Environment Agency Permitting decisions

Variation

We have decided to issue the variation for **Langley Drive Chemical Machinists** operated by **Meggitt (UK) Limited.**

The variation number is **EPR/PP3939NP/V004.**

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the operator's proposals.

Structure of this document

- Annex 1 the decision checklist and Key Issues

Key Issues of the decision

Overview
The variation changes are in summary as follows:

- Activities Table S1.1 updated to add on-site effluent treatment scheduled activity Section 5.3 A) (1) (a) (ii); this activity existed prior to this variation and its addition here is to correct a previous omission.
- Table S1.2 Operating Techniques updated to reflect variation changes including:
  - Updated effluent treatment facility (including additional settling tank, new re-circulation/out of specification effluent tank, new calcium di-hydroxide storage tank, relocation of 2 cooling towers and relocation of filter cake press).
  - New chlorine scrubber A2 emission (caustic based) in order to optimise chlorine abatement linked to abnormal emissions from chlorine room.
  - Complete replacement of chlorine system (like for like but to adhere to HSE guidance HSG28 and BAT indicative measures).
  - 'V' notch position to be moved from right hand side of building (when viewed from Langley Drive) to left hand to minimise lengths of sewer discharge.

- Table S3.2 updated to reflect Nickel and Chromium monitoring and 0.5 mg/l emission limit values changed from spot sampling to 24 hour composite sampling. Effluent monitoring requirements limited to principal parameters nickel and chromium.
- Table S4.1 Reporting Table updated to reflect monitoring changes.

Overall the chemical etching maximum production capacity is unchanged with this variation based on usage of 700 tonnes per annum of raw material chlorine.

Effluent Treatment Scheduled Activity
The onsite effluent treatment plant capacity is unchanged with this variation. The operator has confirmed the maximum effluent treatment capacity is 260 m^3/day. This means the onsite effluent treatment is a scheduled activity as follows:

5.3 Part A(1) (a) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— (ii) physico-chemical treatment;

The scheduled activity was not included in original permit BW1025IN. This has now been added with this variation. The capacity being under 300 m3/day means no change to the OPRA score.

Effluent Treatment Plant
Overall the new ETP has been installed because of the operator not being able to comply with current 0.5 mg/l emission limit values for nickel and chromium, based on spot sampling. Historically, in particular, spot samples of 1 to 1.5 mg/l were being reported for nickel within S1 discharge.
<u>ETP improvements in more detail are as follows:</u>

1. Repositioning of 'V' notch tank from the right hand rear of the site (when viewed from Langley drive) to the left hand rear of the building. The sampling point is now situated at the left hand front of the building. A proportional sampler is to be installed at the sampling point.

2. Number of settling tanks increased from 2 to 3 and all now positioned on left hand side of site.

3. Additional tanks added:
a. Sludge consolidation tank.
b. Re-circulation (divert) tank for holding the effluent discharge to prevent a potential breach occurring.
c. Calcium hydroxide holding tank (which will be used to treat/dose the effluent giving better settling properties).

4. Repositioning of cooling towers into a central location. The cooling towers have been connected together thus providing a single cooling system rather than 3 separate systems as previously.

5. Repositioning of cake press 1 next to cake press 2.

ETP controls
The entire ETP is monitored using an electronic monitoring system which allows the plant to be overseen from a central computer screen. The final discharge pH is monitored and a range of 10 to 10.5 is optimum for low nickel and chromium levels. There are pH probes in process tanks and the V notch flow meter, if values are outside set ranges the effluent is diverted automatically to the new out of specification 40 m^3 tank. This allows better effluent

control. Daily in line monitoring of nickel and chromium sewer discharge emission levels, with instantaneous results, allows ETP optimisation and diversion of liquor to buffer out of specification tank to ensure ELV compliance.

In addition the operator schedule 5 response dated 07/10/15 confirms their maintenance team monitor liquor at 'V' notch point every 2 hours taking a sample and visually comparing it to a colour chart. It is established that the clearer the outfall liquor, the lower the amount of nickel and chromium in the outfall. If the liquor is cloudy there is a procedure to sample for nickel and chromium using the photometer and if the permitted ELV is exceeded then the outflow will be diverted to the 'out of spec' tank while the problem is resolved.

Emission Limit Values
The operator schedule 5 response dated 07/10/15 provided commissioning monitoring data over a period of one month to provide evidence that with the introduction of the new ETP the ELV's of 0.5 mg/l for chromium and nickel, based on 24 hour composite samples, can be complied with.

All the results complied with the above ELV's except one daily result, which was transferred to the out of specification tank.

ETP Containment
- Primary Containment: All ETP tanks are complete with a level indication and high level alarms.
- Secondary containment: All ETP tanks are located within a bund complete with an internal sump. The combined volume of bund and sump is greater than 110% of the largest tank volume and >25% of total tank volume.

