



Government of West Bengal
Office of the District Inspector of Schools (S.E.)
Bankura

Memo No. 1616/5

Date: 30.05.19

From : The District Inspector of Schools (S.E.), Bankura.

To : The HOI of all Govt. Integrated Schools and HOI of those schools where Diesel Generator is used

Sub: Guideline regarding Environment Norms for use of Diesel Generator Sets

Ref : Memo No. 628/SC/Apt dated 25.04.2019 of the C.S.E, West Bengal

Enclosed please find herewith the letter bearing Memo No. as stated under reference regarding guideline of using Diesel Generator sets and environmental norms thereof.

He/She is requested to go through the prescribed guideline and submit a compliance report regarding maintenance of the environmental norms as prescribed within 15 days to the undersigned.

This should be treated as urgent.

Yours faithfully,

District Inspector of Schools(S.E.)
Bankura

Memo No. 1616/1(3)5

Date: 30.05.19

Copy Forwarded to

- 1) The Commissioner of School Education, West Bengal for his kind information.
- 2) The A.I. of Schools Bankura Sadar/Bishnupur/Khatra Sud-Division with a request to circulate the letter to all the schools where Generator is used.
- 3) All the S.I. of Schools under this district to circulate the letter to all the schools including Govt. Model and Integrated Schools where Generator is used and monitor the process of submission of compliance report from the school.

District Inspector of Schools(S.E.)
Bankura

otc

Environmental Standards

Emission

DIESEL GENERATOR SETS : STACK HEIGHT

The minimum height of stack to be provided with each generator set can be worked out using the following formula :

$$H = h + 0.2 \times KVA$$

H = Total height of stack in metre

h = Height of the building in metres where the generator set is installed

KVA = Total generator capacity of the set in KVA

Based on the above formula the minimum stack height to be provided with different range of generator sets may be categorised as follows :

For Generator Sets	Total Height of stack in metre
50 KVA	Ht. of the building + 1.5 metre
50-100 KVA	Ht. of the building + 2.0 metre
100-150 KVA	Ht. of the building + 2.5 metre
150-200 KVA	Ht. of the building + 3.0 metre
200-250 KVA	Ht. of the building + 3.5 metre
250-300 KVA	Ht. of the building + 3.5 metre

Similarly for higher KVA ratings a stack height can be worked out using the above formula.

Source : Evolved By CPCB
[Emission Regulations Part IV COINDS/26/1986-87]

DD CA
16/02/19



WEST BENGAL POLLUTION CONTROL BOARD

(Department of Environment, Government of West Bengal)
"Paribesh Bhawan", 10A, Block - LA, Sector - III,
Salt Lake City, Kolkata - 700 098
Ph.: (033)2335-9088/8212, Fax : (033)2335-8073
Website : www.wbpcb.gov.in E-mail : wbpcbnet@wbpcb.gov.in

Memo No. 187 - 3L/WPB-A(VII)/2019

Dated: 14/02/2019

To
Dr. Soumitra Mohan, IAS
Commissioner, School Education
West Bengal
Directorate of School Education
Bikash Bhawan, 7th floor,
Salt Lake, Kolkata - 700091.

19 FEB 2019

WBPCB/3220/19

Ref. : Your letter issued vide Memo No. 90-Sc/Apt. dated 21st January, 2019

4A/01P/2019

Sir,

MOEFCC issued amended notification vide no. GSR No. 371(E) dated 17th May, 2002 fixing noise standard for the diesel generator sets. Copy of the said notification is enclosed herewith for your kind information and necessary action.

Thanking you,

Yours faithfully


Member Secretary
West Bengal Pollution Control Board

MINISTRY OF ENVIRONMENT AND FORESTS

SOLUTION

New Delhi, the 17th May, 2002

G.S.R.371(E).—In exercise of the powers conferred by sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely :—

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
REGULATIONS

NOISE LIMIT FOR GENERATOR SETS RUN WITH DIESEL

94. NOISE LIMIT FOR GENERATOR SETS RUN WITH DIESEL.
1. Noise limit for diesel generator sets (upto 1000 KVA) manufactured on or after the 1st July, 2003.

