

NOISE MANAGEMENT PLAN

Meggitt Aerospace Limited

JER1637
Noise Management Plan
Draft
30 August 2019

REPORT

Quality Management

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1 INTRODUCTION

- 1.1.1 A noise management plan has been prepared to manage the issue of noise emissions from production works within the CVD Installation at the Meggitt Aerospace Braking Systems plant in Coventry.
- 1.1.2 The objective of this plan is to prevent noise from impacting upon sensitive receptors (recreational and residential dwellings) in close proximity to the site boundary.
- 1.1.3 The aim of the management plan is to consolidate noise issues on site to assist Meggitt Aerospace Braking Systems in the management of noise emissions and the implementation of control enforcement and remediation of complaints. This will ensure a prompt remedy to any noise associated problem encountered.

1.2 Background

- 1.2.1 Meggitt Aerospace Braking Systems recognises the need to monitor noise emissions during production operations on site in order to maintain the health and wellbeing of all site personnel and residents within the receptive surrounding area.

1.3 Site Location and CVD Installation

- 1.3.1 Meggitt Aerospace operates the Carbon Brake Facility (CVD), Coventry. The site is located to the north of Coventry City Centre, in the Whitmore Park Area. The CVD Installation occupies a relatively small and central part of a very large industrial site covering approximately 1.6 million m², which is predominantly occupied by Meggitt Aerospace installations (refer to Figure 1 in Appendix 1).
- 1.3.2 The main purpose of the CVD Installation is the production of brake discs for aircrafts involving mechanical and heat treatments. All mechanical and heat treatment plant is located within a fully enclosed brick, block and metal building, with only fan and extraction outlets positioned exterior to the plant building.
- 1.3.3 Potential sensitive noise receptors to this installation exist to the immediate north of the plant in the form of firstly Foleshill Park and secondly across the park, domestic dwellings on Everdon Road. Other dwellings located to the south, west and east of the plant are unlikely to be receptive of plant noise emissions due to the distance from the installation and the existence of other industrial installations located between the CVD Installation and the domestic dwellings in the surrounding area.

1.4 History

- 1.4.1 There have been no noise complaints for the site received since before 2012.
- 1.4.2 All previous noise complaints to Meggitt Aerospace Braking Systems, recorded from Chillaton Road to the north west of the CVD Installation have been investigated, documented and were attributed to separate industrial installations and not the Meggitt facility.

2 CVD INSTALLATION

2.1 Noise Receptors

Refer to Figure 2 with Appendix A.

Table 2.1: Noise Receptors

Receptor	Receptor Reference	Distance to Installation Boundary/Source	Recorded Noise Levels at Receptors		Notes
			Day Time	Night Time	
Foleshill / Whitmore Park <ul style="list-style-type: none"> Mixed recreation parkland/woodland and playground area Size 137,000 m² 	001 (A)	To Boundary – 10 m To Park Centre – 105 m	55	-	Occupied regularly for mixed use over varying time periods. No continual long-term individual occupancy within this area. The park is within direct line of sight with the CVD Installation.
Everdon Road <ul style="list-style-type: none"> 3-storey flat block buildings and single unit housing Size – Domestic dwellings occupy a maximum single unit floor area of 200 m² 	002 (A)	To Nearest Flats – 215 m To Nearest Housing – 160m	M	E	Noise level measurements taken from 1-53 Everdon Road and 2 Richard Jay Close, adjacent to Everdon Close.
			52-55	48-50	
			A	O	Domestic dwellings on Everdon Road are within direct line of sight with the CVD Installation. July 2019 – Survey carried out in rear garden of residential dwelling on Sharp Close, approximately 70m north of nearest receptors on Everdon Road.
			52-53	45-48	

Key: M = Morning Measurement, A = Afternoon Measurement, E = Evening Measurement, O = Overnight Measurement

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Domestic Dwellings to the south, east and west of the CVD Installation are not considered receptors from the CVD plant due to the distance from source and additional industry between the CVD Installation and the domestic dwellings.

