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**CENTRAL POLLUTION CONTROL
BOARD—AUDIT REVIEW**

**MINISTRY OF ENVIRONMENT
AND FORESTS**

**PUBLIC ACCOUNTS
COMMITTEE
1993-1994**

TENTH LOK SABHA



**LOK SABHA SECRETARIAT
NEW DELHI**

SIXTY-FIFTH REPORT

PUBLIC ACCOUNTS COMMITTEE (1993-94)

(TENTH LOK SABHA)

CENTRAL POLLUTION CONTROL BOARD—
AUDIT REVIEW

MINISTRY OF ENVIRONMENT AND FORESTS



*Presented to Lok Sabha on 25.4.1994.
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LOK SABHA SECRETARIAT
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**CORRIGENDA TO SIXTY-FIFTH REPORT OF THE PUBLIC
ACCOUNTS COMMITTEE (TENTH LOK SABHA)**

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*Not printed. One cyclostyled copy laid on the Table of the House and 5 copies placed in Parliament Library.

COMPOSITION OF PUBLIC ACCOUNTS COMMITTEE (1993-94)

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Shri Bhagwan Shankar Rawat

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*Ceased to be a Member on completion of her tenure in Rajya Sabha w.e.f. 2 April, 1994.

INTRODUCTION

I, the Chairman of the Public Accounts Committee, as authorised by the Committee, do present on their behalf this Sixty-Fifth Report on Paragraph 4.1 of the Report of the Comptroller & Auditor General of India for the year ended 31 March, 1992 (No. 2 of 1993), Union Government (Scientific Departments) relating to Central Pollution Control Board—Audit Review.

2. The Report of the C&AG of India for the year ended 31 March, 1992 (No. 2 of 1993), Union Government (Scientific Departments) was laid on the Table of the House on 7 May, 1993.

3. In this Report, the Committee have identified certain vital areas relating to pollution control in general, and the functioning of Central Pollution Control Board (CPCB), in particular requiring immediate governmental attention. Briefly, these areas were, incomplete composition of CPCB, delay in making standards developed by CPCB mandatory, shortcomings in the functioning, of monitoring stations and inadequacies in monitoring the quality of water, delay in completing river basin studies and preparation of Action Plans for abatement of river water pollution, failure to achieve the objectives of the project Biological monitoring and ecotoxicological studies of river Yamuna, discontinuance of a project meant for preventing coastal pollution without achieving the results involving expenditure of sizeable magnitude, delay in commissioning of equipments, delay in making air quality stations operative, inadequacies in the enforcement of pollution control measures and lack of adequate co-ordination between CPCB and the State Pollution Control Boards etc. There had also been several financial, administrative and other irregularities in CPCB. The Committee have recommended that the facts stated in this Report should be thoroughly examined and appropriate remedial/corrective measures taken with a view to streamlining the functioning of the Central Pollution Control Board so that it acts not only as an advisory agency but also as an effective promotional body in abatement of pollution for preventing deterioration of the environment.

4. In this report, the Committee have also extensively dealt with the threat caused by pollution to the world famous historical monuments in Agra-Mathura region particularly the Taj Mahal and the related issues. The Committee have noted with grave concern that adequate steps were not taken by Government over the years despite several recommendations made by several Committees to effectively prevent and control pollution and preserve those historical monuments. They have observed that currently the major polluting sources in Agra apart from emission from Mathura Refinery are foundry, rubber factory, engineering industries, chemical and other industries, motor vehicles etc. According to the

Ministry, from the view point of pollution control the best desirable option will be to shift the polluting units from the area. However, since this has not happened, the other alternatives were evolved in the form of a package of measures needed for pollution control in Agra. These included *inter-alia* (i) fiscal incentives and other benefits for shifting of the polluting units; (ii) dedicated/uninterrupted power/gas supply to the industries/commercial activities to discourage the use of DG sets; (iii) Priority for provision of clean fuel (LPG) to the residents of Agra from the Mathura Refinery; (iv) use of battery/CNG operated vehicles within specified area of Agra; and (v) construction of an outer Ring Road at Agra to divert the traffic from the three National Highways. The Committee have agreed with the point of view of taking a package of measures for pollution control as many of these industries were shifted from their original site to the newly constructed Foundry Nagar in Agra in the year 1975 onwards and further shifting of those industries will have grave social and economic consequences including mass unemployment of the people directly or indirectly dependent on these industries. They have desired that in order to check vehicular pollution the electrification of railway tracks in Taj Trapezium area and introduction of local electrical trains service should be considered for expeditious implementation. In their opinion since Mathura Refinery is a major source of pollution, it is essential that immediate measures be taken to minimise pollution from the Refinery by installation of latest equipments and other measures. They have recommended that the package of measures and various other suggestions should be considered or expeditious implementation in a time-bound manner so that the historically important priceless monuments are adequately protected from further pollution.