The maximum permissible sound pressure level for new diesel generator (DG) sets with rated capacity upto 1000 KVA, manufactured on or after the 1st July, 2003 shall be 75 dB(A) at 1 metre from the enclosure surface.

The diesel generator sets should be provided with integral acoustic enclosure at the manufacturing stage itself.

The implementation of noise limit for these diesel generator sets shall be regulated as given in paragraph 3 below.

2. Noise limit for DG sets not covered by paragraph 1.

Noise limits for diesel generator sets not covered by paragraph 1. shall be as follows:

- 2.1 Noise from DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end.

2.2 The acoustic enclosure or acoustic treatment of the room shall be designed to minimum 25 dB (A) insertion loss or for meeting the ambient noise standard whichever is on the higher side (if the actual ambient noise is on the higher side, may not be possible to check the performance of the acoustic enclosure/room treatment). Under such circumstances the performance of the acoustic enclosure/room reduction upto actual ambient noise level, preferably, in the night time). Measurement for insertion Loss may be done at different points at 0.5 m from acoustic enclosure/room, and then averaged.

- 2.3 The DG set shall be provided with proper exhaust muffler with insertion loss minimum 25 dB(A).

2.4 These limits shall be regulated by the State Pollution Control Boards and the Pollution Control Committees.

- 2.5 Guidelines for the manufacturers/users of Diesel Generator sets shall be as under:

(i) The manufacturer shall offer to the user a standard acoustic enclosure dB(A) insertion loss and also a suitable exhaust muffler with insertion 25 dB(A).

THE NOISE LEVELS IN DG SETS

02. The user shall make efforts to bring down the noise levels due to the DG set outside his premises, within the ambient noise requirements by proper noise and control measures.
03. Installation of a DG set must be strictly in compliance with the recommendations of the DG set manufacturer.
04. A proper routine and preventive maintenance procedure for the DG set should be set and followed in consultation with the DG set manufacturer which would help prevent noise levels of the DG set from deteriorating with use.

3. LIMITS OF NOISE FOR DG SETS (UPTO 1000 KVA) MANUFACTURED OR AFTER THE 1ST JULY, 2003

3.1 Applicability

01. These rules apply to DG sets upto 1000 KVA rated output, manufactured or imported in India, on or after 1st July, 2003.
02. These rules shall not apply to:
 - (a) DG sets manufactured or imported for the purpose of exports outside India; and
 - (b) DG sets intended for the purpose of sample and not for sale in India.

3.2 Requirement of Certification

- Every manufacturer or importer (hereinafter referred to as "supplier") of DG set (hereinafter referred to as "product") to which these regulations apply must have valid certificates of Type Approval and also valid certificates of Conformity of Production for each year, for all the product models being manufactured or imported from 1st July, 2003 with the noise limit specified in paragraph 1.

~~3.3 Sale, import or use of DG sets not complying with the rules prohibited~~

No person shall sell, import or use of a product model, which is not having a valid Type Approval certificate and Conformity of Production certificate.

3.4 Requirement of Conformance Labelling

- (i) The supplier of the 'product' must affix a conformance label on the product meeting the following requirements:-
 - (a) The label shall be durable and legible;
 - (b) The label shall be affixed on a part necessary for normal operation of the 'product' and not normally requiring replacement during the 'product' life.

(ii) The conformance label must contain the following information:

- (a) Name and address of the supplier (if the address is described in the owner's manual, it may not be included in the label)
- (b) Statement "This product conforms to the Environment (Protection) Rules, 1986"
- (c) Noise limit viz. 75 dB(A) at 1 m
- (d) Type approval certificate number.
- (e) Date of manufacture of the product.

3.5 Nodal Agency

- (i) The Central Pollution Control Board shall be the nodal agency for implementation of these regulations.
- (ii) In case of any dispute or difficulty in implementation of these regulations, the matter shall be referred to the nodal agency.
- (iii) The nodal agency shall constitute a Committee to advise it on all matters, including the disputed matters, related to the implementation of these regulations.

