



**OFFICE OF
LICENSING &
GUIDANCE**

INSPECTORS REPORT ON A LICENCE REVIEW APPLICATION

To:	Directors	
From:	Patrick Byrne	- LICENSING UNIT
Date:	16/05/07	
RE:	APPLICATION FOR AN IPPC LICENCE REVIEW FROM FARRAGH PROTEINS, CROSSDONEY COUNTY CAVAN, LICENCE REGISTER P0025-04	

Application Details	
Class of activity:	Class 7.7.1 The disposal or recycling of animal carcasses and animal waste with a treatment capacity exceeding 10 tonnes per day.
Licence application received:	13/11/2006
Notice under Article 17 issued:	15/01/07
Information under Article 17 received:	07/03/2007, 08/05/07
Submissions received:	None
Site visit:	08/01/07

Company

A rendering plant was developed at the site in c. 1951. The installation was originally licensed by the Agency on the 02/02/1996 under the name of Monery By-Products Ltd. The original licence was reviewed on two occasions following grant of the original licence (21/05/1998 and 15/02/2001). The installation was purchased by College Proteins Limited (IPPC Licence reg. No. P0037-03) in December 2004, however the installation is registered with the Companies Registration Office as Farragh Proteins Ltd. The transfer of the licence has been assessed and facilitated as part of the licence review.

Since College Proteins Limited took ownership of the installation they have undertaken significant upgrading of the plant, machinery and infrastructure. The installation is involved in the rendering of animal by-products, the process generates tallow oil and meat and bonemeal (MBM). Farragh Proteins have identified that the

maximum capacity at the installation is 125,000 tonnes per annum, however the existing licence limited the throughput to 78,840 tonnes (216 tonnes per day) prior to the provision of alternative arrangements to treat gases.

The installation was previously operated as a Category 1¹ rendering plant but has been converted to a Category 3 plant in December 2004. The installation is located in a rural location in Co. Cavan c. 3km from the village of Crossdoney, Co Cavan. The activity operates 24 hours per day 6 days per week. There are 15 people employed at the installation

Reason for Licence Review

Farragh Proteins were required to submit a licence review application to update their existing licence (Reg. No. P0025-03) following a review of their existing licence by the Agency under Section 82(10) of the EPA Acts 1992 and 2003. The licence review therefore takes account of changes since grant of the existing licence, and updates emission limit values in accordance with BAT.

Process Description

The rendering process involves a number of stages which can be summarised as: raw material intake, crushing process, cooking process, pressing process, decanting process and milling. Associated with the activity are auxiliary services including steam production, odour abatement and waste water treatment.

- Raw material intake: Raw material is delivered to the installation from slaughtering, and processing plants etc. The material following weigh-in is tipped into one of two reception hoppers within the intake building.
- Crushing process: The material is carried by a screw auger to a crusher where the material is broken down to a maximum particle size of 50mm.
- Cooking process: The crushed material is then conveyed to the cookers. The cookers are heated by steam, within the cookers the moisture is reduced from 60% to 20%.
- Pressing process: The cooked material is then passed by conveyor to one of two presses. The presses compress the greaves (cooked animal by-product) to remove the tallow oil. The sterilised meal is held in a holding bin prior to milling.
- Decanting process: The tallow oil is decanted to reduce the solid content to less than 0.15%. Solid material from the decanting process is returned to the presses.
- Milling: The meal is milled to less than 2mm when cool. The milled meal (MBM) is then stored prior to removal off-site.

Odourous air from all stages of the process is directed to the biofilter or thermal oxidiser. Cooking gases are the most odourous gases, they are directed to the thermal oxidiser along with odourous air from the sterilisers, presses and space air. An air stream of c. 1,100,000m³/day is combusted in the thermal oxidiser. Odourous air extracted under negative pressure from within the buildings is directed to the biofilters on site where c.1,560,000m³/day is treated.

¹ Category 1, 2 and 3 animal by-products are defined under Articles 4, 5 and 6 respectively in Regulation (EC) No 1774/2002 of the European Parliament and of the Council of 3 October 2002 laying down health rules concerning animal by-products not intended for human consumption.