5. The Committee have also desired that Government should take measures on priority basis for pollution control in other areas which have been identified as environmentally sensitive from the historically important point of view or due to other consideration.

6. The Committee have noted that a writ petition relating to pollution of Taj Mahal is currently pending before the Supreme Court. The Supreme Court in their orders dated 27 August, 1993 and 3 December, 1993 ordered immediate closure of 312 industrial units in Taj Trapezium including 212 Small Scale Factories in Agra for not having installed the necessary pollution control devices. The Committee have been informed that as on 17 February, 1994, 125 units had got installed suitable pollution control devices after the orders of Supreme Court and obtained suspension of the closure orders. In the opinion of the Committee, the fact that several units had demonstrated their willingness to comply with the legal requirements after the intervention of Supreme Court clearly indicates that the pollution control authorities were earlier not very serious in eliciting cooperation from the units and enforcing the pollution control measures in

a persuasive and decisive manner. Expressing their unhappiness over the same, the Committee have recommended that the Ministry should look into this matter for appropriate action plan for the implementation of various measures needed for pollution control throughout the country.

7. Another aspect which engaged the attention of the Committee in the case of Agra was that the aggrieved units had pleaded before the Supreme court that the State Pollution Control Boards did not possess the requisite competence and were not well-equipped to guide them in the installation of necessary pollution control devices. The Committee have regretted that despite it being one of their functions, CPCB woefully failed in providing the requisite technical assistance to the State Board and the Industrial Units. Pointing out that this was an extremely important aspect requiring urgent attention of the Government, the Committee have recommended that while enforcing the pollution control law the authorities concerned should also be in a position to provide sufficient technical advice to the Industrial units about the details of the suitable cost effective equipments which the units could afford to instal. The Government should also formulate and implement an attractive package of fiscal incentives and disincentives to encourage the polluting units to instal pollution control devices.

8. The Audit Para was examined by the Public Accounts Committee at their sittings held on 21 and 22 September, 1993. The Committee considered and finalised this Report at their sitting held on 4 April, 1994. Minutes of the sittings form Part II* of the Report.

9. For facility of reference and convenience, the Observations and Recommendations of the Committee have been printed in thick type in the body of the Report and have also been reproduced in a consolidated form in Appendix IV to the Report.

10. The Committee would like to express their thanks to the officers of the Ministry of Environment and Forests and Central Pollution Control Board for the cooperation extended to them in giving information to the Committee.

11. The Committee also place on record their appreciation of the assistance rendered to them in the matter by the office of the Comptroller and Auditor General of India.

BHAGWAN SHANKAR RAWAT

Chairman,

Public Accounts Committee

NEW DELHI:

11 April, 1994

21 Chaitra, 1916 (Saka)

REPORT

I. POLLUTION CONTROL MEASURES—AN OVERVIEW

The need for prevention and control of environmental pollution had engaged serious attention of the country atleast since the 1970s. In fact, there were already provisions in the existing Acts like The Indian Penal Code, The Criminal Procedure Code, The Factories Act, The Indian Forest Act, The Merchant Shipping Act, etc. for regulation and legal action for some specific environmental issues. However, with the country's emerging environmental scenario with industrialisation in the post independence era, those were found either inadequate or being not effectively applicable to check the degradation of our environment. After the Stockholm Conference on Human Environment in June, 1972 it was considered appropriate by Government to have uniform laws all over the country for broad environmental problems endangering the health and safety of the people as well as of the country's flora and fauna.

