GE Mining
Industrea

BULLETIN 34896
C9 Engine System
Methane Shutdown Set-Point

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Prepared for: Industry

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1 Scope

C9 Diesel Engine Systems produced by GE Mining Industrea to MDR 106483 DES and manufactured between 2010 and 2015. The affected machines are listed in Table 1.

Table 1 - Affected Machines

Machine Type	Serial Number	Plant Identification	State
Dozer	DZR006	DZR001	QLD
Dozer	DZR007	DZR2001	QLD
Dozer	DZR009	DZR03	QLD
Flitmate	FM005	GE001X	NSW
Coal HD	LHD001	CHD001	QLD
Chock Carrier	LWC144	144	QLD/NSW
Chock Carrier	LWC145	145	QLD/NSW
Chock Carrier	LWC151	SHT2001	QLD
Chock Carrier	LWC152	SHT2002	QLD
Chock Carrier	LWC157	Unknown	QLD/NSW
Chock Carrier	LWC158	Unknown	QLD/NSW
Chock Carrier	LWC190	LCC001	QLD
Chock Carrier	LWC191	LCC002	QLD
Chock Carrier	LWC192	LCC003	QLD
Chock Carrier	LWC193	LCC004	QLD
Chock Carrier	LWC194	CT001	QLD
Chock Carrier	LWC195	CT002	QLD
Chock Carrier	LWC196	CT003	QLD
Chock Carrier	LWC207	CCO6	QLD
Chock Carrier	LWC208	CC07	QLD
Chock Carrier	LWC219	CC08	QLD
Shearer Carrier	LSC012	SC001	QLD
Shearer Carrier	LSC013	3756	QLD/NSW
Shearer Carrier	LSC014	STR2001	QLD
Shearer Carrier	LSC015	LST001	QLD

2 Background

Design registration of the C9 Diesel Engine System (DES) was achieved in December 2010. The governing standard at that time was AS3584.2 (Reference 1). Accordingly, the DES is suitable for limited safe operation in mine atmospheres containing up to 1.0% methane.

The governing standard for design registered diesel engines systems was recently changed from AS3584.2 (Reference 1) to MDG43 (Reference 2). One of many key differences between MDG43 and AS3584.2 is the requirement for diesel engine systems to now be designed for safe continuous operation in mine atmospheres containing up to 1.25% methane.

Although the requirements of MDG43 need not be applied retrospectively, it is necessary to consider the impact that this change may have on the likelihood that the DES could be operated outside of its intended design parameters should an operator, for example, incorrectly assume that the DES complies with the requirements of MDG43.

3 Issue

The circumstances outlined in Section 2 represent an elevated risk that surface temperatures may exceed the legislated limit of 150°C should the C9 Diesel Engine System be operated in a mine atmosphere containing more than 1% methane.

4 Action

Methane warning and shutdown parameters should be reset to comply with the recommendations provided in Table 2.

Table 2 - Methane Warning and Shutdown Parameters

	Original OEM Settings	**Recommended Settings**
Visual Warning	1.0 %	0.75 %
Automatic Engine Shutdown	1.25 %	1.0 %

Guidance on how to set warning and shutdown parameters is provided within the following:

- For graphical displays, PR5040100 (Reference 3)
- For character displays, PR50700117 (Reference 4)

5 References

This bulletin refers to the following documents:

1. AS3584.2:2008 Diesel engine systems for underground coal mines Part 2: Explosion Protected, Standards Australia.
2. MDG43 Technical standard for the design of diesel engine systems for use in underground coal mines, NSW Government Department of Industry Resources and Energy.
3. PR5040100 Product Manual Graphical Display, Nautitech Mining Systems Pty Limited.
4. PR50700117 Operations Guide Electric Methane Monitoring Shutdown System, Nautitech Mining Systems Pty Limited.

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