Effluent is generated on-site mainly from wash waters. The effluent is collected in the drainage system and pumped to the waste water treatment plant (WWTP). The treated effluent is then discharged to the River Erne which passes by the boundary of the site.

Emissions

The main emissions from the activity are odourous emissions from the processes, raw materials and biofilters, air emissions from the thermal oxidiser and boilers, and water emissions from the WWTP. The two outputs from the rendering process are tallow oil and Category 3 MBM, these were classified as wastes however they are now classified as “products” following a decision from the Department of Environment Heritage and Local Government. The competent authority for the storage, movement and use of these “products” is the Department of Agriculture and Food under the Animal By-Products regulations.

Air

The steam requirements for the installation are provided by the thermal oxidiser (referred to as a thermal exhaust air purification unit (TEAP)) and two boilers. The boilers are operated as a duty and stand-by, The RD specifies that only one boiler shall operate at any one time other than for testing purposes. The thermal oxidiser is operated to provide steam to the process but also to treat the odourous gases from the cooking process.

The thermal oxidiser and boilers are fuelled on tallow oil (category 1) but may also be fuelled on heavy fuel oil (HFO). HFO was the main fuel source prior to Agency agreement in July 2001 for the use of tallow oil. The main emissions associated with the operation of the thermal oxidiser and boilers are combustion gases (NO_x and particulate). Ammonia and mercaptans are also emitted from the thermal oxidiser as a result of combustion of odourous gases. Tallow oil has a low sulphur content compared to fossil oils and therefore the sulphur emissions are lower when operating on tallow oil.

The licensee identified no minor emissions to atmosphere.

Fugitive emissions to atmosphere are mainly associated with the potential loss of odourous air from the buildings, WWTP and from raw material delivery and final material transport off site. Odour emissions from the activity have been significantly reduced following the installation of the thermal oxidiser to treat the most odourous gases from cooking. The nature of the activity requires that measures to minimise odourous emission are maintained and improved as necessary. The RD maintains the existing conditions in relation to odour control and minimisation.

The existing licence does not include emission limit values in relation to the thermal oxidiser or the boilers. The thermal oxidiser has a thermal input capacity of 12.2MW and the boilers have a thermal input capacity of 11.2 and 10.4MW.

The emissions to atmosphere from the operation of the boiler and thermal oxidiser are lower when the combustion plants are operated on tallow oil compared with HFO.

Impact of Air Emissions on Receiving Environment

The licensee had an updated air dispersion model of the emissions from the thermal oxidiser and the boiler undertaken in support of the licence review. The model used in the assessment was AERMOD, and emissions associated with combustion of tallow and HFO in the boiler and thermal oxidiser were assessed. Terrain data, building downwash and meteorological data for 1999-2003 were included in the model. The maximum predicted flowrates and pollutant concentrations were used as input figures in the model.

The model was completed for two scenarios, they were operation of the boiler and thermal oxidiser on tallow oil and operation of the boiler and thermal oxidiser on HFO. The following table illustrates the predictions compared with relevant air quality standards:

Table 1: Predicted ground level concentrations (including background)

Parameter	Modelled Impact	Predicted Ground Level concentration fuelled on Tallow	Predicted Ground Level concentration fuelled on HFO	National Air Quality Standards
Nitrogen Oxides	99.8%ile hourly	46.4	85.6	200 µg/m ³ Note 1
	Annual limit	13.8	16.0	40 µg/m ³ Note 1
Sulphur Dioxide	99.7%ile hourly	21.6	174	350 µg/m ³
	99.2%ile daily	10.6	82	125 µg/m ³
Particulate matter (PM ₁₀)	90%ile 24 hour	15.9	22.3	50 µg/m ³
	Annual Note 2	13.4	15.7	20 µg/m ³ Note 1
Particulate matter (PM _{2.5})	Annual concentration cap	8.6	10.9	25 µg/m ³ Note 3

Note 1: Air Quality Standards Regulations (SI No. 271 of 2002) reducing standard to be fully achieved by 2010

Note 2: Stage 2 limit values for Particulate Matter (PM₁₀) to be achieved by 2010.