2. In pursuance of the above, Water (Prevention & Control of Pollution) Act, 1974 (hereinafter referred to as the Water Act, 1974) was enacted. This Act provided for prevention and control of water pollution and for maintaining or restoring the wholesomeness of water in streams or wells. The Act also institutionalised simultancously the regulatory agencies for controlling water. Another related legislation viz. Water (Prevention & Control of Pollution) Cess Act, 1977 was enacted in order to conserve this vital natural resource and to augment the finance of the regulatory agencies. Thereafter the Air (Prevention & Control of Pollution) Act (hereinafter referred to as the Air Act, 1981) was likewise enacted in the year 1981 to provide for prevention, control and abatement of air pollution. The task of implementation of this legislation was also entrusted to the same regulatory agencies created under the Water Act, 1974. 'Noise' has also been included in the amended Air Act as a pollutant in 1987. Since the Water Act, 1974 and Air Act, 1981 were designed to deal with only water and air pollution problems, in the year 1986. Parliament enacted a comprehensive legislation for environment in its entirety known as the Environment (Protection) Act, 1986. This Act confers Powers on the Central Government to take all necessary measures for the protection and improvement of human environment so far as they relate to the protection and improvement of environment and prevention of hazards to human beings, other living creatures, land, plants and property. All these Act are administered by the property. All these Acts are administered by the Ministry of Environment and Forests.

3. The amendments incorporated in the Constitution in 1976 also *inter alia* made provisions for the protection and improvement of environment. Article 48(A) was inserted which enjoined the State to make endeavour for protection and improvement of environment and for safeguarding the forest and wild life of the country. Similarly, Article 51A(g) stipulates that it shall be the duty of every citizen of India to protect and improve the industrial environment including forests, lakes, rivers and wild life and to have compassion for living creatures.

4. There are other pieces of legislation which handle pollution control like the Hazardous Substances Management Rules, the Public Liability Insurance Act etc. Over the years, several amendments have also been made in the already existing statutes to meet the requirements of the unfolding environmental issues. The Indian Forest Act, The Forest (Conservation) Act, The Factories Act, The Wild Life Protection Act. The Mines & Mineral (Regulation & Development) Act, The Industrial Development & Regulation Act. The Atomic Energy Act, The Motor Vehicles Act among others have undergone such amendments. Those Acts are, however, being implemented by other agencies.

5. Government of India announced their "Policy" statement for Abatement of Pollution" in 1992 expressing the commitment of Government on abatement of pollution for prevention deterioration of the environment. The policy elements seeks to shift emphasis from defining objectives for each problems area towards actual implementation. According to the statement, to achieve the objectives, maximum use will be made of a mix of instruments in the form of legislation and regulation, fiscal incentives, voluntary agreements educational programmes and information campaigns. The Policy Statements further states that emphasis will be on use or regulation and an increase in the development and application of financial incentives.

Audit Paragraph

6. Central Pollution Control Board is the national apex regulatory agency for prevention and control of water and air pollution. It coordinates activities of the State Boards in nation-wide programmes of water and air pollution control. This Report is based on para 4.1 of the report of the C&AG for the year ended 31 March, 1992 (No. 2 of 1993) relating to "Central Pollution Control Board—Audit Review" which is reproduced as Appendix I. The Audit review is based on a test check of activities of the Central Pollution Control Board during the Seventh Five Year Plan (1985—1990) and the Annual Plans for 1990-91 and 1991-92. The various aspects arising out of the examination of the Audit Paragraph by the Committee are dealt with in the succeeding sections.

II. CENTRAL POLLUTION CONTROL BOARD— ORGANISATIONAL SET UP, FUNCTIONS AND POWERS

(a) *Organisational Set up*

7. Parliament enacted in March 1974, The Water Act, 1974 which required the Central Government to constitute a Board to be called "Central Board for the Prevention and Control of Water Pollution" under the then Ministry of Works and Housing, to perform the functions assigned exercising the powers conferred under this Act. The Board was subsequently brought under the Ministry of Environment and Forests in 1981. Consequent upon the enactment of the Air Act, 1981, the Board was entrusted with, additional responsibilities from March, 1981 in regard to air pollution. It was renamed as Central Pollution Control Board (CPCB) in October, 1988 and noise pollution was also brought under the ambit of its activities.

