Press Release

Ambient Air and Noise Pollution Levels - Deepawali 2007

Executive Summary

Central Pollution Control Board has conducted Ambient Air quality and Noise monitoring at seven and thirteen locations respectively, in Delhi on the occasion of Deepawali festival, 2007 to see the environmental impact of bursting crackers. The **findings of the monitoring** reveal following observation;

- **Noise levels** during Deepawali, 2007 (November 9) were generally higher than Deepawali, 2006 (October 21) possibly because of bursting of increased number of crackers.

- **Air pollution levels** during 2007 (November 9) were found to be higher as compared to Deepawali, 2006 (October 21) **mainly because of following adverse meteorological conditions**:

- Decrease in 24 hourly average temperature from 24.5°C on October 21, 2006 to 21.1°C on November 9, 2007.

- Decrease in 24 hourly average wind speed from 0.29 m/sec on October 21, 2006 to 0.10 m/s on November 9, 2007.

- Decrease in 24 hourly average mixing height from 467 metre on October 21, 2006 to 301 metre on November 9, 2007.

Detailed Report

Ambient Air and Noise Pollution Levels - Deepawali 2007

Central Pollution Control Board has conducted Ambient Air quality and Noise monitoring at various locations in Delhi on the occasion of Deepawali festival, 2007 to see the environmental impact of bursting crackers.

To see the impact of bursting of crackers etc. on Air quality, the 24 Hourly continuous Ambient Air quality monitoring was carried out at BSZ Marg (ITO), Delhi college of Engineering, Sirifort and East Arjun Nagar from 08 to 10 November 2007. Round-the-clock Air quality monitoring was also carried out on November 09, 2007 (Deepawali day) at the monitoring stations of CPCB (BSZ Marg (ITO), Pitampura, Sirifort, Janakpuri, Nizamuddin, Shahzada Bagh, Shahdara). The air quality data is presented in Table 1.

The Ambient noise level monitoring was carried out for short duration (half an hour average) at 10 locations in Delhi namely Connaught Place, India Gate, Raja Garden, Pitampura, Model Town, Mayur Vihar Phase – II, Lajpat Nagar, AIIMS, New Friends Colony and East Arjun Nagar between 18.00 hours & 24.00 hours on November 09, 2007 during Deepawali celebration. Noise monitoring for long duration (six hour average, 1800 to 2400 hours) at three locations namely Kamla Nagar, BSZ Marg (ITO) and Dilshad Garden was also carried out during the same period. Pre-Deepawali background monitoring was carried out on October 19, 2007 during the same period for comparison. The noise level data is presented in Table - 2.

Findings of Ambient Air Quality Monitoring

Sulphur dioxide (SO_2):

Sulphur dioxide concentrations on Deepawali day, 2007 increased at five locations, decreased at one location and was same at one location, as compared to Deepawali day, 2006. During Deepawali day, 2007, SO_2 ranged between 8 and 113 µg/m^3 as compared to 10 and 45 µg/m^3 during Deepawali day, 2006 The trend of SO_2 levels have been found to be increasing in general but has been within the prescribed standard of 80 µg/m^3 at all the locations except Janakpuri, where it was found to be highest at 113 µg/m^3.

Nitrogen dioxide (NO_2):

Nitrogen dioxide concentration on Deepawali day, 2007 has increased at all the seven locations, as compared to Deepawali day, 2006. The NO_2 levels exceeded the prescribed standard of 80 µg/m^3 at two locations namely, Janakpuri and Bahadur Shah Zafar Marg (ITO). At ITO, being high traffic zone, NO_2 exceeds the standard generally even on normal days. NO_2 values during Deepawali day ranged between 45 and 91 µg/m^3 as compared to 37 and 54 µg/m^3 in 2006. Highest value of NO_2 at 91 µg/m^3 was observed at Janakpuri (Residential Area).

Suspended Particulate Matter (SPM):

SPM levels have shown increasing trend at all the locations on Deepawali day, 2007 as compared to 2006. SPM levels during Deepawali day, 2007 ranged between 842 and 1463 µg/m^3 against the level of 485 to 704 µg/m^3 during Deepawali, 2006. The highest SPM of 1463 µg/m^3 was reported at Pitampura (Residential Area).

Respirable Suspended Particulate Matter (RSPM):

RSPM levels have also shown increasing trend at all the locations on Deepawali day, 2007 as compared to 2006. RSPM values during Deepawali day, 2007 ranged between 610 and 1294 µg/m^3 as compared to 265 and 440 µg/m^3 during Deepawali, 2006. The highest RSPM of 1294 µg/m^3 was reported at Pitampura (Residential Area).

Conclusion:

Increase in SO_2, NO_2, SPM and RSPM values in general may be attributed to adverse meteorological conditions, i.e. decrease in 24 hourly average temperature from 24.5^oC in 2006 to 21.1 ^oC in 2007; 24 hourly average wind speed from 0.29 m/sec in 2006 to 0.10 m/s in 2007 and 24 hourly average mixing height from 467 metre in 2006 to 301 metre in 2007 on Deepawali days (October 21, 2006 and November 9, 2007) which has caused accumulation of pollutants at lower level. Thereby increasing the concentration of all air pollutants substantially. Increase in noise level in general this year also indicate that air pollution to some extent might have increased due to bursting of more crackers.

