P0108-01

Ewa Babiarczyk

Subject: FW: Planning Permission for the Thermal Oxidizer

Attachments: Irish flexible packaging-090126-REF10-til.pdf; NI - RTO plant in SS 304 for 5000m3.h with buffer tank on the left hand side.jpg

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From: edel [mailto:ifp@eircom.net]
Sent: 28 January 2009 10:34
To: David Matthews
Subject: FW: Planning Permission for the Thermal Oxidizer

Good Morning David,

Please see attached. We are discussing this with Sean Mamarri on the 10th February here in Carnew.

Assuming everything goes according to plan we propose to order this piece of equipment for Stacks A7 and A8

Kind Regards
Eamon Farrell.

-----Original Message-----
From: Sean Maamari [mailto:smaamari@compuserve.com]
Sent: 26 January 2009 14:17
To: ifp@eircom.net
Subject: Re: Planning Permission for the Thermal Oxidizer

***eircom* net email protector: Renamed a file.** (click for details)

Eamon,

Good to talk with you again, please find enclosed our revised offer and photo of such small oxidiser. Potentially you could consider placing abatement indoors to help with the planning permission issue.

I am available to come an see you on site to review various options together with your consultant, the possible dates are Monday 2nd Feb or Monday 9th of February, or Tuesday 10th Feb.

Let me know what are your preferences.

Best Regards

Sean Maamari
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Email: sm@lesni.co.uk
www.lesni.co.uk

> ----- Original Message -----
> **From:** edel
> **To:** 'Sean Maamari'
> **Sent:** Friday, January 23, 2009 11:49 AM
> **Subject:** FW: Planning Permission for the Thermal Oxidizer
>
> -----Original Message-----

From: Agnes Ricoux [mailto:aricoux@energy.iol.ie]
Sent: 23 January 2009 11:12
To: ifp@eircom.net
Subject: Planning Permission for the Thermal Oxidizer

Hi Eamon,

I have done some research regarding the Thermal Oxidizer and the need for a planning permission. I first called Wicklow County Council (without quoting your name!) and she told me that the best would be to ask for an Exemption Certificate. There is a form available on-line and the application costs 80€. However, it is not guaranteed that you will be granted the exemption!

I then talked to my colleague again and we looked at the Planning and Development Regulations to see if there is any exempted class that the thermal oxidizer would fall under:
We thought of Class 16: "The erection, construction or placing on land on, in, over or under which, or on land adjoining which, development consisting of works (other than mining) is being or is about to be, carried out pursuant to a permission under the Act or as exempted development, of structures, works, plant or machinery needed temporarily in connection with that development during the period in which it is being carried out."

We also contacted another planner for advice. Here is his answer:

"With regard to the thermal oxidizer, Class 16 is no use to you. That concerns sites where development is being undertaken – in other words building sites. It covers builders moving in concrete batching facilities and the like while they are building something. It does not apply to an established activity.

The usual exemption for such machinery on an industrial site is class 22. It includes:

"the installation or erection by way of addition or replacement of plant or machinery, or structures of the nature of plant or machinery". There is no definition provided of "*machinery*" but it seems to me that it is a broad term and it is at least arguable that a "*thermal oxidizer*" is a machine. If so, and you can meet the 15m height limit (does it have a chimney?) and the restrictions in Article 9 of the regulations, it should be exempt.

You could submit it to the council for a formal decision or, if you wish, I could prepare an opinion on it. My fear of giving it to the council is that it is their instinct to play safe and demand a planning application?

Stephen"
I actually think that he meant Class 21 (Not Class 22), i.e.:
(a) Development of the following descriptions, carried out by an industrial undertaker on land occupied and used by such undertaker for the carrying on, and for the purposes of, any industrial process, or on land used as a dock, harbour or quay for the purposes of any industrial undertaking—

(i) the provision, rearrangement, replacement or maintenance of private ways or private railways, sidings or conveyors,

(ii) the provision, rearrangement, replacement or maintenance of sewers, mains, pipes, cables or other apparatus,
(iii) the installation or erection by way of addition or replacement of plant or machinery, or structures of the nature of plant or machinery.

