Determination of an Application for a PPC Permit under the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No.1973)

Decision Document recording the decision-making process

Note: all references to the "PPC Regulations" are to the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No.1973), as amended.

Administrative details

Application date and Agency reference ("the Permit Application")

NP3235MQ

Permit number (the "Permit") **BM3965**

Applicant (the "Applicant") **Airbus UK Ltd**

Address/location of installation (the "Installation")]

Airbus UK Ltd
Chester Road
Broughton
Chester
CH4 0BZ

Name of Authorising Officer Paul Nash

Signature of Authorising Officer:

All relevant documents have been sent to the IPPC Public Registers

Purpose of this document

The Decision Document ("DD") explains how the Applicant's Permit Application has been determined and why the specific conditions in the Permit have been imposed. It is a record of the decision-making process to show how all relevant factors and legislative requirements have been taken into account.

Summary of the decision

The Permit for the Operator to operate the Installation has been varied by the Agency, subject to the conditions set out in the Permit. The Agency considers that in its decision to issue the Variation and in the conditions imposed, it has taken into account all relevant considerations and legal requirements and that the permit will ensure that all appropriate measures will be taken against pollution and that no significant pollution will be caused.

Description of the Permitted Installation

A non-technical description of the Permitted Installation is included in the Introductory Note to the Permit.

Airbus UK Ltd
BM3965
Variation Application NP3235MQ

Background

Airbus are one of 3 Operators on the Broughton Aircraft Factory Installation. Airbus UK Ltd applied for a variation to their Permit in December 2006. As this was the fourth variation to the Airbus Permit it was decided that a review of the Permit be carried out (under Regulation 15 of the 2000 Regulations) and consolidated Permit would be issued. At the same time as determining the Airbus Variation it was decided to carry out a review of the other Permits at the installation and to issue new Permits inline with the new template. This was considered necessary as all three Operators have a number of linked conditions so it would be easier to regulate if the conditions were the same.

The three Permits at the Installation were originally issued in November 2002.

Airbus UK Ltd applied for a variation to include a new paintshop, with two new associated gas fired combustion plant and a second pin cleaning facility. The variation also included the request to alter the monitoring strategy for surface water, air and noise. A number of minor operational changes made since the issue of the original Permit have also been incorporated into the Application.

No external consultation has taken place as the application is standard variation.

The variation application has involved an update of the whole of the Original Permit Application.

Review / Determination

- *New Paint shop*

A new Single Aisle Paintshop (referred to as final single aisle paintshop in the Permit, the existing single aisle paint shop is referred to as interim) is being installed on the East Factory. It will be operated in the same way as the 7 paintshops already within the installation.

The paintshop will be used to paint a final coat on approximately 34 wing sets a month. It will have four paint / cure booths as well as a preparation area and mix room. Each paint booth will be served by an exhaust stack and an additional stack will serve the preparation and mix rooms. A three stage dry filter system will remove particulates before discharge to the atmosphere.

All paints used will be compliant with PG6/40. It is expected that the volume of paint used within the new paintshop will be greater than in the others as a top coat will be applied as well as a primer.

The impact of the new paintshop has been considered with respect to water usage, emissions to air, water, groundwater and sewer, noise, odour, fugitive emissions, waste management, energy usage, accident management system and the site EMS.

The air modelling exercise carried out during the original application was re run to include the emissions from the new paintshop. The results are discussed in the air section below.

- *Associated New Combustion Plant*

Two new stand alone gas fired hot water boilers each with a thermal input of 4.1MW are to be installed for use at the new paint shop.

It is proposed that these boilers will linkup to the existing CHP in the future when the district heating system is installed. This will allow the CHP to provide energy for the paintshop and utilise the resultant electricity on site. This has been included in the Improvement Programme.

- *Pin Cleaning Facility*

Details of the second facility are included on page 45 of the application. This will be sited next to the current facility in the Robin Hood Hangar. The new equipment is totally enclosed and has no emission points. It is anticipated that the solvent will need replacing three times a year.

Airbus are installing this new piece of equipment as it was recognised that if they only have one and it breaks down it could lead to operational issues.

An improvement condition has been included in the variation requiring Airbus to carry out a BAT review of the two different pieces of equipment, improvement condition 7.

