

Item Nos. 11&12

(Pune Bench)

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

(By Video Conferencing)

Original Application 143/2016 (WZ)
(M.A. No. 377/2017)

Dileep Nevatia

Applicant

Versus

Union of India, Secretary MoEF& CC & Anr.

Respondent(s)

WITH

Original Application 206/2022

Raja Singh

Applicant

Versus

Union of India & Ors.

Respondent(s)

Date of hearing: 19.04.2022

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE MR. JUSTICE DINESH KUMAR SINGH, JUDICIAL MEMBER
HON'BLE PROF. A. SENTHIL VEL, EXPERT MEMBER
HON'BLE DR. VIJAY KULKARNI, EXPERT MEMBER
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER**

Applicant: Mr. Dileep Nevatia, Applicant in Person in OA 143/2016
Mr. C P Mittal, Advocate for Applicant in OA 206/2022

Respondent(s): Mr. Siddhesh Paranjape, Advocate for Mr. Rahul Garg, Advocate
for MoEF& CC (in OA 143/2016
Mr. Aniruddha S Kulkarni, Advocate for CPCB (in OA 143/2016)

ORDER

1. This order will deal with O.A. No. 143 of 2016 and O.A. No. 206 of 2022 as both the matters have common prayer for direction to evolve standards for Indoor Air Quality (IAQ).

2. In O.A. No. 143/2016, case set out by the applicant is Indoor Air Pollution (IAP) is as serious as Outdoor Air Pollution (OAP). IAP has potential of affecting public health. IAP causes large number of premature deaths due to pneumonia, chronic obstructive pulmonary disease (COPD), and lung cancer. Most affected groups are women and young children. Morbidities associated with IAP are respiratory illnesses, viz., acute respiratory tract infection and COPD, poor perinatal outcomes like low birth weight and still birth, cancer of nasopharynx, larynx, lung and leukemia. Sulphur dioxide and nitrogen dioxide cause wheezing and exacerbation of asthma. Nitrogen dioxide causes respiratory infections and deteriorates lung functions. Sulphur dioxide has an additional etiological role in exacerbation of COPD and cardiovascular disease. Risk of poor perinatal outcomes, viz., low birth weight and perinatal death increases from exposure to carbon monoxide. People disturbed by excessive levels of indoor noise have increased levels of stress hormones that raise their blood pressure and other risk factors, leading to disease and death. In terms of environmental burden on health, noise is second only to air pollution, according to the WHO. In spite of this factual position, no standards have been laid down for IAP by the MoEF&CC or the CPCB.

3. The application was first heard on 04.10.2016. The Tribunal issued notice to the Respondents – MoEF&CC and CPCB. Replies have been filed by the MoEF&CC and CPCB. Stand of the MoEF&CC is that indoor air quality norms have been developed by Bureau of Indian Standards (BIS) incorporated in National Building Code (2005) of India, applicable to the mega malls where large confined conditions exist. General household buildings do not have air handling system installed with them and as such are largely unregulated. Besides, noise Standards

and the aged persons. Concededly, there are various standards prescribed for indoor air pollution by the WHO, US and other advanced countries. We therefore, expect the Ministry to pursue with this matter vigorously to ensure that the standards prescribed are at the earliest.

List the matter on 30th August, 2018 before which the MoEF shall file a report on the progress made in the matter by way of an affidavit.”

5. The matter has been taken up today after almost four years but no progress report has been filed by the MoEF&CC, as directed.

6. **In O.A. No. 206 of 2022**, case of the applicant is that large public buildings where people gather in large number need to maintain safe and healthy air quality by appropriate regulation under provisions of the Air Act, 1981, to safeguard against air borne infection. The applicant earlier filed a writ petition before the Delhi High Court being the W.P. (C) No. 7810/2021 which was disposed of vide order dated 05.07.2021 with a direction that the same be treated as representation to the authorities – MoEF&CC, Ministry of Housing, DPCC and Commission for Air Quality Management. The DPCC rejected the representation by stating that the Air Act, 1981 is not applicable to indoor pollution. Other authorities have not taken any decision. According to the applicant, the view taken by the DPCC is erroneous as air pollution in large public buildings needs regulation in the interest of public health. The applicant has relied upon articles annexed to the petition as Annexures D to G. It is submitted that it is permissible to lay down standards under the Environment (Protection) Act, 1986 (EP Act), Environment (Protection) Rules, 1986 (EP Rules) as also the Air (Prevention and Control of Pollution) Act, 1981 (Air Act). The applicant has also referred to statement of objects and reasons of the Air Act, 1981 as follows:-

“2. The presence in air, beyond certain limits, of various pollutants discharged through industrial emissions and from certain human activities connected with the traffic, heating,

use of domestic fuel, refuse, incinerations, etc. has a detrimental effect on the health of the people as also the animal life, vegetation and property.”