Adverse meteorological conditions are generally observed during beginning of winter season (November) and hence the adverse meteorological conditions on Deepawali day on November 9, 2007 where similar to one observed during Deepawali, 2004 (November 12, 2004) when similar type of high level of air pollutants were found on Deepawali day.

Findings of Ambient Noise Level Monitoring – Deepawali, 2007

- The Ambient noise level at all the locations, on Deepawali day has increased as compared to the normal day, i.e. October 19, 2007 (pre-Deepawali) except India Gate.

- Out of thirteen locations monitored, ambient noise level has **increased at eight locations** whereas it has **decreased at three locations and was unchanged at two locations** as compared to the Deepawali day, 2006.

- The average ambient noise levels on normal day were ranging from 55 to 71 dB(A) Leq. and on Deepawali day 63 to 87 dB(A) Leq.

- This year average noise levels on Deepawali day were found to be ranging from 63 to 87 dB(A)Leq. against last year's average values of 56 to 85 dB(A) Leq.

Conclusion

Overall noise level during Deepawali 2007 was higher than Deepawali 2006 possibly due to bursting of more noisy crackers.

Overall Conclusion:

- Noise levels during Deepawali, 2007 (November 9) were generally higher than Deepawali, 2006 (October 21) possibly because of bursting of increased number of crackers.

- Air pollution levels during 2007 (November 9) were also found to be higher as compared to Deepawali, 2006 (October 21) mainly because of adverse meteorological conditions, due to substantial decrease in temperature, wind speed and mixing height as compared to Deepawali, 2006 (October 21). Further, the meteorological conditions during evening / night hours (06.00 p.m. to 06.00 a.m.) were even worst in 2007 (November 9) as compared to 2006 (October 21).

  To some extent, increase in air pollution could also be attributed to the bursting of increased number of crackers

  For clarifications if required, any of the following officials may be contacted.

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Table 1 Ambient Air Quality at Various Locations during Deepawali 2006 & 2007

(All Values are in microgram per cubic metre)

Parameter→		**SO_2**		**NO_2**		**SPM**		**RSPM**	
Year→		**2006**	**2007**	**2006**	**2007**	**2006**	**2007**	**2006**	**2007**
B.S.Z Marg (ITO)		10	↑27	51	↑83	489	↑842	304	↑670
Pitampura (R)		27	↑72	42	↑64	687	↑1463	388	↑1294
Sirifort (R)		16	8↓	41	↑45	519	↑1314	440	↑1139
Janakpuri (R)		31	↑113	45	↑91	704	↑1198	426	↑1068
Nizamuddin (R)		19	↑30	54	↑61	485	↑1236	265	↑1012
Shahazada Bagh (I)		26	↑46	53	↑64	586	↑1324	300	↑966
Shahdara (I)		45	45→	37	↑53	625	↑904	395	↑610
Concentration Range for Delhi		***10 - 45***	***8 - 113***	***37 - 54***	***45 - 91***	***485 - 704***	***842 - 1463***	***265 - 440***	***610 - 1294***
Ambient Air quality Standards	***Residential (R)***	***80***		***80***		***200***		***100***	
	Industrial (I)	***120***		***120***		***500***		***150***	

* Deepawali Day 2006 – 21 October
* Deepawali Day 2007 – 09 November

Table 2 Ambient Noise Level at different places in Delhi during Deepawali days in the year 2005-2007

S. No.	Location	Average Noise Level in dB (A) Leq.						Standard Limit
		Normal Day			Deepawali Day			
		2005	2006	2007	2005	2006	2007	
01.	All India Institute of Medical Sciences (AIIMS) (R)	60	56	56	63	61	↑65	55
02.	Lajpat Nagar (R)	62	65	66	78	73	71↓	55
03.	New Friends Colony (R)	64	57	55	76	70	↑79	55
04.	East Arjun Nagar (R)	66	69	59	88	79	↑85	55
05.	Connaught Place (C)	66	72	67	68	73	70↓	65
06.	India Gate (S)	65	67	64	63	56	↑63	50
07.	Mayur Vihar Phase – II (R)	71	55	62	89	85	↑87	55
08.	Raja Garden (R)	75	70	70	76	75	↑79	55
09.	Pitam Pura (R)	74	67	69	77	80	80	55
10.	Model Town (R)	65	59	62	85	81	81	55
11.	Kamla Nagar (R)	62	63	71	77	76	↑78	55
12.	Dilshad Garden (R)	60	60	56	81	72	↑75	55
13.	I.T.O (C)	74	72	68	73	72	68↓	65

Noise Monitoring time from **1800 hours to 2400 hours**
Noise level comparison (↑ or ↓) with respect to 2006
Normal day 19th October 2007.
R - Residential
C - Commercial
S - Sensitive