The pin cleaning equipment has been included in schedule 1 of the variation as a Part B activity.

- *Change to Monitoring Schedule*

Air

There are a significant number of emission points to air from the Airbus activities on the installation. These include combustion, paint shops and treatment line releases. When the original Permit was applied for very little information was available on the emissions from these points as little monitoring had been carried out. As a result the monitoring required by the Permit was quite onerous. Airbus have now carried out 4 years worth of monitoring and have asked for a reduction in the frequency of the monitoring based on the low results to date.

Some of the equipment is not used continually thus providing operational difficulties when monitoring is required.

Air modelling was carried out to include the new emission points. The AMBS combustion plant were also included within the model. The combustion plant with thermal output of less than 0.5MW were not considered in the modelling. This approach is considered to be justified and proportionate.

The modelling was based on worst case and therefore the maximum potential impact has been predicted. Normal operating conditions are defined as all Airbus and AMBS facilities operating for 24 hours a day 365 days a year. In reality the operating hours are considerably lower than this.

Queries were raised over a number of issues based on the report submitted on 8/1/07. These related to what conversion factor had been used for nitric oxide to nitrogen dioxide; grid spacing and the fact that the on site impact had not been considered.

NO Conversion
The Janssen conversion method was used for this calculation. Using this method the conversion factor varies with distance from the emission point. A table showing the conversions at various different distances was supplied. A conversion factor of 32.6% was applied to all on site predictions.

This is considered appropriate.

Grid Spacing
The on site modelling was rerun with grid spacing of 50m rather than 100m

On site Impact
The on site impact was considered and an additional report submitted summarising the results.

Off Site Model Conclusions
The annual average nitrogen dioxide produced by the whole installation under "normal" conditions, is 3.6 ug/m3, this represents 9% of the AQS.

The predicted concentrations of sulphur dioxide are well within the AQS objectives.

Under "normal" operating conditions all pollutant species are predicted to be significantly less than the relevant AQS.

On Site Model Conclusions
This model was run at the request of the Agency as the on site impacts were not considered in the Original Model. Due to the small size of the majority of the stacks at the installation it was felt that the likely highest concentrations would occur on site and not off site.

The annual average nitrogen dioxide produced by the whole Airbus installation under "normal conditions", is 8.2ug/m3, this represents 20.5% of the AQS.

The predicted concentrations of sulphur dioxide are all within the AQS objectives.

The predicted annual concentrations of chromium exceeds the EAL (in the report it states AQS but it is believed to be the EAL). The worst case predicted ground level concentration of chromium is 7.2ug/m3, where the EAL is 5ug/m3.

Appendix 2 shows the chromium source to be the various different paintshops on site. An improvement condition has been included requiring the Operator to reassess the results of the model with respect to the actual impact of chromium. In reality these paintshops only operate for a small proportion of time in the year rather than 24 hours a day.

COMBUSTION

The original Permit required annual NOx monitoring on all combustion plant over 0.5MW input. A limit of 200mg/m^3 was placed on all emission points, including standby boilers. Results over the last few years show no breaches of this limit with the majority being under half the limit.

In the variation Application Airbus have requested that the monitoring frequency be dropped from annually to every three years, on the same emission points.

All Airbus combustion plant have an input of less than 5.5MW, and all bar two boilers have an input of less than 2MW. Oxygen content is monitored on an annual basis as part of the service regime.

Sulphur dioxide emissions are calculated on an annual basis using a calculation based on the fuel usage.

It is felt that a more appropriate way of controlling the emissions from the combustion plant is by ensuring regular maintenance and servicing is carried out. It has been stated within the Application that this occurs. The requirement to monitor the combustion plant has therefore been removed from the Permit.

PAINT SHOPS

There are currently 7 paint shops on site, with the 8th under construction.

The current permit requires annual monitoring for VOCs, isocyanates and particulates. Limits of 50, 0.01 and 20 mg/m^3 respectively are in place.

The particulate and isocyanate results can be seen to be well below the limits set. Generally speaking the VOC results are also below the limit. However, a number of breaches have occurred. The reason for the breach was that the monitoring was carried out whilst paint was being mixed. This is a relatively

short lived operation and therefore the breach was only over a short time frame.