(b) Any works for the provision within the curtilage of an industrial building of a hard surface to be used for the purposes of or in connection with the industrial process carried on in the building

There is indeed a 15m limit in the conditions for this class:
1. Any such development shall not materially alter the external appearance of the premises of the undertaking.

2. The height of any plant or machinery, or any structure in the nature of plant or machinery, shall not exceed 15 metres above ground level or the height of the plant, machinery or structure replaced, whichever is the greater.

Please do not hesitate to contact me if you wish to discuss.
Kind Regards,
Agnès

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Irish Flexible Packaging Limited
Carnew
Co. Wicklow
Ireland

26th January 2009
case: 08127

Attn: Mr. Eamon Farrell

Your ref.: Stacks A7 & A8 Abatement

our ref.: SHM/08127/rev.1

QUOTATION

Dear Mr. Farrell,

Subject: Thermal oxidiser

Following our recent conversation and update data on emissions from the 10 colour machine; I am writing to submit our revised quotation for the regenerative thermal oxidiser.

We propose to supply one standard LESNI regenerative thermal oxidiser type REF 06, designed to provide 95% heat recovery and better than 98.5% purification efficiency. The two canisters RTO proposed is supplied with additional buffer tank (a puff cleaning chamber acting as the third chamber). This will contain and control spikes expected during switching of flow between the two chambers; for optimum performance providing steady purification efficiency beyond 98.5%.

The proposed purification technique offers robust, efficient, and modern solution based on the thermal destruction of VOC (please refer to the attached plant description sheet) while offering:

- High performance.
- High reliability.
- Lower operating cost.
- Compact design, lower weight and size.

We also guarantee that emission limit value (ELV) for all TOC will be much better than your LICENCE REQUIREMENT of 150 mg/m^3, although expect to achieve constantly better than 50 mg/m^3.

General:
Delivery of air purification plant for the abatement of volatile organic compounds (as per solvent list provided) generated from the printing process; generally comprising of one Regenerative Thermal Oxidiser type REF 06 complete as per enclosed flow-sheet no. 08128.001 and the data and specification mentioned below.

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Foot Print:

Overall plant dimensions:	6.5 m x 4.0 m x 6.0 m high
Overall Weight:	10 tons.

Design data:

Air flow:	6,000 Nm^3/h
Inlet Temperature:	35 C
Pollutant:	Propanol, Ethanol, Ethyl acetate, Propyl acetate.
VOC:	Inlet concentration: 0 - 2500 mg/m^3
Average concentration:	1300 mg/m^3
Peak concentration:	2500 mg/m^3
Operating hours:	2 x 8 hr shifts/day, 5 days/week, 48 weeks/year
Solvent used/year:	30 tons
Average Load/hr:	10 kg/h (based 12.5 hrs/day constant feed)
Purification:	better than 98.5%
Efficiency:	**Guaranteed to maintain levels below 50 mgC/m^3**

Running cost:

LPG - Gas consumption:	~ 50 kWh/h
Electricity consumption:	~ 18 kWh/hr
Compressed air:	~ 2 m^3/hr @ 7 barg

Specification:

1) One Heavy duty Fan, (Fabr. Barker Jorgensen) for an air flow of approx. 6,000 Nm^3/hr complete with V- belt drive, and motor. Acoustic enclosure in the form of a insulation material cladded around the casing to offer sound reduction to around 75 dba at 1m away.