8. CPCB is the national apex body for prevention and control of water and air pollution. It has a full time Chairman, a Member-Secretary, five members representing the Central Government, five members nominated from among the members of the State Boards, three non-officials to represent interests of Agriculture, Fisheries, Industry, Trade or any other interest and two members to represent Companies, Corporations owned, managed or controlled by the Central Government. None of the non-official members nominated by the Central Government in the reconstituted Board belonged to the specified fields; they represented public health, media and technical education.

9. The Committee enquired the reasons for non-inclusion of representatives of agriculture, fisheries, industry and trade. The Secretary, Ministry of Environment and Forests during evidence stated:

"I submit that Industry was represented. Only agriculture and fisheries were not represented.... When we reconstitute the Board we will consider it. Since the provision was for Agriculture, Fisheries, Industry, Trade or any other interest, and it cannot exceed three, we nominated in that way."

10. He, however, admitted that the representative of the Industry was presently not there in the Board.

11. When asked to explain why all the three non-officials were from other fields, the Secretary, Ministry of Environment and Forests deposed:

"The Central Government thinks that other fields also ought to be represented. So, we have taken a view. It could be considered a subjective view or an objective view. First, we had a fisheries expert, but the point is, the Board is wrestling with the kind of problems which are largely industry related. We have the Advisor from the Department of Scientific and Industrial Research. In that sense, we would rather try to enrich the Board with the kind of experts and

feedback from those who get affected by the actions of the Board. The health problem is a primary one and therefore, we have included the expert from the field of health. We have included the media person to get a feedback from outside as to what is happening. But it is difficult to accommodate all the interests. Agriculture is also an important field and effluents are discharged into the agricultural land, but in a sense it is mainly industry related. We have to, at some stage wrestle with the soil problems of the country and we have to tackle that also at that time. At every point, we try to take into account the situation which the Central Pollution Control Board has to tackle and therefore, we might have taken a little advantage of this provision. But I would submit that the composition, in my opinion, was conducive to the interests of the Central Pollution Control Board."

12. From the information furnished to the Committee after evidence it was seen that the Central Pollution Control Board was last constituted on 2 December, 1991. Presently, apart from Chairman, the Board consisted of only six other Members—two each representing Central Government and State Boards and one non-official member nominated by Central Government from the media and another from the Indian Institute of Technology. As regards the vacancies, the Ministry of Environment and Forests in their note stated:

"The other positions have fallen vacant for which the Ministry is taking necessary action."

(b) Functions

13. The functions of CPCB as envisaged in Section 16 of both the Water Act, 1974 and the Air Act, 1981 are as follows:

- (a) advise the Central Government on any matter concerning the prevention and control of water and air pollution;
- (b) co-ordinate the activities of State Boards and resolve disputes among them;
- (c) provide technical assistance and guidance to the State Boards, carry out and sponsor investigations and research relating to problems of water and air pollution and prevention, control of abatement of water and air pollution;
- (d) plan and organise the training of persons engaged or to be engaged in programmes for the prevention control or abatement of water and air pollution;
- (e) organise through mass media a comprehensive programme regarding the prevention and control of water and air pollution;
- (f) collect, compile and publish technical and statistical data relating to water and air pollution and the measure devised for its effective prevention and control and prepare manuals, codes or guides

relating to treatment and disposal of sewage and trade effluents and disseminate information connected therewith;

- (g) lay down, modify or annual in consultation with the State Government concerned, the standard for a stream or well; and
 - (h) plan and cause to be executed a nation-wide programme for the prevention, control or abatement of water and air pollution.
- (c) Powers of CPCB

14. Under Section 16(2) (b) of Water Act, 1974 CPCB is required to co-ordinate the activities of the State Boards and resolve disputes among them. The Act, however, does not confer any power on the Central Board to oversee functioning of the State Boards. Cases of non-compliance of State Boards with the direction of the Central Board are required to be referred to the Ministry. When asked to explain how could CPCB co-ordinate activities of State Boards and resolve disputes when it had no power to oversee the functioning of State Board, the Ministry of Environment and Forests, in a note stated:

“Section 18(1) (b) of the Water Act, 1974 provides that the State Board is bound by the direction given by the Central Board. Sub-Section (ii) of Section 18 of Water Act, 1974 also empowers the Central Board, as and when needed.”