Airbus limit the emissions of VOCs by ensuring that all paint used on site is compliant with PG 6/40. This requirement has been included within schedule 3 of the variation.

The paint booths undergo regular maintenance.

Airbus have proposed to stop monitoring the paintshops and instead to report a mass balance on a quarterly basis. The report will show, for each paintshop, the total VOC input against production rate.

It is felt that using the mass balance approach a more representative and meaningful result will be obtained than by annual monitoring. The request to cease monitoring from the paint shops has therefore been agreed. The emission points from the paint shops are all listed in schedule 4 of the Permit. A reporting form has been generated.

An improvement condition requiring Airbus to review the mass balance data following two years worth of results to assess any difference between the different paint shops has been included in the variation.

ANODISING AND TREATMENT PLANT

There are a number of emission points at each of the three treatment lines and associated effluent treatment plants. The original Permit required three emission points to be analysed for chrome on an annual basis. These are associated with the chromic acid tanks at each of the treatment lines.

Results to date show that the levels of chromium in these emissions to be barely detectable.

The scrubbers are inspected on a weekly basis and this is fully documented.

Airbus have proposed to reduce the monitoring from these emission points to once every three years.

It is felt that as monitoring to date has shown very low levels of emissions the more appropriate way to ensure the impact is minimised is via regular maintenance and control measures on the lines. These are confirmed as being carried out within the Application. The monitoring requirement at these points has therefore been removed.

<u>Water</u>

Within the original Permit Application Airbus stated that they would carry out weekly surface water monitoring at a number of different points around the installation. The Original Permit required monthly monitoring at a number of these points. Limits were set on a number of the outfalls for various determinands. Prior to the site being covered by PPC the only Water

Resources Act Consent in place related to the discharge of trade effluent from MCC Treatment Line, this has now been redirected to sewer. The only discharge to surface water from the installation is rainwater run off.

Improvements have been made to the control measures on the surface water system over recent years.

In the variation application Airbus have proposed a reduced monitoring regime.

Assessment of the results to date has highlighted a number of issues with respect to high chrome and suspended solids in SW16. The high suspended solids results are believed to be due to the fact samples have been taken even though there was no discharge and the solids collected in the base of the sump dislodged.

An improvement condition has been included requiring Airbus to investigate the potential cause of the chrome contamination at SW16.

Whilst the high results are still being obtained it is felt that the monthly monitoring should continue at SW16.

An improvement condition has been included requiring Airbus to review the results following two years worth of data and to propose a revised monitoring schedule if appropriate.

The other surface water emission points included within Permit are those that discharge to controlled waters. No monitoring requirements have been imposed on these points. The discharge should be of clean and uncontaminated water.

Consultation has been carried out with Team 4 and Water Quality Teams regarding the potential reduction of monitoring required within the Permit. Both teams were happy that if the discharge was purely of clean and uncontaminated rainwater then limits and routine monitoring were not necessary.

Noise

Airbus proposed annual noise monitoring at various agreed sensitive receptors as part of their Original Permit Application. Within the latest variation Airbus propose to reduce the frequency to once every three years.

The variation application includes the results of the surveys carried out in 2002 and 2004. The 2002 monitoring was carried out during the Christmas shutdown when only a few surface water pumps were running. The 2004 monitoring was carried out during normal operations.

The results show that at 5 out of the 7 sensitive receptors the level of noise has decreased from 2002 to 2004. At two of the receptors the increase was approximately 1.5dB. This increase could be due to external factors, such as the A55 or the runway.

No substantiated noise complaints have been received since the Permit was issued.

No noise monitoring has been carried out since 2004 as since then there has always been some construction on site which would impact upon the results.

The current Permit includes noise limits from three different processes on site. These have been lifted directly from the Planning Permission. The Planning Permission does not specify frequency of monitoring. The limits set in the Planning Permission relate to specific processes on site rather than an overall noise limit. It is difficult to see how these limits would be enforceable.

It is felt that, based on the above, the new standard noise condition is adequate for this site. It is also agreed that the frequency of monitoring can be decreased.

Additional monitoring would be carried out if considered necessary following the receipt of any noise complaints.

