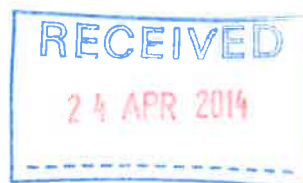


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Stuart Ross
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23rd April 2014

Commissioning of continuous homogeniser and sawing line

Dear Stuart,

Following our telephone conversation on Friday 11th April, I am writing to request permission from Natural Resources Wales to undertake commissioning of some newly installed equipment prior to full production taking place. An application to vary our current environmental permit has been submitted to Natural Resources Wales, application reference BK3638IF/V003. This was "duly made" on 19th March 2014. It is possible that the application will not be determined, and a revised permit issued, prior to a date when we would be ready to undertake commissioning of the new equipment.

The new equipment comprises a continuous homogeniser with integrated sawing and packing line and swarf briquetting. This equipment was purchased from Anglesey Aluminium in August 2013 and will replace equipment that has been in operation at our Wrexham site for over 30 years. It is a "like-for-like swap" in terms of the processes being operated, namely the heat treatment of aluminium extrusion ingot logs, controlled cooling, sawing to length required by customers, and packing prior to despatch. However the new equipment will be fully automated and will bring efficiency savings in terms of the production process, energy use and raw materials, and will reduce environmental noise and emissions to air.

The new equipment will bring the following benefits:

- The homogeniser will result in the creation of one new emission point from the oven exhaust, and will enable the removal of six existing emission points that serve as the exhausts for the current heat treatment ovens, homogenisers 1 and 2.
- There will be a reduction in aggregate thermal capacity of the combustion plant in operation. the new equipment has a rated thermal input of 4.3MW and will replace two heat treatment ovens each rated at 3.2MW (6.4MW together). The aggregate thermal capacity of combustion equipment on-site will therefore be reduced by 2.1MW.
- Emissions of combustion products from heat treatment ovens will be reduced. Monitoring results from when the equipment was in operation at Anglesey show lower emissions than those emitted from just one of the six current homogeniser stacks. Also, an environmental assessment of emissions using the H1 software model indicates that statutory air quality standards are not at risk of being breached. There will be no cumulative / additional effect on emissions to air as the equipment is replacing older, less-efficient equipment emitting substances in greater concentrations. This is detailed further in section 2 of the "supporting information" document that accompanied the variation application.
- Gas consumption will be reduced compared to the batch homogenisers. The new equipment will enable greater control over the heat treatment process, will have a higher level of insulation compared to the current homogenisers, and is equipped with an efficient recuperative burner design that allows the use of hot exhaust to pre-heat the incoming combustion air and fuel gas to boost efficiency.
- There will be improved resource efficiency through increasing product length from 6.4m to 7m, while the current homogenisers and saw will be removed to create space for new internal scrap bays. Expanding scrap storage facilities will enable a wider range of secondary aluminium materials to be utilised in the production process.

- Regarding noise, the new homogeniser is rated at 80dB(A), while noise inside the plant from current operations has been measured at 80-100dB(A). It is thought that the new equipment will reduce overall noise due to removing the need for a manually-operated laydown station and subsequent reduced "chiming" of logs as they will not be being turned through 90 degrees after being lifted from the casting pit (as is currently the case). The process is automated as soon as the logs are lowered on to the new laydown station. Noise from sawing operations will also be reduced, as both the cutting and the collection of sawn offcuts (butt ends) will take place inside an acoustic enclosure.
- Waste recovery will be improved as the automated sawing and packing line incorporates swarf briquetting equipment. It is hoped that this will enable the swarf (aluminium turnings) from the cutting operation to be returned to the production process and recycled on-site (swarf is currently collected for off-site reprocessing).

The project timeline for installing the new equipment includes a lengthy commissioning phase to ensure safe and correct operation of the various systems serving the homogeniser oven, the automated laydown station and log accumulator / in-feed, cooler, out-feed conveyor, saw, packing line and swarf briquetter. Equipment layout, block diagram and schematics of the new equipment are included in appendices 2, 3 and 4 of the supporting information document submitted with the variation application.

The commissioning programme has been designed to follow immediately after completion of the installation phase to make efficient use of the personnel involved (some of which are external contractors) and to ensure a successful transition to full operation of the new equipment, and quicker realisation of the benefits the new equipment will bring.

The majority of commissioning work will be completed on "cold" equipment, including electrical testing, checking the gas supply and hydraulic systems, and testing of the various software systems controlling the automated equipment. Cold commissioning is due to run throughout May, following completion of the installation works by external contractors in April.

The final phases will involve testing the full operation of the equipment using logs cast at 7 metre length, followed by a "ramping-up" phase with full production being achieved by the end of June. According to this timescale, the homogeniser burners would be lit for initial testing in the week commencing 26th May, pending approval from Natural Resources Wales. We are therefore seeking permission from Natural Resources Wales for the completion of "hot commissioning" of the continuous homogeniser prior to it being fully operational. If you wish to discuss any aspect of this project further, please do not hesitate to contact me.

Yours sincerely



Joel Priest
QHSE Manager