3.6 Authorised agencies for certification

The following agencies are authorized to carry out such tests as they deem necessary for giving certificates for Type Approval and Conformity of Production testings of DG sets and to give such certificates :-

- (i) Automotive Research Association of India, Pune
- (ii) National Physical Laboratory, New Delhi
- (iii) Naval Science & Technology Laboratory, Visakhapatnam
- (iv) Fluid Control Research Institute, Palghat
- (v) National Aerospace Laboratory, Bangalore

3.7 Compliance and Testing Procedure

The compliance and testing procedure shall be prepared and published by the Central Pollution Control Board, with the help of the certification agencies.

THE ENVIRONMENTAL PROTECTION
REGULATIONS FOR NEW DIESEL ENGINES
UP TO 800 KW FOR
GENERATOR SETS (GENSETS) APPLICATIONS

1. Emission Limits

The emission limits for new diesel engines up to 800 kw, for gensets applications shall be as given in the Table below:

TABLE

Capacity of diesel engines	Date of implementation	Emission Limits (g/kw-hr) for					Smoke Limit (light absorption coefficient, m^{-1}) (at full load)	Test cycle	
		NO _x	HC	CO	TM			Torque %	Weighting factors
Up to 19 kw	1.7.2003	9.2	1.3	5.0	0.6	0.7	100	0.05	0.25
	1.7.2004	9.2	1.3	3.5	0.3	0.7	75		
>19 kw upto 50 kw	1.7.2003	9.2	1.3	5.0	0.5	0.7	50	0.30	0.30
	1.7.2004	9.2	1.3	3.5	0.3	0.7	25		
>50 kw upto 260 kw	1.7.2003	9.2	1.3	3.5	0.3	0.7	10	0.10	0.10
	1.7.2004	9.2	1.3	3.5	0.3	0.7			
> 260 kw upto 800 kw	1.7.2004	9.2	1.3	3.5	0.3	0.7			

2. Applicability

These rules shall apply to all new diesel engines for genset applications (hereinafter referred to as 'engine') manufactured in India and all diesel engines for genset applications and diesel gensets (hereinafter referred to as 'product'), imported into India, after the effective date:

Provided that these rules shall not apply to :-

- (a) any engine manufactured or engine or product imported for the purpose of export outside India, or;
- (b) any engine or product intended for the purpose of sample only and not for sale in India.

Requirement of certification

Every manufacturer of engine or every importer of engine or product must have valid certificates of Type Approval and certificates of Conformity of Production for each year, for all engine models being manufactured or for all engine or product models being imported, after the effective date with the emission limit as specified in paragraph 1.

4. Sale, import or use of engine or product not complying with these rules

No person shall sell, import or use of an engine or a product which is not having a valid Type Approval certificate and Conformity of Production certificate as per paragraph 3.

5. Requirement of conformance labelling

- (i) All the engines (individually or as part of the product) shall be clearly engrave 'Genset Engine' on the cylinder block.
- (ii) The engine or the product must be affixed with a conformance label meeting the following requirements:-
 - (a) the label shall be durable and legible;
 - (b) the label shall be affixed on a part necessary for normal operation of the engine or the product and not normally requiring replacement during the life of the engine or the product.
- (iii) The conformance label must contain the following information:
 - (a) name and address of the engine manufacturer or the engine or product importer (if the address is given in the owner's manual, it may not be included in the label);
 - (b) statement that 'this engine or product conforms to the Environmental Protection Rules, 1986';
 - (c) type approval certificate number;
 - (d) date of manufacture of engine or in case of import, the date of import of the engine or the product.

6. Compliance with BIS specifications

All engines up to 20 kw (individually or as part of the product) shall carry ISI mark and meet relevant BIS specifications (IS 10001).

7. Nodal agency

- (i) The Central Pollution Control Board shall be the nodal agency for implementation of these rules.
- (ii) In case of any dispute or difficulty in implementation of these rules the matter shall be referred to the nodal agency.
- (iii) The nodal agency shall constitute a Committee to advise it on all matters including the disputed matters, related to the implementation of these rules.