15. The Committee pointed out that Section 18(1) (b) of the Water Act, 1974 is only an enabling provision to intervene only after referring the matter to the Ministry and asked whether the Central Board could give *suo moto* directions to the State Boards. The Ministry of Environment and Forests in a note furnished after evidence stated:

“Section 18 of the Water Act deals with power to give directions. Clause (a) of Sub-Section 1 of Section 18 of the Water Act provides that in performance of its functions under this Act, the Central Board shall be bound by such directions in writing as the Central Government may give to it. Therefore, the Central Board is bound to comply with the directions of the Central Govt.

Further Clause (b) of Sub-Section 1 of Section 18 of the Water Act provides that every State Board shall be bound by such direction in writing as the Central Board or the State Government give to it. Therefore, the State Boards are bound to comply with the directions of the Central Board as well as the direction of the State Government. However, proviso to sub-section 1 of Section 18 of the Water Act makes it clear that where the directions given by the State Government is inconsistent with the direction given by the Central Board, the matter shall be referred to the Central Government for its decision and actions be taken accordingly.

Clause (b) of Sub-Section 1 of Section 18 of the Water Act authorises the Central Board with power to give *sub-moto* directions to the State Boards.

Sub-Section 2 of Section 18 of the Water Act, however, does not give the power to the Central Board to take over the functions of the State Board, for default in compliance with its directions by the State Board, till such time the Central Government issues necessary order in this regard. The order of the Central Government is a pre-condition for taking over the function of the State Board by the Central Board."

16. According to Audit, standards relating to sewage and trade effluents are to be laid down by the State Boards and are not required to be vetted by CPCB. The latter's views are not also sought. When asked why CPCB's expertise was not availed of in these matters, the Ministry of Environment and Forests, in a note stated:

"The standards relating to the sewage and trade effluents as per provisions of the Water Act can be laid down by the concerned State Boards provided these effluents are let out into the streams which are flowing within the State only. For the inter-state streams, the standards are to be laid down in consultation with the Central Board. It was decided in the 3rd Conference of Chairmen and Member Secretaries that the Central Board will develop standards for sewage and trade effluents and these will be adopted by the State Boards. Accordingly, the Central Board has been involved in developing the standards for various categories of industries and these have been referred to as Minimal National Standards. The State Boards have adopted these standards and as and where required made these standards more stringent."

17. When the Committee pointed out that it gave powers to State Boards which are not concurrent with the Central Board and asked to react, the Secretary, Ministry of Environment and Forests stated during evidence:

"I have just now read out. It is not only for sewage and trade effluents but also for quality of receiving waters other than that of an inter-state stream, they can also notify. That is where, may be legally some overlap may be there. I have to consult on that. In fact, there have been a number of provisions in the Water Act. We had asked the Indian Law Institute and the Centre for Environmental law to examine this provision and advise us on how to harmonise these things. This problem exists even in other countries. United States is also doing this exercise that is, trying to harmonise legislation. I am not a legal pandit. I may have to admit that there may be some overlap or I may be wrong in admitting that. But, as I see, it is clear that the State Board can also notify

standards which can be more stringent in respect of quality of receiving waters if it is not an inter State stream. I will have to check up the point as to whether they have limited only to these cases or not."

18. The Committee pointed out that presently the Ministry notifies the standards in consultation with the State Government and though CPCB is the apex body it has not been vested with the required authority. They desired to know whether there was any specific reasons as to why the Ministry should notify these standards. The Ministry of Environment and Forests, in a note furnished after evidence stated:—

"Under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981, CPCB has been assigned the statutory responsibility of laying down the ambient water and air quality standards. Accordingly, CPCB has laid down the ambient water and air quality standards. However, in respect of industry specific trade effluents and emissions, standards are notified by the Ministry under the Environment (Protection) Act, 1986. These standards are so notified based on inputs of CPCB and other sources.