Note 3: Proposed Directive COM (2005), concentration cap to be attained by 2010.

The predicted ground level concentrations presented above include background air quality results from EPA sampling stations (zone D stations, rural locations). The results which are the predicted worst case ground level concentrations indicate compliance with the relevant air quality standards. The RD includes the predicted maximum emission concentrations and emission rates. In addition the RD requires annually emission sampling and analysis and also requires the licensee to undertake combustion efficiency testing annually.

Emissions to Sewer

There is no connection to sewer at the installation.

Emissions to Waters

Process effluent and wash waters arising on-site are treated in the WWTP prior to discharge to the Erne River. The WWTP is an activated sludge WWTP which is been up-graded during spring/summer of 2007. The installation of the thermal oxidiser for treatment of odourous air from the cooking process has reduced the quantity of process effluent significantly. The emission limit values specified in the existing licence do not comply with BAT (Batneec Guidance Note for the Rendering of Animal By Products), however the licensee has confirmed that they can comply with the BAT limits as a result of the reduced loading on the WWTP following the installation of the thermal oxidiser.

The concentration of emissions to river have reduced and therefore the impact of the discharge to the Erne River is also reduced. The emission limit values for Nitrates (as N) and Total Ammonia (as N) have been reduced in line with BAT for the sector. The maximum volumetric discharge from the installation remains as was specified in the previous licence.

Surface Water

Surface water collected on-site is directed to the Erne River. The surface water is collected from uncontaminated yards and roofs. All processing activities are undertaken within the buildings. The RD maintains the existing conditions in relation to bunding, inspection of surface water discharges etc.

Emissions to ground

There are no emissions to ground from the activity. The yards used for vehicle movement etc. are all concreted and the water is directed to surface water (clean yard areas) and the WWTP where there is a risk of contamination.

Water for the office block including drinking water is extracted from a well located at the entrance to the installation. There are no other ground water abstraction points identified close to the activity.

Waste

Tallow oil (Category 1) is now used as the main fuel source for the boilers and thermal oxidiser, the use of tallow oil was agreed with the Agency since grant of the existing licence. The use of tallow requires approval from the Department of

Agriculture and Food, who are the competent authority. The Department of Agriculture and Food have inspected the installation in relation to the combustion of tallow oil but have not yet provided written approval. The RD requires the licensee to maintain for inspection by Agency personnel all correspondence from the Department of Agriculture and Food in relation to combustion of tallow. The emissions from the use of tallow oil are commented on under the section above in relation to Air Emissions and the RD includes conditions and limit values in relation to the air emissions.

The wastes generated on-site have not changed since grant of the existing licence. The RD continues to require all wastes sent off site to be recovered/disposed of at appropriate facilities. Waste sludge from the WWTP is dewatered on-site and then transported to the College Proteins installation (Reg. No. P0037-03) for treatment. .

Noise

The activity is located in a rural location, noise monitoring undertaken by the licensee at the boundary and the nearest noise sensitive location indicates compliance with the existing noise limits of 45/55dB(A). The RD requires noise monitoring to be undertaken biennially and that there shall be no tonal noises arising from the activity.

Use of Resources

- Fuel

The main fuel used on-site currently to power the thermal oxidiser and boilers is Category 1 tallow oil. The tallow oil is generated by category 1 rendering plants. The storage, use and movement of tallow oil is controlled by the Department of Agriculture and Food who are the competent authority. The conditions under which tallow oil shall be combusted in a thermal boiler process are specified under Commission Regulation (EC) No 2067/2005, the RD specifies these operating conditions. The EPA approved, following the grant of the existing licence, the use of tallow as a fuel subject to conditions, the RD as drafted incorporates these conditions. The current usage of tallow oil is c. 5,000 tonnes per annum.

Diesel is used to power loaders and mobile plant on-site, the usage of this fuel has reduced significantly as a result of greater use of augers etc to move material. Current usage is c. 5,000 litres/annum.

- Electricity

Electricity is used to power plant and machinery on-site. Annual usage is c. 3 million Kwh.

