[1][(iii) International Centre for Automotive Technology, Manesar (Haryana)]

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].

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

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	Up to 75 MW	1100	970	710
		B	Up to 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	

[1] Inserted by Rule 2(b) of the Environment (Protection) Second Amendment Rules, 2008 notified by G.S.R.280(E), dated 11.4.2008.

[2] Serial No.96 and entries relating thereto inserted by Rule 2 of the Environment (Protection) Third Amendment Rules, 2002 notified vide Notification G.S.R.489(E), dated 9.7.2002.

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
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 metre: (i) 14 $Q^{0.3,}$ Q=Total SO_2 emission from the plant in kg/hr. (ii) Minimum 6m.above the building where generator set is installed. (iii) 30m.				

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 of towns/cities having population more than 10 lakhs and also up to 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 specifications 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, fuels 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 25^0C, 1.01Kilo Pascal (760 mm of mercury) pressure and zero percent moisture (dry basis).

9. Measurement shall be performed at steady load conditions of more than 85% of the rated load.

10. Continuous monitoring of Oxides of Nitrogen shall be done by the plants whose total engine capacity is more than 50 Mega Watt. However, minimum once in six month monitoring for other parameters shall be adopted by the plants.

11. Following methods may be adopted for the measurement of emission parameters:-

Sl No.	**Emission Parameters**	**Measurement Methods**
1.	Particulates	Gravimetric
2.	SO_2	Barium Perchlorate – Thorin indicator method
3.	NO_x	Chemiluminescence, Non Dispersive Infra Red, Non Dispersive Ultra-Violet (for continuous measurement), Phenol disulphonic method
4.	CO	Non Dispersive Infra Red
5.	O_2	Paramagnetic, Electrochemical Sensor
6.	NMHC	Gas Chromatograph-Flame Ionisation Detector