressure hydrogen facility is capable of compressing storing and releasing hydrogen at pressures of up to 1000 bar. The system is engineered for high release flow rates and has a maximum outlet orifice of 9.5 mm. The facility consists of a manifold system for hydrogen and purge gas cylinder packs, this manifold leads to an air operated gas booster system which increases the pressure of the gas and feeds it into two 1000 bar storage vessels each of 50 litres capacity. The control of the facility is automated for fill and release operations and is controlled via a programmable logic controller. The facility can be configured in a number of ways, including transfers between vessels where one vessel represents a filling station dispenser and the second vessel a vehicle tank receiving fuel.

**Main research area(s) of the infrastructure / laboratory**

High pressure vehicle refueling trials. Testing high pressure relief valves. Investigation of "Spontaneous Ignition" of hydrogen.

**Instruments and tools available for the above mentioned research**

The control system continuously logs all the system variables such as temperature and pressure. The following parameters can be preset in the control system: Release pressure - Release duration - Ignition delay - Type of ignition (continuous, single spark or none - Release in response to external event trigger