2.2 Noise Sources

Table 2.2: Noise Sources

Identify Sources of Noise and/or Vibration	Source Reference	Describe the Nature of the Noise or Vibration	Contribution to Overall Emission
Interior Noise Sources			
CVD Installation – Cloth Cell Operations (furnaces, autocutter, carding machines, needle looms, layup tables)	001 (B)	24/7 operation of various plant Low, rumbling noise not discernible from the exterior. Noise levels range between 73 and 82 dB(A)	Low
CVD Installation – Ceramics Area (stamper, furnaces, machining operations, laboratory)	002 (B)	24/7 operation of various plant Low, rumbling noise not discernible from the exterior Noise levels range between 74 and 94 dB(A)	Low
CVD Installation – Brake Materials Machine Shop (grinders, lathes, band saws, ovens, CNC, inspection areas)	003 (B)	24/7 operation of various plant Low, rumbling noise not discernible from the exterior Noise levels range between 73 and 81 dB(A)	Low
Exterior Noise Sources			
CVD Installation DCU Extraction unit to northwest side of plant	004 (B)	24/7 operation in conjunction with internal plant Constant humming or whirring noise with tonal qualities consistent with that from fan noise Greatest source of noise from CVD Installation	Medium
CVD Installation Fan units to south east side of plant	005 (B)	24/7 operation in conjunction with internal plant Low, constant humming or whirring noise with tonal qualities consistent with that from fan noise	Medium/Low
CVD Installation	006 (B)	24/7 operation in conjunction with internal plant Low, rumbling noise blending with exterior fan unit noise	Medium

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Steam Injector Pump to north central side of plant			
CVD Installation Reservoir – 100 metres east of plant	007 (B)	24/7 operation in conjunction with CVD Installation No recognisable noise produced at this source. Background noise associated with other installations in close proximity	Low
CVD Installation Reservoir – 240 metres east of plant	008 (B)	24/7 operation in conjunction with CVD Installation No recognisable noise produced at this source. Background noise associated with other installations in close proximity	Low
Cooling Towers	009	24/7 operation in conjunction with CVD Installation	Low

2.3 Demonstration of BAT

Table 2.3: Demonstration of BAT

Source Reference	Are abatement and actions taken to prevent or minimise emissions BAT?	Actions to be taken to meet BAT and timescales
	<i>Demonstrate that arrangements are BAT for the installation (see sector guidance and H3 for indicative BAT requirements)</i>	<i>Identify proposals for improvement or issues that need to be addressed to meet BAT, with time scales for implementation</i>
001 – 003 (B)	Plant machinery is fitted with appropriate noise suppression as far as is practicable and all operatives are supplied with appropriate hearing protection where required. Noise level monitoring is undertaken periodically as a management control measure for all plant, at operative positions and within the noise hazard areas. As noise levels exterior to the plant are not discernible from internal operations, there are no significant control measures employed in the form of acoustic panelling or process enclosure.	The introduction of any new equipment and machinery into the CVD Installation is carried out in conjunction with Meggitt Aerospace Braking Systems emission management procedures. Consideration to emission management will be undertaken through all stages of design and manufacturing prior to installation and operation within all areas of the plant – Ongoing Plant operatives are trained in noise reduction techniques through the appropriate operation of machinery and continual inspection of plant – Ongoing
004 (B)	Daily inspections and scheduled maintenance, with additional noise assessments undertaken periodically to determine fluctuations and identify if any further controls are necessary.	No additional control measures deemed necessary at this time – Under continual review and assessment
005 (B)	Daily inspections and scheduled maintenance, with additional noise assessments undertaken periodically to determine fluctuations and identify if any further controls are necessary.	Acoustic wall panelling enclosure surrounding fans – Completed January 2008

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006 (B)	Daily inspections and scheduled maintenance, with additional noise assessments undertaken periodically to determine fluctuations and identify if any further controls are necessary.	No additional control measures deemed necessary at this time – Under continual review and assessment
007 – 009 (B)	Minimal noise identified within these areas. Evident noise levels attributed to other industrial installations	No additional control measures deemed necessary at this time – Under continual review and assessment

