

From: Nick Jones <[REDACTED]>
Sent: 18 November 2022 14:29
To: KGSP <[REDACTED]>
Subject: Keuper Underground Gas Storage Facility. Middlewich

For the attention of Richard Stevenson.

Good Afternoon Richard.

My name is Nick Jones. I live in Middlewich Cheshire, hence I've received details of the Planning Application for the nature of gas stored at your Underground Gas Storage Facility.

I've had a quick read of your Preliminary Safety Assessment and have a number of questions.

Recognising the Safety Assessment is in its preliminary stage, the document relies heavily on "signposting" to support arguments. The document concludes that hydrogen gas can be generically safely stored in underground caverns.

My questions relate more to the specific application for the safe storage of hydrogen at your facility, not to the generic storage of hydrogen.

As with any industry, risks posed by their operations, requires to be demonstrated to be, As Low As Reasonably Practicable. This applies to the public, workforce and environment, as you will be aware.

Having a little knowledge sometimes is a bad thing, but my understanding of hydrogen is that very low concentrations in air (4% volume) becomes hazardous and requires a very small ignition source.

Storage of hydrogen presents known challenges due to its very searching nature and propensity to leak through seals and joints.

The risks presented from storage of hydrogen, on my understanding, must be greater than that of natural gas.

This is due to:

- i the lower flammable limits
- ii the lower ignition energy required
- iii the propensity for hydrogen to search out leak pathways
- iv the higher energy density of hydrogen compared to natural gas.

My questions are:

1. Could you please provide me with the key hazards and their hazard management strategies for the storage of hydrogen at the Keuper Underground Gas Storage Facility. The question relates to the specific site and not the generic storage of hydrogen. This question relates to all phases of operation ie design, commissioning, operation and decommissioning.
2. A summary of how the safe operation and maintenance of the facility will be regulated and demonstrated.
3. A summary of why the risks posed to the Public, Workforce and environment are ALARP.

Many thanks,
Nick Jones.