Application to the relevant planning authority

The Planning (Hazardous Substances) Act 1990

The Town and Country Planning (Hazardous Substances) Regulations 2015 (Regulation 6)

Application for Hazardous Substances Consent

1

Applicant	Nick Price
Address	KP Snacks Ltd.
	Tyrrells Court, Stretford Bridge, Leominster
Post code	HR6 9DQ
Telephone number	01568 720244

Agent acting on behalf of the applicant	Maureen Darrie (GP Planning)
Address	iCon Environmental Innovation Centre, Eastern Way,
	Daventry
Post code	NN11 0QB
Telephone number	01162 649000

Correspondence (including any Notice) **to be sent to the agent** instead of the applicant? **Yes or No**?

Yes

If the applicant is not the person in control of the land to which the application relates, provide details of the **person in control of the land**.

Mrs Chase
Tyrrells Court
Stretford Bridge
Leominster
Hereford
HR6 9DQ

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Address or other location details of application site	Tyrrells Potato Crisps Ltd. / KP Snacks Ltd.
	Tyrrells Court
	Stretford Bridge
	Leominster
Post code	HR6 9DQ
OS grid ref	SO429559

3 Hazardous substance(s) covered by the application

(a) List named substances falling within Part 2 of Schedule 1 to the Regulations first, then list any substances falling within the categories in Part 1 of that Schedule; finally list substances falling within the description in Part3.

(b) Substances falling within Parts 1 or 3 of Schedule 1 to the Regulations may be listed under the relevant category or description or named specifically. Where a substance falls within Part 1 and 2 list under Part 2 only; where a substance falls within more than one category in Part 1 list under the category which has the lowest controlled quantity. Where a substance falling within Part 1 or 2 also falls within Part 3 list under the Part which has the lowest controlled quantity. The "controlled quantity" means the quantity specified for that substance in column 2 of Parts 1, 2 or 3 of Schedule 1 to the Regulations.

Table A

Name, or relevant category or description of substance	*Part number in Schedule 1 to the Regulations, and entry number if Part 2, category if Part 1, identity if Part 3*	*Do you have a current PHS consent* in respect of this substance? (Yes/No)*	*If "yes", state quantity for which consent granted*	*Maximum quantity proposed to be present in tonnes*
Part 2, 18 Liquefied flammable gases, Category 1 or 2 Natural Gas (LNG-Liquified Natural Gas). The Planning (Hazardous Substances) Regulations 2015	Part 2-18	NO	N/A	49 (assumed LNG density of 453 kg/m^3)
Petroleum Products	Part 2, 34c	NO	N/A	19.7

*a hazardous substances consent

4 Manner in which substance(s) are to be kept and used

For each substance, category or description of substance, covered by the application, provide the following information, referring to the substance location plan where appropriate.

- 1 x 49T (vessel 100% volume is 120m^3, storage at max 90% level, assumed density 453 kg/m^3) LNG above ground cryogenic pressure storage vessel is to be installed on site and will be replenished periodically by HGV tankers with a maximum LNG capacity of 23mT.
- Indicative LNG consultation zones - shown in Section 5e - are centred around the LNG tanker and the storage vessel.

(a) Tick one box below to show whether the substance(s) will be present for storage only **or** will be stored and involved in a manufacturing, treatment or other industrial process:

Table B

Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3	*Storage only*	*Stored and involved in an industrial process*
Part 2, 18 Liquefied flammable gases, Category 1 or 2 (LNG-Liquified Natural Gas), The Planning (Hazardous Substances) Regulations 2015	NO	YES

(b) For each vessel to be used for **storing** the substance(s) give the following information:

Table C (i)

*Vessel No**	*Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3*	*Installed above ground† (Yes/No)*	*Buried (Yes/No)*	*Mounded (Yes/No)*	*Maximum capacity (cubic metres)*	*Highest vessel design temperature °C*	*Highest vessel design pressure (bar absolute)*
LNG Vessel	Part 2, 18 Liquefied flammable gases, Category 1 or 2 (**LNG-Liquified Natural Gas)**, The Planning (Hazardous Substances) Regulations 2015	Yes	No	No	1 x 120m^3 (hydraulic capacity, fill level of 90%)	50	Design: 11.2 Test: **18.3**
Diesel Tank	Part 2, 34(c) diesel	Yes with integral secondary containment	No	No	1.5m^3	...	...