8. Authorised agencies for certification.

The following agencies are authorized to carry out such tests as they deem necessary for giving certificates of Type Approval and Conformity of Production tests for Diesel engines and to give such certificates :-

- (i) Automotive Research Association of India, Pune.
- (ii) Vehicle Research and Development Establishment, Ahmednagar.

9. Compliance and testing procedure.

The compliance and testing procedure shall be prepared and published by the Central Pollution Control Board with the help of the Certification Agencies.

10. Fuel Specification.

The specification of commercial fuel applicable for diesel gensets shall be the same as applicable for commercial HSD(High Speed Diesel) applicable for diesel vehicles in the area, from time to time."

3c. "C" In the said rules, in Schedule VI, in Part E relating to NOISE STANDARDS, in clause D, the entry "(d) Diesel generator for domestic purposes" shall be omitted.

[F No. Q-19/22/2/2001-CPA]

C. VISWANATH, Jr. Secy

Note:—The principal rules were published in the Gazette of India vide number S.O.811(E) 19th November, 1986 and subsequently amended vide S.O.433(E) dated 18th April, 1987, S.O.64(E) dated 18th January, 1988, S.O.3(E) dated 3rd January, 1989, S.O.190(E) dated 15th March, 1989, G.S.R. 913(E) the 24th October, 1989, S.O.12(E) dated the 8th January, 1990, G.S.R.742(E) dated the 30th August, 1990, S.O.23(E) dated the 16th January, 1991, G.S.R. 93(E) dated the 21st February, 1991, G.S.R. 95(E) dated the 12th February, 1992, G.S.R. 329(E) dated the 13th March, 1992, G.S.R. 475(E) dated the 5th May, 1992, G.S.R. 797 (E) dated the 1st October, 1992, G.S.R. 386 (E) dated the 28th April, 1993, G.S.R. 422(E) dated the 19th May, 1993, G.S.R. 801(E) dated the 31st December, 1993, G.S.R. 176(E) dated the 3rd April, 1996, G.S.R. 631 (E) dated the 31st October, 1997, G.S.R. 504 (E) dated the 20th August, 1998, G.S.R. 7(E) dated the 2nd January, 1999, G.S.R. 682 (E) dated the 5th October, 1999, G.S.R.742-(E) dated the 25th September, 2000, G.S.R. 72(E) dated 6th February, 2001 and G.S.R.54(E) dated 22.1.2002.

GUIDELINES FOR STACK HEIGHT FOR DIESEL GENERATOR SETS

[As published by CPCB in Emission Regulations, Part IV, CO/INDS/26/1986-87]

1. The minimum height of stack to be provided with each generator set can be worked out by using the following formula:

$$H = h + 0.2(KVA)^{0.5}$$

H = Total height of stack in meter

h = Height of the building in meters where the generator set is installed

KVA = Total generator capacity of the set in KVA

Based on the above formula the minimum stack height to be provided with different range of generator sets may be categorized as follows:

1.1 For Generator Sets	Total Height of Stack in Meter
50 KVA	Ht. of the building + 1.5 meter
50 - 100 KVA	Ht. of the building + 2.0 meter
100 - 150 KVA	Ht. of the building + 2.5 meter
150 - 200 KVA	Ht. of the building + 3.0 meter
200 - 250 KVA	Ht. of the building + 3.5 meter
250 - 300 KVA	Ht. of the building + 3.5 meter

Similarly for higher KVA ratings a stack height can be worked out using the above formula.

- 1.2 The stack height for generators was originally evolved for those to be used in the metropolitan area of Delhi. The objective was to avoid the problem of road side discharge from stacks and build-up of pollutants in the ambient air. However, due to shortage of power, factories have installed diesel-based power generating (DG) sets. Many of the factories are away from metropolitan or urban areas where standards covered in 1.1 would appear stringent. It is also expected that a DG set is a stand-by used only during power breakdowns. For both these reasons, the relaxation in the height of the stack from ground level is made to two and a half times the building height. This building may be either the one in which the DG set is housed or a building, with people working, within the premises of the factory. This is also applicable for oil-fired furnaces, engines and equivalent.