3 NOISE MANAGEMENT

- 3.1.1 The following list of control measures have been installed by Meggitt Aerospace Braking Systems, Coventry at the CVD Installation in order to control noise emissions from its operation.
- All plant equipment introduced into the installation is fitted with appropriate noise suppression equipment to reduce noise levels as far as is practicable. Meggitt Aerospace Braking Systems have employed an equipment design policy with respect to emissions control during initial conception, design and manufacturing prior to working introduction into the plant.
 - All plant operatives have been appropriately trained in noise reduction techniques through the proper use of machinery and regular plant inspection within the installation.
 - All high noise level areas within the installation are demarcated hearing protection zones with appropriate hearing protection supplied to plant personnel.
 - All plant equipment is visually checked periodically with reactive maintenance employed if required. Visual check logs will be kept in conjunction with this management plan.
 - Maintenance and inspection of all plant machinery will be undertaken periodically with appropriate logs and records compiled and stored.
 - All complaints and non-conformances to this management plan will be investigated and documented.
 - Following complaints, the source of any excessive noise will be identified, investigated and remedial action undertaken either through working practices or machining controls.
 - Noise levels will be monitored periodically to ensure noise generated as a result of production operations does not disturb local residents and site personnel and that operational health and safety guidelines are complied with.
 - Monitoring will be undertaken periodically or in response to any working practice/machinery changes, or complaints. All monitoring will be undertaken to the relevant standard at the operator positions and in the noise hazard areas identified within this report. All noise assessments will be appropriately documented and stored.
 - Noise visual alarms around the site (sound ears) are located around the site, with the required PPE depending on decibels.
 - Periodic checks on noise levels are undertaken by a third-party contractor. The periodic checks are done in each area on selected operators depending on where they are working.

4 NOISE MANAGEMENT PLAN UPDATE – AUGUST 2019

- 4.1.1 A permit variation application was submitted to the Environment Agency in December 2018 for changes to the site, including new carbonising furnace, thermal oxidiser, LNG storage tank and cooling towers.
- 4.1.2 The new carbonising furnace and thermal oxidiser are located within the CVD building and as such, this building will contain any of the noise generated by this equipment. No noise issues have been identified for any of the other proposed plant. Following a site meeting with the EA permitting officer, a noise assessment for the cooling towers was requested to inform the permit variation application.
- 4.1.3 A noise assessment was carried out for the cooling towers in July/August 2019. As part of the assessment, noise surveys were carried out in rear garden of a residential dwelling on Sharp Close to determine a representative baseline background sound levels for noise sensitive receptors that are closest to the site, when not influenced by existing site operations.
- 4.1.4 The cooling towers have been situated in a location and direction which following assessment, it has been concluded that adverse noise impact at noise sensitive receptors closest to the site is unlikely and noise impacts associated with the cooling towers is expected to be low and no noise mitigation measures are needed.
- 4.1.5 The cooling towers shall be subject to current management system procedures for mitigating and managing noise sources such as daily site inspections, routine monitoring and complaints procedures, see section 3 for details.

4.2 Reference Document on the application of Best Available Techniques to Industrial Cooling Systems

- 4.2.1 The new cooling towers have been reviewed against the requirements of the Reference Document on the application of Best Available Techniques to Industrial Cooling Systems¹(December 2001).
- 4.2.2 Table 4.1 below, shows identified reduction techniques within the BAT-approach. For mechanical draught cooling towers, the BREF identifies reduction of fan noise in order to reduce noise emissions.
- 4.2.3 The proposed cooling towers fans are specifically designed for low noise. The technical specification for cooling towers can be found in Appendix B: Cooling Tower Data of the noise assessment for new cooling towers submitted as part of the permit variation application.

¹ https://eippcb.jrc.ec.europa.eu/reference/BREF/cvs_bref_1201.pdf

Table 4.1: Identified reduction techniques within the BAT-approach

Cooling System	Criterion	Primary BAT Approach	Associated Reduction Levels
Natural Draught Cooling Towers	Reduce noise of cascading water at air inlet	Different techniques available	≥ 5 dB(A)
	Reduce noise emission around tower base	E.g. application of earth barrier or noise attenuating wall	< 10 dB(A)
Mechanical Draught Cooling Towers	Reduction of fan noise	Apply low noise fan with characteristics, e.g.: - larger diameter fans; - Reduced tip speed (≤ 40 m/s)	< 5 dB(A)
	Optimised diffuser design	Sufficient height or installation of sound attenuators	Variable
	Noise reduction	Apply attenuation measures to inlet and outlet	≥ 15 dB(A)