7. We have heard learned counsel for the parties. During the hearing, apart from the pleadings referred to above, some further material has been relied upon to which reference will be made.

8. Question for consideration is whether a substantial question of environment arises under section 14 of the NGT Act and whether a case is made out for a direction under section 15(1) of the NGT Act.

9. We have duly considered the averments in the application, earlier order of the Tribunal dated 5.7.2018, stand of the respondents, relevant statutory provisions and the material produced during the hearing.

10. As per an article on the subject¹, toxic gases and particulate matter may be generated indoor which may adversely affect the employees working in such places and also general public visiting such places. The sources of indoor air pollutants can include building material, formaldehyde, volatile organic carbon, radon, asbestos, particulate matter, gaseous pollutants, biological pollutants. Conclusion in the article is as follows:-

“In above review made, it is evident that the indoor air quality is poorly maintained in many Indian buildings because of various reasons. Poor ventilation, reduced per capita floor space, usage of solid fuels for cooking and household products releasing toxic gases and particulate matter are the more depending factors for indoor air pollution. Polluted ambient air is also responsible for indoor air pollution as there is high circulation of air between indoor and ambient air. Therefore, maintaining good ambient condition with natural trees, maximum reduction in usage of indoor polluting household products can help in reducing the indoor pollution to the maximum.”

¹ **Retraction: Review on indoor air quality in Indian buildings** (IOP Conf. Ser.: Mater. Sci. Eng. 1145 012037) - <https://iopscience.iop.org/article/10.1088/1757-899X/1145/1/012156>

11. In WHO Guidelines for indoor air quality², reference is made to sources of pollutants in indoor buildings including benzene, carbon monoxide, formaldehyde, naphthalene, nitrogen dioxide, polycyclic aromatic hydrocarbons, radon, trichloroethylene and tetrachloroethylene. Having regard to such pollutants, WHO has suggested guidelines as follows:-

“ Table A. Summary of indoor air quality guidelines for selected pollutants

Pollutant	Critical outcome(s) for guideline definition
<i>Benzene</i>	<ul style="list-style-type: none"> • Acute myeloid leukemia (sufficient evidence on causality) • Genotoxicity
<i>Carbon monoxide</i>	<i>Acute exposure-related reduction of exercise tolerance and increase in symptoms of ischaemic heart disease (e.g. ST-segment changes)</i>
<i>Formaldehyde</i>	<i>Sensory irritation</i>
<i>Naphthalene</i>	<i>Respiratory tract lesions leading to inflammation and malignancy in animal studies</i>
<i>Nitrogen dioxide</i>	<i>Respiratory symptoms, bronchoconstriction, increase bronchial reactivity, airway inflammation and decreases in immune defence, leading to increased susceptibility to respiratory infection</i>
<i>Polycyclic aromatic hydrocarbons</i>	<i>Lung cancer</i>
<i>Radon</i>	<i>Lung cancer</i> <i>Suggestive evidence of an association with other cancers, in particular leukemia and cancers of the extrathoracic airways.</i>
<i>Trichloroethylene</i>	<i>Carcinogenicity (liver, kidney, bile duct and non-Hodgkin’s lymphoma), with the assumption of genotoxicity</i>
<i>Tetrachloroethylene</i>	<i>Effects in the kidney indicative of early renal disease and impaired performance.</i>
Guidelines	Comments
<ul style="list-style-type: none"> • No safe level of exposure can be recommended. • Unit risk of leukemia per $1\mu\text{g}/\text{m}^3$ air concentration is 6×10^{-6} 	

² World Health Organization-Selected Pollutant - https://www.euro.who.int/__data/assets/pdf_file/0009/128169/e94535.pdf