The State Pollution Control Board would decide if the plant is sufficiently removed from urban, residential or commercial areas so that this relaxation from 1.1 is applicable.

- 1.3 It is evident that the stack requirement for coal-fired boilers is more than that required for DG sets. This is necessary because ambient values for sulphur dioxide and nitrogen oxides indicate stricter for sulphur dioxide.

EMISSION STANDARDS FOR DIESEL ENGINES (ENGINE RATING MORE THAN 0.8 MW (800 KW)) FOR POWER PLANT, GENERATOR SET APPLICATIONS AND OTHER REQUIREMENTS

[Notified by Environment (Protection) Third Amendment Rules, 2002, vide G.S.R. 489(E), dated 9th July, 2002, at serial no. 96]

Table

Parameter	Area Category	Total engine rating of the plant (includes existing as well as new generator sets)	Generator sets commissioning date	Before 1.7.2003	Between 1.7.2003 and 1.7.2005	On or after 1.7.2005
NO _x (as NO ₂) (at 15% O ₂), dry basis, in ppmv	A	upto 75 MW	1100	970	710	
	B	upto 150 MW				
	A	More than 75 MW	1100	710	360	
	B	More than 150 MW				
NMHC (as C) (at 15 % O ₂), mg/Nm ³	Both A and B		150	100		
PM (at 15% O ₂), mg/Nm ³	Diesel Fuels – HSD & LDO	Both A and B	75	75		
	Furnace Oils-LSHS & FO	Both A and B	150	100		
CO (at 15% O ₂), mg/Nm ³	Both A and B		150	150		
Sulphur content in fuel	A			<2%		
	B			<4%		
Fuel specification	For A only	up to 5 MW	Only Diesel Fuels (HSD, LDO) shall be used.			
Stack height (for generator sets commissioned after 1.7.2003)	Stack height shall be maximum of the following, in meter : <ul style="list-style-type: none"> i) $14Q^{0.3}$, Q =Total SO₂ emission from the plant in kg/hr. ii) Minimum 6 m. above the building where generator set is installed. iii) 30 m. 					

Note :

1. Acronyms used :

MW	Mega (10^6) Watt	FO	Furnace Oil
NO _x	Oxides of Nitrogen	HSD	High Speed Diesel
NO ₂	Nitrogen Dioxide	LDO	Light Diesel Oil
O ₂	Oxygen	LSHS	Low Sulphur Heavy Stock
NMHC	Non-Methane Hydrocarbon	KPa	Kilo Pascal
C	Carbon	mm	Milli (10^{-3}) metre
PM	Particulate Matter	kg/hr	Kilo (10^3) gram per hour
CO	Carbon Monoxide	mg/Nm ³	Milli (10^{-3}) gram per normal Metre cubic
SO ₂	Sulphur Dioxide		
ppmv	part per million (10^6) by volume		

2. Area categories A and B are defined as follows:

Category A: Areas within the municipal limits for towns/cities having population more than 10 lakhs and also upto 5 km beyond the municipal limits of such towns/cities.

Category B: Areas not covered by category A.

3. The standards shall be regulated by the State Pollution Control Boards or Pollution Control Committees, as the case may be.
4. Individual units with engine ratings less than or equal to 800 KW are not covered by this notification.
5. Only following liquid fuels viz. High Speed Diesel, Light Diesel Oil, Low Sulphur Heavy Stock and Furnace Oil or liquid fuels with equivalent specification shall be used in these power plants and generator sets.
6. For expansion project, stack height of new generator sets shall be as per total Sulphur Dioxide emission (including existing as well as additional load).
7. For multi engine plants, flues shall be grouped in cluster to get better plume rise and dispersion. Provision for any future expansion should be made in planning stage itself.
8. Particulate Matter, Non-Methane Hydrocarbon and Carbon Monoxide results are to be normalized to 25°C, 1.01 Kilo Pascal (760 mm of mercury) pressure and zero percent moisture (dry basis).