

The UK became a net importer of gas during 2004 and faces an increasing dependency on imports, yet has very little gas storage capacity. The UK's capacity to import, transport and store gas and liquid natural gas (LNG) has to be improved, requiring greater investment in new gas supply infrastructure. Construction of appropriately sited onshore underground gas storage (UGS) facilities is needed. However, local groups oppose most proposed UGS sites on the grounds of safety, citing the dangers of gas migration and rare fatal events, mostly in America. This paper summarizes 228 reported events of widely varying cause, nature and severity at underground fuel storage (UFS) facilities; the majority at USA SPR facilities. Since UGS was first undertaken in 1915, reports of 13 fatalities, around 72 injured and the evacuation of at least 6700 people are found at UFS sites. Some communities have experienced multiple evacuations. In the context of the danger posed to the general public, three of those killed were staff at two UFS facilities. UGS (including LPG) has led to 10 civilian deaths, 25 injured and c. 1250 evacuated. In other areas of the energy supply chain, casualties are orders of magnitude greater, with at least 1525 dead, 6826 injured and the evacuation of over 7000 at incidents involving above ground fuel storage tanks since 1951. When considering UK UGS applications, the risk of UGS and wider UFS experiences should be put into context. Worldwide, over 90 years experience in UGS now exists, with around 630 facilities of different types currently operational. Technologies used are often those of, or derived from, a well-regulated oil and gas exploration industry. In contrast to public perception, industry and academia recognize that UGS has an excellent health, safety and environmental record. Although it should not be claimed that gas will never be found outside the intended well or storage facility area, UFS casualty figures appear to corroborate claims by supporters of the technologies that salt caverns provide one of the safest answers to the problem of storing large amounts of hydrocarbons and that even in urban areas underground gas storage, oil and gas production can be conducted safely if proper procedures are followed. If gas is found outside the intended system, then after recognition of the problem, mitigation and safe operating procedures can and have been developed.