Caustic Scrubber
The A2 chlorine room scrubber has the role of abating abnormal chlorine emissions. This scrubber has been replaced to allow for various improvements. The overall specification is unchanged to ensure A2 chlorine emission is <10 mg/m^3.
The improvements are linked to optimising chlorine room exhaust flow rate to allow number of air changes per hour to be between 6 and 10 to be in line with HSE guidance HSG 40. This will ensure optimum removal of any abnormal chlorine emission within the existing chlorine room. However the mass emission of chlorine per abnormal event has not changed.
Additionally if a serious leak were to occur then a sensor on the scrubber would shut it down if caustic scrubber liquor were saturated beyond a fixed set point. The chlorine release would be contained within the chlorine room and the operator would replace scrubber liquor before release of abnormal emission via the new scrubber. This would ensure more robust and consistent scrubbing of all abnormal emissions to <10 mg/m^3 chlorine emission, compared with current scrubber.
In terms of process monitoring to ensure <10 mg/m^3 emission limit value the operator has confirmed this includes:
- Caustic scrubber liquor flow monitoring;
- Scrubber differential pressure monitoring;
- Weekly check on scrubber caustic liquor concentration.

Overall conclusion
We conclude that the new scrubber represents BAT measures to minimise environmental pollution, meeting the 10 mg/m^3 chlorine EPR 4.03 benchmark emission limit value.

Chlorine system
The new chlorine plant was designed to comply with HSE guidance HSG 28. To ensure compliance the operator has completed a rigorous HAZOP risk assessment, a summary of which was provided with the schedule 5 response. The HAZOP was chaired by an independent specialist to ensure good practice was observed.
The new system replaces the old one whose performance is becoming more problematic with increased age and breakdowns.
The particular benefits of the new system include:
- Castell interlocks to ensure safe operation;
- Provision of nitrogen purge system;
- Additional process valves to isolation various sections of the chlorine system for maintenance work;
- Chlorguard emergency system – isolates a drum or tanker should an emergency occur;
- Extraction pipe that will remove any residue chlorine present during tanker/drum changeovers. The residue chlorine gas will be extracted directly to existing A1 process scrubber.

Overall conclusion
We conclude that the new scrubber represents BAT measures to minimise environmental pollution.

Annex 1: decision checklist
This document should be read in conjunction with the application and supporting information and permit.

Aspect considered	Justification / Detail	Criteria met Yes
Receipt of submission		
Confidential information	A claim for commercial or industrial confidentiality has not been made.	✓
Consultation		
Scope of consultation	There is no consultation for this variation as this is a normal variation and no special requirements for consultation. This is in line with our guidance.	✓
European Directives		
Applicable Directives	All applicable European Directives have been considered in the determination of the application. The consolidated permit includes the addition of the requirements of the Industrial Emissions Directive.	✓
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the facility. A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary. The installation boundary is unchanged with this application.	✓
Site condition report	The site condition report is unchanged within this variation, as the installation boundary and facilities are unchanged.	✓
Biodiversity, Heritage, Landscape and Nature Conservation	The activities being carried out are within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat; specifically eleven local wildlife sites. There are no European Sites or SSSI's within the relevant screening distances. There are 11 Local Wildlife Sites within the relevant 2 km screening distance. The variation changes do not include additional impacts for any parameters with ecological environmental standards, based on our H1 annex f) guidance. We therefore conclude there is no requirement for further environmental assessment. The decision was taken in accordance with our guidance.	✓
Environmental Risk Assessment and operating techniques		
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory after additional responses received including schedule 5 responses.	✓
Operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance (including our TGN EPR 4.03 and HSE guidance HSG 28 for Safety advice for bulk chlorine installations). The operating techniques are summarised in the supplementary application report including: • Environmental Management System (EMS) summary • Non-Technical summary • Supplementary application document section • Duly making responses • Schedule 5 details on atmospheric abatement, effluent treatment plant, emissions monitoring techniques and chlorine replacement plant controls We are satisfied that the operating techniques are in line with indicative BAT measures.	✓
The permit conditions		
Updating permit conditions during consolidation.	We have updated permit conditions to the modern permit conditions. The operator has agreed with this.	✓
Odour conditions	Standard odour conditions 3.3.1 and 3.3.2 apply. There is no additional odour risk introduced with this variation.	✓

Aspect considered	Justification / Detail	Criteria met Yes
Noise conditions	Standard noise conditions 3.4.1 and 3.4.2 applies. There is no additional noise risk introduced with this variation.	✓
Pre-operational conditions	No pre-operational conditions are required for this variation.	
Improvement conditions	Based on the information on the application, we consider that we do not need to impose further improvement conditions with this variation.	✓
Emission limits	We have limited the parameters with emission limit values (ELV's) for S1 effluent discharge to only those showing levels above monitoring limits of detection. The H1 assessment for this variation confirms that for all parameters linked to this S1 discharge the environmental impacts are screened out as insignificant. This is based on maximum effluent capacity of 260 m^3/day. The nickel and chromium ELV's continue to be set at 0.5 mg/l but now based on more representative 24 hour composite sample rather than previous spot sample monitoring. The levels of 0.5 mg/l are in line with our TGN EPR4.03 guidance.	✓
Monitoring	We have limited the monitoring requirements for S1 effluent discharge to only those showing levels above monitoring limits of detection; nickel and total chromium. All the atmospheric monitoring for emission point A1 is in line with our Mcerts guidance. The effluent monitoring for emission point S1 is in line with our MCERTS guidance.	✓
Reporting	We have changed permit reporting requirements with this variation to reflect S1 monitoring changes as discussed above.	✓