

RISK ASSESSMENT:

Generic Hydrogen Site Risk Assessment (Low Impact Part A Installation SR2009 No2)



Directorate: Oxfordshire Fire and Rescue Service

Service Area: Hyer (Hydrogen) Project - Hydrogen production, storage and refueler at Drayton Depot.

Ref No:	OCC/HS/HYD/0001
Owner:	Seema Dave
Responsible Person:	Jason Crapper
Additional Reviewer:	Sarah Vaughan
H&S Advisor:	Andy Bradford

Review Frequency:	1
Review Date:	28 February 2025
Next Review Due:	28 February 2026
Risk Score:	2

NOTE:

- This Risk Assessment is based on the Environment Agency 'Generic Risk Assessment for standard Rules set number SR2009No2 v4.0'
- The Assessor should be competent in his/her knowledge of the activity, process and trained in risk assessment techniques.
- A Health and Safety Advisor must be involved in all Risk Assessment Reviews

Ref	Data & Information				Action (by permitting)		Risk		
	Receptor	Source	Harm	Pathway	Justification of Risk	Risk Management	Likelihood	Severity	Risk
	What is at risk? What is to be protected?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	On what was the judgement based on?	How best can the risk be managed to reduce the magnitude?			
1	Local Human Population	Releases of particulate matter (dusts) and volatile organic compounds (VOCs)	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	The installation must comply with the LII criteria without having to rely on active abatement for releases to the environment outside of any buildings. There is low potential for exposure if anyone is living or working close to the site (apart from the operator and employees)	SR - activities must be operated in accordance with LII criteria. SR - emissions of substances not controlled by emission limits. SR (if required) - emissions management plan.	1	2	2
2	Local Human Population	As above (dust)	Nuisance - dust on cars, clothing etc.	Air transport then deposition	1 Local resident but there is low potential for exposure.	As above	1	2	2
3	Local Human Population	Odour	Nuisance, loss of amenity	Air transport then inhalation	The installation is considered as low impact as it give rise to an offensive odour outside the site boundary. Local residents often sensitive to odour but there is low potential for exposure.	SR - activities must be operated in accordance with LII criteria. SR - emissions shall be free from odour. SR (if required) - odour management plan.	1	2	2

Ref	Data & Information				Action (by permitting)		Risk		
	Receptor	Source	Harm	Pathway	Justification of Risk	Risk Management	Likelihood	Severity	Risk
	What is at risk? What is to be protected?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	On what was the judgement based on?	How best can the risk be managed to reduce the magnitude?			
4	Local Human Population	Noise and vibration	Nuisance, loss of amenity, loss of sleep.	Noise through the air and vibration through the ground.	The installation would not be considered to be low impact if it could give rise to noise noticeable outside the site boundary. Local residents often sensitive to noise and vibration but there is low potential for exposure.	SR - activities must be operated in accordance with LII criteria. SR - emissions shall be free from noise and vibration. SR (if required) - noise and vibration management plan.	1	2	2
5	Local human population and local environment	Flooding of site	If materials are washed off site they may contaminate buildings / gardens / natural habitats downstream.	Flood waters	LII criterion requires that satisfactory containment measures to prevent fugitive emissions to surface water, sewer or land are in place and adequately maintained at the installation at all times. This requirement applies to all substances present on site and in any quantity. Materials washed off site will add to the volume of the local post-flood clean up workload, rather than the hazard.	SR - activities must be operated in accordance with LII criteria. SR - management system (will include flood risk management).	1	2	2
6	Local human population and / or livestock after gaining unauthorised access to the installation.	All on-site hazards: materials; machinery and vehicles	Bodily injury	Direct physical contact	LII criterion requires that satisfactory containment measures to prevent fugitive emissions to surface water, sewer or land are in place and adequately maintained at the installation at all times. This requirement applies to all substances present on site and in any quantity so only a medium magnitude risk is estimated.	SR - activities must be operated in accordance with LII criteria. SR - activities shall be managed and operated in accordance with a management system (will include site security measures to prevent unauthorised access).	1	2	2