   Material: Mild steel

2) 1 pc. Regenerative oxidiser type REF size 06; generally comprising of the following main components:

   Dimensions: 6.0 m x 4.0 m x 5.5m

   a) 1 pc. RTO chambers in carbon steel painted, in compact and skid form with 2 off heat recovery chambers complete with refractory lining, firebricks, insulation material.

   b) 1 pc. LPG burner chamber, complete with one Maxon burner, combustion primary air blower and pilot burner section and spark ignite, with gas train assembly on top of the 2 ceramic chambers.

   c) Ceramic heat exchange media, in the form of "MLM" multi layer media (ceramic slates) chemically inert and stable up to 1200ºC sufficiently

packed in the two chambers to obtain about 95 % nominal thermal recovery.
This media offers following advantages:

- Low pressure drop.
- Higher heat recovery.
- Less susceptible to particulate.
- More compact and lighter RTO.

d) 1 pc. Proprietary disc valve (highly efficient & leak free valves) pneumatically actuated complete for switching the airflow between the two ceramic chambers alternatively.

e) Buffer tank-balancing chamber in SS 304 with associated actuated valves acting as the third chamber in the RTO to contain and control spikes expected during switching of flow between the two-chamber; for optimum performance.

3) Interconnecting ducts for the plant between extract fan and the oxidiser. Material: SS 304.

4) Painted steel or Galvanised skid steel supporting structure, with access platforms and stairs for the oxidiser.

5) 10 m stack, supported off the skid platforms near the oxidiser.

6) Switch and Control panel with PLC (Siemens S7 series 300) for automatic operation and control of the plant with adjustment for the gas burner and all parameters, within the scope of supply complete with;

- Local operator panel for operation of the plant on the cabinet.
- Connection terminal blocks to field cabling.
- Power supplies, internal wiring, breakers, etc.
- Motor starters.
- Signals and alarms.
- Temperature controllers and indicators.
- Gas train and controls.
- Status of the valves.
- Status of the fan.

Note: We anticipate that the electric control panel is located in weather proof shelter near the oxidiser where access is reasonable. Wiring between the plant skid and the main control panel is included if placed in close vicinity.

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7) Mechanical assembly, offloading, positioning, installation, after delivery to site, in one single visit.

8) Training and commissioning of the plant by our service engineer on a separate subsequent visit to start up the plant after installation and connection of all utilities and services, incoming ducts etc.

9) Electrical installation of all components within the skid to local junction boxes. All extra wiring of free external signals to the control room is not in our scope. Wiring between skid and the main panel in the form of multi core cables and power supply to be completed by others if panel is not on the skid.

10) Submission of complete detailed engineering and delivery of documentation (3 copies) for the operation, control and maintenance, generally consisting of the following sections:

- General description.
- Operating section.
- Control section.
- Maintenance and adjustment instructions.
- Drawings.
- Safety instructions.
- Installation instructions.

11) We also include allowance for one or two project engineering meetings on site to review progress, design & detailed engineering, schedule and preparation on site including submission of risk assessment and installation drawings according to an approved LESNI quality plan.

Price: Euro (€) 241,935.00

Option:

1) Delivery of TWO WAY bypass for the manifold incoming process duct to allow emergency divert when abatement is down or in fault.

Price: Euro (€) 4,950.00

Exclusions:

- Foundation and civil works.
- Crane and lifting equipment for positioning of the plant on site.
- Monitoring equipment.
- Wiring & cabling between skid and control panel.
- Power supply to panel and fan motors and local junction boxes.
- Utility services connection and supply including, compressed air, gas, & electricity.

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References:

Chris Kay, Cork
Alps Electrical
Amcor Flexibles
Allergen, Arklow
Glenfarm, Belfast
Belden CDT, Blackburn
Calcarb, Strathclyde
Holsworthy Biogas, Devon
Glancre, Co Mayo

Material:

The plant is generally constructed in material suitable for these conditions, carbon steel for the canisters & stainless steel duct and valves will be selected for this application.

Surface Treatment:

The insulation material will be covered with cladding sheets.

Time of Delivery:

- 24 calendar weeks from final order.
- 2 additional calendar weeks should be allowed for installation and commissioning of the final plant following the above period.

Payment Terms:

30% with order.
60% on delivery ex works.
10% after installation & commissioning.

Guarantee and delivery conditions:

Where nothing else is mentioned the General European Conditions "Orgalime SE 01" will apply.

We trust this meets your satisfaction and shall look forward to receive your instructions.

In the meantime, if you have any questions please do not hesitate to contact me.

Yours sincerely
LESNI A/S

Sean Maamari
Sales Manager