The minimal national standards are notified after taking into consideration a number of factors relating to available technologies, cost of introducing better technologies, relative pollution with reference to geographic and climatic conditions prevailing in our country, impact on health employment etc. some of these are socio-economic factors unrelated to technical data. The Central Pollution Control Board is a technical body entrusted with the task of coordinating the nation-wide efforts of pollution control and to advise the Government on technical matters. The Central Pollution Control Board by the very nature of its constitution is not equipped to arrive at final decisions where economic and social issues are concerned. Even in the developed countries, environmental decisions are taken not purely on technical standards but also on the basis of their implementability in the face of social and cultural factors. In a developing country it is all the more important that decisions are arrived at on the wider basis of different dimensions of the country's national needs while keeping in view consideration of human health etc. and the Ministry is better qualified to take these decisions than the CPCB. Therefore, the final decision relating to the standards has to rest with the Ministry."

19. According to the Audit para, Central Pollution Control Board is not adequately empowered to discharge its functions effectively despite being the apex body at the national level for pollution control. The Committee

enquired the steps taken or proposed to be taken to adequately empower CPCB to discharge its functions effectively. In reply, the Ministry of Environment and Forests, in post evidence information stated:—

“The responsibility of regulatory function is discharged through the advisory role. As far as the promotional activities are concerned, CPCB is already performing its role and no additional powers are required for this purpose.

The federal structure of the Indian policy requires that autonomy in matters of regional and local importance is left to the State Governments. The subject of environment does not figure in the 7th Schedule of the Constitution, though land and water are specifically mentioned in the State list. Air has not been mentioned as a subject probably at the time of framing of the Constitution. Environmental enactments have been resorted to under either Article 252 or 253 of the Constitution. Under these circumstances, it may not be appropriate to centralise more powers in the hands of the CPCB.”

20. To a query as to which agency was authorised to oversee the functioning of State Board, the Ministry of Environment and Forests, in their post evidence information stated:—

“As per the provisions of the Water and Air Acts, the State Boards are directly under the charge of the respective State Governments. CPCB has no powers to oversee the functioning of the State Boards. However, under Section 18(1)(B), CPCB can issue directions.”

III. MANPOWER

21. It has been pointed out by Audit that as on 31 March, 1992, CPCB had 83 scientific, 138 technical and 172 ministerial staff against sanctioned strength of 94, 186 and 205 respectively. According to Audit there were no norms for ratio between scientific and non scientific staff; 21 per cent of the sanctioned strength of the scientific/technical posts remained vacant though CPCB themselves were competent for recruitment of such personnel. The Committee enquired about the reasons for the same. The Ministry of Environment & Forests in a note stated:—

“A ratio of 60:40 is maintained between the technical/scientific staff and ministerial staff. In the reorganization plan of CPCB, which was approved by MDEF certain changes in the recruitment of personnel was sought and accordingly the recruitment rules are revised. The vacant positions could not be filled up till the recruitment rules are approved and notified. Necessary actions have been taken for approval and notification of the recruitment rules based on which the recruitment will be made.”

22. The Secretary, Ministry of Environment and Forests admitted during evidence that there was a short fall in manpower. Elaborating on the subject, the Chairman, CPCB stated:—

“In 1987, the CPCB had undergone a reorganisation plan and subsequently, the posts were also designated in different categories and the recruitment rules were to be framed. According to the Act, the recruitment rules are to be formulated by CPCB and then it has to be approved by the Government including the Deptt. of Personnel and Training.”

23. When asked how much time they required to finalise the recruitment rules, the Secretary, Ministry of Environment & Forests deposed:—

“We will be finalising the recruitment rules soon, we have started consulting the Deptt. of Personnel and it has almost come in a final shape. It is desirable to have new recruitment rules.”

24. The Committee desired to know the reasons for the recruitment rules not still having been finalised though the reorganisation plan of CPCB had been approved by the Ministry as far back in 1987. The Ministry of Environment and Forests, in a note furnished after evidence stated:—

“In the light of the reorganisation plan which was approved by the MDEF, the tasks of the CPCB were redefined and goals were set. This required creation of various new categories of posts and revision/formulation of new recruitment rules. The recruitment rules have since been finalised by the Board and these have been vetted by the Ministry. The recruitment rules are awaiting clearance of DOPT.”