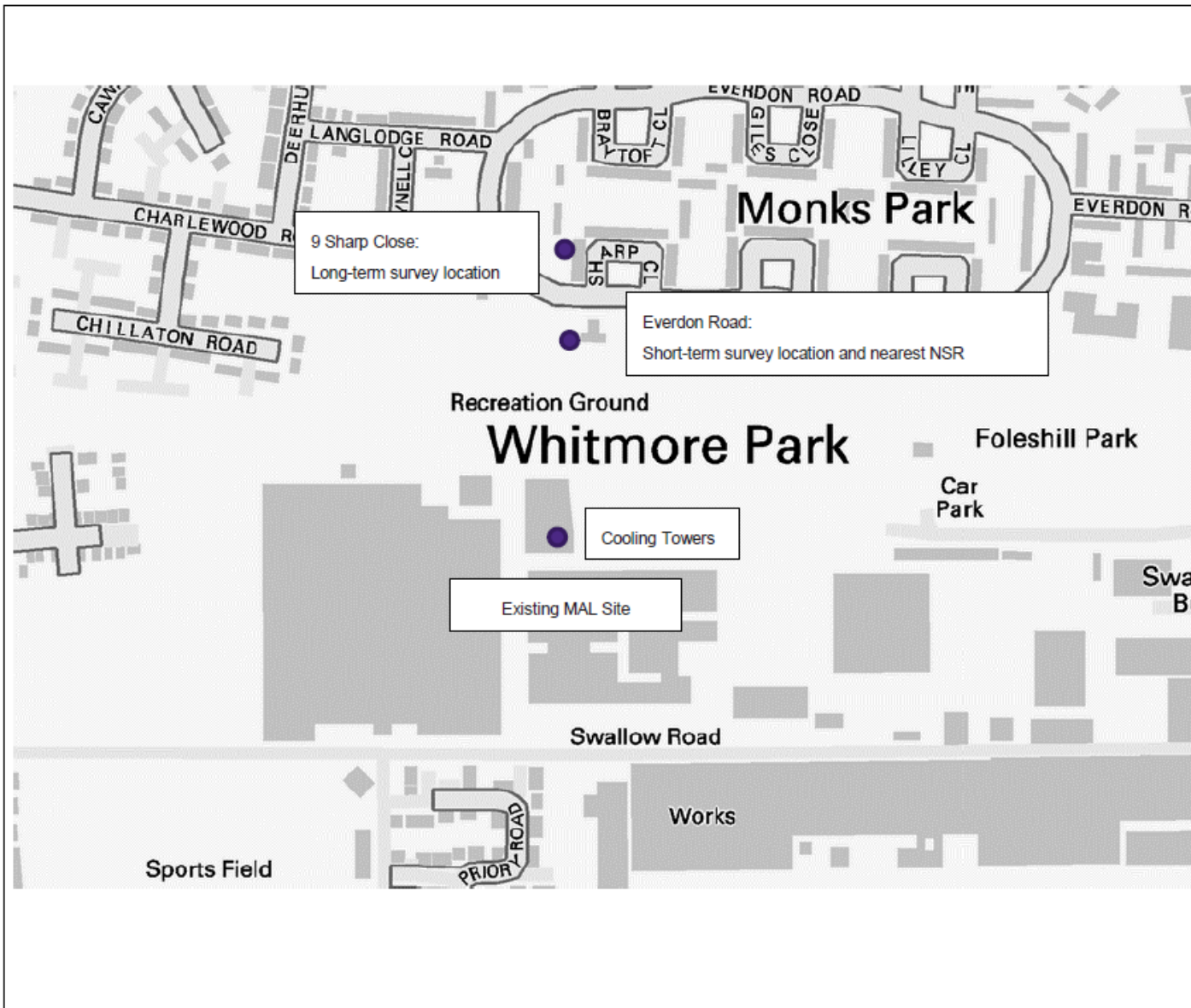
4.2.4 The proposed cooling towers are therefore considered BAT.



APPENDICES

Appendix A

Plans



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Notes

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Assessment of New Cooling Towers

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Figure 1: Site, NSRs and Baseline Survey Location

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