* identify by reference to substance location plan

† if "Yes", specify whether or not it will be provided with full secondary containment

(c) For each substance, category or description of substance, state the largest size (capacity in cubic metres) of any **moveable** container(s) to be used for that substance, category or description of substances:

Table C (ii)

Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3	*Storage area on site**	*Maximum capacity (cubic metres) of individual moveable containers*
None	NA	NA

* identify by reference to substance location plan

(d) Where a substance, category or description of substance is to be used in a **manufacturing, treatment or other industrial process(es)**, give a general description of the process(es), describe the major items of plant which will contain the substance(s); and state the maximum quantity (in tonnes) which is liable to be present in the major items of the plant, and the maximum temperature (°C) and pressure (bar absolute) at which the substance, category or description of substance is liable to be present:

Table D					
Substance including Part no. in Schedule 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3	*Description of process(es)*	*Major items of plant**	*Max. quantity (tonnes)*	*Max. temp. (°C)*	*Max. pressure (bar absolute)*
Part 2, 18 Liquefied flammable gases, Category 1 or 2 **(LNG-Liquified Natural Gas)**, The Planning (Hazardous Substances) Regulations 2015	LNG-Liquified Natural Gas will be used as fuel source for factory processes (fryers and ovens and for heating and hot water)	1-Horizontal Gas LNG-Liquified Natural Gas above ground pressure vessel. Regassification equipment including up to 6 x aluminium ambient vaporisers modules and appropriate pressure regulation equipment. LNG regassification plant feeds LNG-Liquified Natural Gas vapour to fryers, Oven, Central Heating and Hot Water.	49	50	Design Pressure: 11.2 Test: 18.3

*identify by reference to substance location plan

5 Additional Information

(a) If you have an existing PHS consent(s) as referred to in Table A, **attach a copy of each consent** to this application.

(b) **List the maps or plans** or any explanatory scale drawings of plant/buildings submitted with this application (**as a minimum submit a site map and a substance location plan –** see **Notes** below).

- GPP/KPS/TCL/19/01 (Revision 2) Site Context Plan
- GPP/KPS/TCL/19/02 (Revision 2) Site Location Plan
- GPP/KPS/TCL/19/03 (Revision 2) Substance Location Plan
- GPP/KPS/TCL/19/04 (Revision 2) Elevations of LNG Storage Vessel
- Drawing DWG 2151 Property Boundary
- Drawing DWG 2151 Substance Location Plan (showing diesel tanks)

(c) Provide a brief overview description of the **main activities** carried out or proposed to be carried out on, over or under the land to which the application relates.

1) KP Snacks

Current and future operation: Production of crisps and snacks, preparation for onward distribution.

Plan: Install 49T of LNG storage to displace existing 24 T LPG (Propane) storage. Propane is currently used for fryers and ovens and for heating and hot water as fuel in the production of crisps and snacks. LNG Liquefied Natural Gas is a cleaner burning fuel with much lower Carbon dioxide output reduction of 980 tonnes from current levels.

Feed LNG in liquid form to Ambient aluminium vaporisers, use vaporised LNG in place of LPG-Propane. LNG will be fed from the 1 x 49T cryogenic vessel through stainless steel pipework to the ambient vaporisers, after which an electric trim heater is installed to ensure that outgoing gas temperature remains above 0 degrees Celsius.

A new MDPE mains supply will be trenched over to the existing factory's pipework, with provision for supplying to future developments at site and in upgrading of existing pipework to existing processes to address concerns of infrastructure has outgrown current needs and to future proof the site production requirements.

(d) Provide details of how each relevant substance is proposed to be transported to and from the land to which the application relates, for example the size and frequency of vehicle deliveries, the size or maximum flow rate of pipeline imports/exports.

Substance including Part number in Schedule 1 to the Regulations, and entry number if Part 2, category if Part 1, identity if Part 3	*How, and other details such as frequency and quantity, transported to and from the land to which the application relates*	
	Transported to site	*Transported from site*
Part 2, 18 Liquefied flammable gases, Category 1 or 2 **(LNG-Liquified Natural Gas)**, The Planning (Hazardous Substances) Regulations 2015	The LNG-Liquified Natural Gas will be transported to the site by HGV tanker (up to 23 tonnes capacity). It is anticipated that the annual LNG-Liquefied Natural Gas consumption from the 1 x 49T tank will be 2,500 Tonnes per annum for the duration of the contract. Which will require an average of 2.4 fills from tanker per week except in periods of shutdown. Storage vessel contents to be monitored by remote telemetry to optimise delivery frequency with real time data to ensure maximum sized deliveries are made – thereby reducing the number of filling operations. The LNG-Liquified Natural Gas will be transported to the site by HGV tanker (up to 23 tonnes capacity).	It is not anticipated that LNG-Liquified Natural Gas will be removed from site during normal operation of the plant and process equipment; however, during routine maintenance of the vessel LNG-Liquified Natural Gas may be decanted into a tanker. This is not anticipated to be more frequent than 10 yearly.