<ul style="list-style-type: none"> The concentration of airborne benzene associated with an excess lifetime risk of 1/10000, 1/100000 are 17, 17 and 0.17 $\mu\text{g}/\text{m}^3$, respectively. 	
<ul style="list-style-type: none"> 15 minutes-100mg/m^3. 1 hour-35 mg/m^3. 8 hours-10 mg/m^3. 24 hour-7 mg/m^3. 	
0.1 mg/ m^3 -30 minutes average	The guideline (valid for any 30-minute period) will also prevent effects on lung function as well as nasopharyngeal cancer and myeloid leukemia
0.1 mg/ m^3 -annual average	The long-term guideline is also assumed to prevent potential malignant effect in the airways
<ul style="list-style-type: none"> 200 $\mu\text{g}/\text{m}^3$-1 hour average 40 $\mu\text{g}/\text{m}^3$-annual average 	No evidence of exposure threshold from epidemiological studies
<ul style="list-style-type: none"> No threshold can be determined and all indoor exposures are considered relevant to health Unit risk for lung cancer for PAH mixtures is estimated to be 8.7×10^{-5} per ng/m^3 of B[a]P The corresponding concentrations for lifetime exposure to B[a]P producing excess lifetime cancer risks of 1/10000, 1/100000 are approximately 1.2, 0.12 and 0.012 ng/m^3, respectively. 	B[a]P is taken as a marker of the PAH mixture
<ul style="list-style-type: none"> The excess lifetime risk of death from radon-induced lung cancer (by the age of 75 years) is estimated to be 0.6×10^{-5} per Bq/m^3 for lifelong non-smokers and 15×10^{-5} per Bq/m^3 for current smokers (15-24 cigarettes per day); among ex-smokers, the risk is intermediate, depending on time since smoking cessation. The radon concentrations associated with an excess lifetime risk of 1/100 and 1/1000 are 67 and 6.7 Bq/m^3 for current smokers and 1670 and 167 Bq/m^3 for lifelong non-smokers, respectively. 	WHO guidelines provide a comprehensive approach to the management of health risk related to radon.
<ul style="list-style-type: none"> Unit risk estimate of 4.3×10^{-7} 	

per $\mu\text{g}/\text{m}^3$

- The concentrations of airborne trichloroethylene associated with an excess lifetime cancer risk of 1:10000, 1:100000 are 230, 23 and $2.3 \mu\text{g}/\text{m}^3$, respectively.

0.25 mg/m^3 -annual average

Carcinogenicity is not used as an endpoint as there are no indications that tetrachloroethylene is genotoxic and there is uncertainty about the epidemiological evidence and the relevance to humans of the animal carcinogenicity data

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12. Our attention has also been drawn to Council of Scientific & Industrial Research (CSIR), Guidelines on ventilation of residential and office buildings³ and a documentary film on Indoor Air Quality Concerns and Action⁴.

13. We may now refer to some of the statutory provisions. Noise Pollution (Regulation and Control) Rules, 2000 have been framed under section 6 read with Section 25 of the EP Act, 1986 read Rule 5 of the EP Rules, 1986. ‘Public place’ is defined as follows:-

“public place” means any place to which the public have access, whether as of right or not, and includes auditorium, hotels, public waiting rooms, convention centres, public offices, shopping malls, cinema halls, educational institutions, libraries, open grounds and the like which are visited by general public; and.”

14. Thus, on that pattern indoor air quality can be regulated in respect of public places, as defined with such changes in the definition as may be required. Regulation need not be for domestic building as rightly pointed out by the MoEF&CC. There is no statutory bar to regulation of

³ CSIR Guidelines on ventilation of Residential and office building -

<https://www.niti.gov.in/sites/default/files/2022-01/VentilationGuidelines-and-VU-C-Disinfection-Technology-for-mitigation-ofSARS-CoV-2.pdf>

⁴ https://www.youtube.com/watch?v=kBie_sq7eRc

indoor air quality under the Air Act or the EP Act and the Rules. Need for such regulation is certainly shown by the studies referred to above. Thus, substantial question of environment arises and is answered to the effect that there is need for regulation of indoor air quality at public places. A case is made out for a direction to evolve an appropriate mechanism by the MoEF and CPCB in coordination with other concerned Ministries particularly the Ministry of Urban Affairs and Ministry of Health, with CPCB being nodal agency. Joint Committee may hold its first meeting within one month and after deliberations work out appropriate standards and protocols for indoor air quality for safeguarding public health at Public places under the EP Act, EP Rules or the Air Act within three months. It will be open to the applicants to make their respective representations before the Committee. Based on report of the Committee, MoEF/CPCB may issue appropriate orders under the relevant statutory provisions.

The applications are disposed of.

A copy of this order be forwarded to the MoEF&CC, CPCB, Ministry of Urban Affairs and Ministry of Health, GoI, by e-mail for compliance.

M.A. No. 377/2017 also stands disposed of.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Dinesh Kumar Singh, JM

Prof. A. Senthil Vel, EM

Dr. Vijay Kulkarni, EM

Dr. Afroz Ahmad, EM

April 19, 2022
Original Application No. 143/2016 &
Original Application No. 206/2022
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