It should be noted that the limits within the Planning Permission still stand.

Sewer
The requirement to monitor the discharge to sewer has been altered from quarterly to weekly. The weekly monitoring is already carried out by Airbus.

- *Improvement Programme*

IC1 Chrome Removal Programme
This is a carry over from the original Permit. The timescales have slipped a little, this is justified within the Application. This condition requires an update from Airbus on an annual basis until the programme is complete.

IC2 Interim Single Aisle Paintshop BAT Review
It has been recognised by Airbus that the existing single aisle paintshop requires some improvements. This has been included within the improvement table in the Application. Airbus to carry out a BAT review and report on details of improvements and timescales by the end of June 2007.

IC3 VOC Mass Balance
As discussed above

IC4 Link Boilers to CHP
As discussed above

IC5 Chrome in SW16
As discussed above

IC6 Review Surface Water Results
As discussed above

IC7 Pin Cleaning BAT Review
The variation includes the installation of a second pin-cleaning machine. (Although this may not go ahead). The existing machine has an emission point to air but the new proposed machine is contained but requires emptying three times a year.

IC8 Review EMS
The structure of the new variation is significantly different to the current Airbus Permit. This condition has been included requiring the Operator to review their current EMS in light of the variation and to implement any necessary changes.

IC9 Reassess Impact Chromium from Paintshops
As discussed above

Old Permit Condition	New Permit Condition	Comments
1.1.1	2.1.1 / Schedule 1	
1.1.2 / 1.1.3	2.2.1 / Schedule 2	Plan amended to show all MIC areas (some were missing from the original Permit)
1.1.4	2.6.1	
2.1.1	1.1.1	No longer refers to the Application
2.1.2 / 2.1.3 / 2.1.4	1.1.1 / 1.1.2	
2.1.5	1.1.3	
2.2.1	1.4.1	
2.3.1	2.3.1 / Schedule 1	
2.4	3.1.1	Groundwater
2.5.1 / 2.5.2	No specific condition	Waste storage
2.6.1	1.5 3.2.1	No longer refers to Application.
2.7.1 / 2.7.2 / 2.7.3	1.3.1	
2.8.1	1.2.1	
2.9.1	3.5.1	
2.10	3.6	
2.11	2.7	
2.12	1.7	Multi Operator Installations. I have added an additional condition here relating to monthly meetings

3.1.1 / 3.1.2 / 3.1.3 / 3.1.4 / 3.1.5	4.1	
3.1.6	3.2.1	
3.1.7	1.1.1	
4.1.1 / 4.1.2 / 4.1.4 / 4.1.6	4.2.1 / 4.2.2 / 4.2.5	
4.1.3	4.2.4	
4.1.5	3.3.1	Relates to fugitive emissions. Original permit required an annual review. New template simply says fugitive emissions shall not cause pollution.
5	4.3	Notification Section
6.1.1 / 6.1.2 / 6.1.3 / 6.1.4	3.1.1 / Schedule 4	
6.1.5	3.4	
6.2.1	3.1.1 / Schedule 4	No emission to land
6.3.1	3.1.1 / Schedule 4	No emission to water
6.4.1	3.1.1 / Schedule 4	No emission to sewer
6.5.1		Heat- no conditions specified in original Permit. No equivalent condition in the new template
6.6.1	3.5.1	
7.1.1		No equivalent condition. This was not relevant in original Permit
8.1.1	2.4.1	
9.1.1	2.5.1	
10.1.1	4.4.1 / Schedule 7	
11.1.1 / 11.1.2	-	No equivalent condition relating to Minor Operational Change. Requirement under Regn 16 of PPC Regns
Schedule 1	Schedule 6	
Schedule 2	Schedule 5	
Schedule 3	Schedule 5	

Justification for changes made to the black text in Permit Template

Condition 1.7.2

This condition was added to require AMBS to meet with the other Operators on the installation on a monthly basis (as per the Permit Application). This condition is included on all 3 Operators Permits.

Condition 4.1.4

This condition has been added requiring AMBS and Airbus to maintain a list of all combustion plant on the installation and for the list to be available on request.

Julia Frost 18th Jan 2007

Permit Writer

Peer Reviewed

30-1-07.

Authorised Signatory