(e) Provide details of the vicinity of the land to which the application relates, where such details are relevant to the risks or consequences of a major accident (relevant details include numbers of people in neighbouring developments that could be affected by a major accident).

Occupancy Levels

Expected Occupancy Levels updated from information provided on [15/10/2018] reference Zone distances.

a) Inner Zone (160m) – 0 houses

b) Middle Zone (215m) – 0 houses

c) Outer Zone (285m) – 3 houses

(f) Provide a brief overview of the measures taken or proposed to be taken to limit the consequences of a major accident.

The 49T Vessel is to be above ground installed within a reinforced concrete compound with a low catchment wall around the perimeter. The compound will be sized so that it has at least 110% catchment volume of the vessel.

The vessel outlet valves will be fire-safe ROSOVs linked to the LNG-Liquified Natural Gas system ESD and controlled by a PLC designed in accordance with the requirements of BS EN 61511, a ROSOV will also be installed at the end of the gas compound prior to distribution pipework to the customer. The vessel will be installed with continuous vacuum monitoring and the support legs will be Passive Fire protected and protected against cryogenic temperatures. The ESD system has inputs from over-fill protection, over-pressure protection, Electronic Gauges (for contents, pressure and temperature), Gas detection, cold detection, flame detection and ESD button input. Alarms are locally and remotely accessible, and the system can also be monitored remotely.

Design will be subject to HAZID, HAZOP and LOPA processes before installation. All deliveries of LNG to site will be undertaken by directly employed Flogas Labour.

In addition to DSEAR zoning, the installation will have a minimum 15m “enhanced zone” around it. Within this zone there are no fixed sources of ignition or off-site boundaries allowed, and only Zone 2 electrics permitted.

<u>Minimising the risk of Vapour Cloud Explosion (VCE) at Tyrrells Crisps</u>

The risk of vapour cloud explosion will be significantly reduced by: -
Minimising congestion around gas equipment.
Maximising ventilation around the installation

Correct selection and location of equipment, particularly electrical equipment suitable for the area and application.

Correct working practices for personnel in and around the LNG-Liquefied Natural Gas equipment.

<u>Minimising Congestion</u>

LNG-Liquified Natural Gas is heavier than air at very low temperatures and is lighter than air at typical UK ambient temperatures. Therefore, upon an initial release LNG will first sink before warming and then rising and dispersing. In the event of a large or sustained release the ground will cool and evaporation will slow. There is the potential during a release to accumulate to a flammable mixture between 5% & 15% in air. In order to prevent any leak of LNG building up to a potentially flammable atmosphere the gas compound shall be of open construction, all ducts leading into the gas compound (electrical cabling, etc) will be sealed with a suitable gas-tight sealant prior to the vessel being filled.

<u>Maximising Ventilation</u>

The natural ventilation on site will be maximised by use of open construction fencing for the gas compound. This will allow free flow of air through the compound to disperse any LNG-Liquified Natural Gas which my either leak or be released into the compound.

Correct Selection and Location of Equipment

The Dangerous Substances & Explosive Atmospheres Regulations will apply to this installation. The only zones that will be present will be Zone 1 or Zone 2. All electrical equipment will be suitably rated for the zone within which it is installed. Zones will be calculated using IP15 "Area Classification for Installations Handling Hazardous Substances". The zones which will be generated most frequently will be the zones around the fill point, there will be a small release of LNG liquid upon disconnection of the fill connection, as well as a limited release of LNG vapour from the vessel ullage valve during the filling process.

In order to minimise these risks, there will be a cold detection sensor and gas detection sensor located at the filling point. In the event of a leak, these sensors will trigger an ESD shutoff of valves as well as an alarm sounder and light. Any ducts, drains or gullies near the fill points will be outside of the calculated hazardous area or be suitably sealed.