Compliance with EU Directives

IPPC Directive (91/61/EC)

This installation falls within the scope of category 6.5 (Installations for the disposal or recycling of animal carcasses and animal waste with a treatment capacity exceeding 10 tonnes per day) of Annex I of Council Directive 96/61/EC concerning integrated pollution prevention and control.

The Recommended Determination (RD) as drafted takes account of the requirements of the Directive. BAT is taken to be represented by the guidance given in the IPPC reference document on BAT in the Slaughterhouses and Animal By-Products Industries.

Emissions Trading Directive (2003/87/EC)

The installation holds a Green House Gas Permit (IE-GHG037-02).

EU Animal By-Products Regulations (EC No. 1774/2002)

The activity, handling, storage, cooking and movement and use of animal by-products and the products of the rendering process, is liable to the controls required under Regulation (EC) No 1774/2002 and amendments. The Department of Agriculture and Food is the competent authority in relation to this regulation.

Incineration of Waste Directive (2000/76/EC)

The incineration of waste does not apply to the burning of tallow oil as a fuel. The Department of Environment Heritage and Local Government have confirmed that tallow is a “product” rather than a waste. In addition Commissions Regulation (EC) No 2067/2005 of 16 December 2005 amending Regulation (EC) No 92/2005 as regards alternative means of disposal and use of animal by-products specifies conditions for the “combustion of animal fat in a thermal boiler process” (Annex VI).

Best Available Techniques (BAT)

I have examined and assessed the application documentation and I am satisfied that the site, technologies and techniques specified in the application and as confirmed, modified or specified in the attached Recommended Determination comply with the requirements and principles of BAT. I consider the technologies and techniques as described in the application, in this report, and in the RD, to be the most effective in achieving a high general level of protection of the environment having regard - as may be relevant - to the way the installation is located, designed, built, managed, maintained, operated and decommissioned.

Fit & Proper Person Assessment

The Fit & Proper Person test requires three elements of examination: technical ability; legal standing; and financial standing. Farragh Proteins is owned and operated by college Proteins Limited who also operate a rendering plant in Nobber, Co Meath and are therefore considered to have the technical ability and financial standing necessary. College Proteins Limited have not been convicted under relevant legislation. It is my view, and having regard to the provisions of Section 84(5) of the EPA Acts and the Conditions of the RD, that the applicant can be deemed a Fit & Proper Person for the purpose of this Review.

Compliance Record:

Farragh Proteins have been generally compliant with the conditions of their existing licence. The most recent site visit undertaken by OEE was on the 29/11/06. There

were two non-compliances and a number of observations noted as part of the site inspection. The non-compliances were as follows:

The licensee had failed to submit a proposal for the provision of an air lock system at the main entrance to the animal by-product/raw material intake building as required by condition 5.8; and calibration records were not available on-site.

The observations noted included non-submission of reports (bund integrity assessment), failure to maintain records on-site for inspection, and failure to update the waste water treatment plant manual.

The licensee has addressed these non-compliances and observations and in particular has included the provision of an air lock system as an objective in the 2006 annual environmental report. The RD also maintains the requirement for the provision of an air lock system.

Complaints

Odour nuisance is the most likely cause of complaints in relation to the rendering sector. The most recent reported odour complaint was in 2005 when the licensee was undertaking structural upgrading work on-site and the integrity of the buildings was compromised.

Submissions

No submission have been received in relation to the licence review application.

Recommended Determination (RD)

The RD gives effect to the requirements of the POE Act 2003 and incorporates the emission limit values specified in the BREF for the animal by-products sector.

Charges

The invoiced charge in relation to the activity is €16,895 for 2007, the proposed charge in the RD is maintained the same as the invoiced charge for 2007 as there is no significant increase in enforcement activity required.

Recommendation

I recommend that a Proposed Determination be issued subject to the conditions and for the reasons as drafted in the RD.

Signed

Patrick Byrne

Procedural Note

In the event that no objections are received to the Proposed Determination of the review application, a revised licence will be granted in accordance with Section 87(4) of the Environmental Protection Agency Acts 1992 and 2003 as soon as may be after the expiration of the appropriate period.