Ref	Data & Information				Action (by permitting)		Risk		
	Receptor	Source	Harm	Pathway	Justification of Risk	Risk Management	Likelihood	Severity	Risk
	What is at risk? What is to be protected?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	On what was the judgement based on?	How best can the risk be managed to reduce the magnitude?			
7	Local human opulation and local environment.	Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff, fire fighters or arsonists/vandals. Pollution of water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run- off from site and via surface water drains and ditches.	LII criterion requires that satisfactory containment measures to prevent fugitive emissions to surface water, sewer or land are in place and adequately maintained at the installation at all times. This requirement applies to all substances present on site and in any quantity so only a medium magnitude risk is estimated.	As above. SR - management system (will include fire and spillages).	2	2	4
8	Local human population and local environment	Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff or fire fighters. Pollution of water or land.	As above.	The installation intrinsically has a low environmental impact. Risk of accidental combustion of materials is moderate.	As above	1	2	2
9	All surface waters close to and downstream of site.	Spillage of liquids, contaminated rainwater run-off from materials.	Acute effects: oxygen depletion, fish kill and algal blooms.	Direct run-off from site across ground surface, via surface water drains, ditches etc.	LII criterion requires that satisfactory containment measures to prevent fugitive emissions to surface water, sewer or land are in place and adequately maintained at the installation at all times. This requirement applies to all substances present on site and in any quantity so only a low magnitude risk is estimated.	SR - activities must be operated in accordance with LII criteriaR - All liquids shall be provided with secondary containment . SR - Substances from point source emissions to water or air shall not be released at a rate that is greater than that determined as "insignificant", as set out in the Environment Agency's H1 Environmental Risk Assessment, Version 2.0, April 2010, Annexes (d) and (f). Run-off restricted by SR on emissions of substances not controlled by emission limits .	2	2	4

Ref	Data & Information				Action (by permitting)		Risk		
	Receptor	Source	Harm	Pathway	Justification of Risk	Risk Management	Likelihood	Severity	Risk
	What is at risk? What is to be protected?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	On what was the judgement based on?	How best can the risk be managed to reduce the magnitude?			
10	All surface waters close to and downstream of site.	As above	Chronic effects: deterioration of water quality	As above. Indirect run- off via the soil layer	LII criterion requires that satisfactory containment measures to prevent fugitive emissions to surface water, sewer or land are in place and adequately maintained at the installation at all times. This requirement applies to all substances present on site and in any quantity so only a low magnitude risk is estimated.	As above	2	2	4
11	Abstraction from watercourse downstream of facility (for agricultural or potable use).	As above	Acute effects, closure of abstraction intakes.	Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction.	Watercourse must have medium / high flow for abstraction to be permitted, which will dilute contaminated run-off.	As above	1	2	2
12	Groundwater	As above	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole	Transport through soil/groundwater then extraction at borehole.	LII criterion requires that there must be no planned or fugitive emission from the permitted installation into the ground.	As above	1	2	2
13	Local human population	Contaminated waters used for recreational purposes	Harm to human health - skin damage or gastro intestinal illness.	Direct contact or ingestion	Unlikely to occur, but might restrict recreational use.	SR - emissions of substances not controlled by emission limits. SR (if required) - emissions management plan.	1	2	2

Ref	Data & Information				Action (by permitting)		Risk		
	Receptor	Source	Harm	Pathway	Justification of Risk	Risk Management	Likelihood	Severity	Risk
	What is at risk? What is to be protected?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	On what was the judgement based on?	How best can the risk be managed to reduce the magnitude?			
14	Protected nature conservation sites	Any	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance etc.	Any	Operations have very low capacity to cause harm to and deterioration of nature conservation sites as their capacity to cause pollution is insignificant.	SR - activities must be operated in accordance with LII criteria. SR - activities must not be carried out on or immediately adjacent to a European Site, SSSI, National Nature Reserve, Local Nature Reserve or Ancient Woodland. SR - There must be no direct discharge of aqueous waste within 10km upstream of a European Site, or a SSSI; or within 100 metres upstream of a National Nature Reserve, Local Nature reserve or Ancient Woodland; or within a National Park. At these distances or above, the potential hazards from the permitted activities pose a low risk to the broad sensitivity of species and habitats groups. The tandard permit only applies at these distances or more.	1	2	2