Correct Working Practices for Personnel in and around the LNG-Liquified Natural Gas Equipment.

Delivering LNG-Liquified Natural Gas is the most hazardous operation which is regularly undertaken on the site, as this is when liquid connections are made & broken in the presence of personnel, and this must be a manned process.

In order to minimise the risks present, we ensure that all drivers are ADR qualified and that our directly employed staff regularly undergo skills assessment. All sources of ignition are controlled and the driver is under ultimate authority to not make the delivery if he deems the site unsafe. All delivery vehicles are fitted with a dead-man system which requires the driver to take positive action to continue filling every 120 seconds.

The gas compound will be enclosed by a security fence accessible only to authorised personnel. During delivery, a temporary exclusion zone will be established by the delivery driver. At all times access to the compound will be limited to the minimum required, and only ever to trained personnel under a written works instruction and relevant method statement whilst wearing the correct PPE for the operation and carrying a personal gas monitor.

The filling process may require small releases of Methane or LNG e.g. through making/breaking connections, which is taken into account by the DSEAR zones, all equipment will be suitably zoned for its location. The compound design will prevent gas from accumulating, the use of sealant in the ducts will prevent any gas tracking to a remote source of ignition.

Others

Civils
Catchment wall. Inclusive of Fire and Cryogenic Temperature Protective Coating to Supports, Legs and Saddles. Secure compound fencing.

Mechanical
Stainless steel pipework and fixings
Pressure and thermal relief valves
Vessel vacuum with continuous monitoring
Thermal insulation on liquid pipework
Gas Stenching Plant
Air compressor and associated equipment for provision to safety systems
Flame/Gas/Cold Detection for Gas Compound

(g) Where applicable, provide a statement that the proposal is a project or part of a project, that is subject to a national or transboundary environmental impact assessment or to consultations between Member States of the European Union in accordance with Article 14(3) of European Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.

N/A

(h) Give any further information which you consider to be relevant to the determination of this application.

The primary standard used for the design and installation of this LNG plant is BS EN 13645:2002. Plant will also be built to good industry practice (Flogas send representatives to IGEM working groups for LNG COP development).

Tanker Safety

The delivery tankers are equipped with features to ensure that the deliveries are made with the highest regard to safety of both life and property.

The primary safety feature of the tanker is the presence of Pressure Relief Valves (PRVs) which lift to relieve pressure in the tanker when it reaches a certain setpoint. The PRVs are sized in accordance with the requirements BS EN 13458.

The tankers are fitted with fire safe excess flow and non-return valves. Thermal relief valves are also fitted on the tanker pipework to prevent overpressure due to trapped liquid.

The tanker discharge rate is less than 10kg/second.

The tankers are fitted with Emergency Shut Down buttons which release the air from the actuated valves. Once activated in the event of an emergency this closes all actuated valves on the tanker and will stop the fill process. The tankers also have a 'Dead Man's Switch' which must be re-activated every 2 minutes by the driver, this device is to ensure the drivers full attention to the process throughout the delivery.

At the start of the fill process, chucks are placed at the tyres to prevent the tanker from rolling during the fill

Finally, all Flogas LNG tanker drivers are all ADR trained and so are qualified to handle the transport and carriage of hazardous materials including LNG. Regular audits and assessments are carried out to ensure driver compliance with training and processes. Initial LNG driver appraisals are also conducted at Isle of Grain terminal, with drivers required to successfully complete several monitored deliveries before being allowed to operate.

I/We hereby apply for hazardous substances consent in accordance with the proposals described in the application

Signed

on behalf of .....Mrs Chase.....
(insert name of person in control of the land if different to applicant)

Date .....22nd August 2019.....

To be accompanied by the certificate completed in accordance with regulation 5(2) of the Regulations (notice to owner by applicant), and the fee payable under regulation 55 of the Regulations.

Notes

"**Site map**" is a map, reproduced from, or based on, an Ordnance Survey map with a scale of not less than 1:10,000, which identifies the land to which the application relates and shows National Grid lines and reference numbers.

"**Substance location plan**" is a plan of the land to which the application relates, drawn to a scale of not less than 1:2,500, which identifies-

(a) any area of land intended to be used for the storage of the substance;
(b) where the substance is to be used in a manufacturing, treatment or other industrial process, the location of the major items of plant involved in that process in which the substance will be present; and
(c) access points to and from the land.