IV. DEVELOPMENT OF STANDARDS

Evolution of minimal standards

25. As per the Water Act, 1974 and the Air Act, 1981, CPCB was required to lay down standards for quality of water and air. Quality of pollutants discharged were to be regulated by the State Boards with reference to the standards developed. According to Audit CPCB had not yet evolved any mandatory standards for water and air quality. It directed its efforts towards development of Minimal National Standards for trade effluents and sewage discharged which came under the purview of the State Boards and not CPCB. In this context the Committee sought to look into the progress made by CPCB in the development and enforcement of the standards.

26. As regards development of standards, the Ministry of Environment and Forests in a note stated that CPCB had so far formulated and laid down Minimal National Standards (MINAS) for 32 categories of industries (Liquid Effluents Standards). Similarly, CPCB has laid down emission

regulations in respect of 29 categories of industries. These have been adopted by the State Boards. Development of standards were stated to be in an advanced stage of finalisation in respect of 18 items and expected to be finalised by 1994. According to the Ministry, CPCB has also evolved exhaust emission standards from automobiles which have been notified in the Motor Vehicles Act as amended in 1985 for enforcement by respective State Transport Authorities.

27. Dealing with the standards formulated by CPCB, the Secretary, Ministry of Environment and Forests stated during evidence:—

“We have identified 17 grossly polluting industries which create either air quality or water quality problems.....Standards have been notified by the State Pollution Control Boards and they have taken into account the advice of the Central Pollution Control Board. Some standards were discussed between two and they were notified in the Environment (Protection) Act.”

28. To a question of the Committee as to who issued the notification, the Ministry in a note replied that under the Environment (Protection) Act, 1986 the Ministry notify the standards in the official Gazette.

29. In reply to a related question, the Secretary, Ministry of Environment and Forests stated in evidence that Minimal National Standards are developed by the CPCB but the State Boards though have no powers to dilute these standards, can make these standards more stringent depending upon local conditions.

30. Elaborating the point, the Ministry, in a note furnished subsequent to evidence stated:—

“In this context it may be mentioned that under the Water and Air Acts, it is not legally binding on the State Boards to follow the MINAS but in notification of May 19, 1993 issued by the Ministry, it has been made legally binding on the State Boards. The State Boards have been empowered to make the standards more stringent wherever situation so demands but they are not permitted to relax the standards.”

31. The Committee desired to know as to why the powers to notify the standards laid down by CPCB cannot be vested with it as the apex body at the national level for pollution control. The Ministry of Environment and Forests in a note stated:—

“Under the Environment (Protection) Act, 1986, the Ministry notifies the standards in the official Gazette. Standards related to water and air based on the standards formulated by CPCB. The powers to notify the standards in respect of water and air quality can be vested with CPCB by virtue of the responsibility to lay down standards under relevant Sections of the Water and Air Acts.”

V. WATER POLLUTION

(a) *Water Quality Monitoring*

32. By the end of Sixth Plan, CPCB had established 120 water quality monitoring stations which monitored quality of water every month with reference to 19 significant parameters subsequently enlarged to twenty two. The monitoring data are sent to CPCB and the State Boards are paid at a prescribed rate for each sample depending on the number of parameters. During Seventh Plan Rs.123.16 lakhs had been spent and subsequently during 1990-92 under non-plan Rs. 90.58 lakhs was incurred on operation of the stations. The audit para reveals that out of 480 Water Quality Monitoring stations established upto March 1992, 42 could not supply any data and remained non-operational for periods ranging from one to five years. According to Audit, the State Boards were not responsive to the request either to activate or to relocate these stations indicating lack of co-ordination between CPCB and the State Boards. Audit also has pointed out that CPCB did not exercise its powers to give directions under Section 18 of the Water Act, 1974. In response to a question of the Committee in this regard, the Ministry of Environment the Forests in a note furnished to the Committee stated that as on 30 June, 1993, there were 6 non-functional stations out of total 480 sanctioned under Water Quality (WQ) stations in the National Water Quality Network. Those stations were non-functional mainly due to the delay in identifying alternate sites, some of which were sanctioned even three years back.

33. The Global Environment Monitoring Scheme (GEMS) under World Health Organisation has a network of surface water quality stations all over the world, of which India is also a participating country with CPCB as the nodal coordinating agency. Each country is required to send water quality data on annual basis to WHO collaborating Centre in Canada, which is the central data depository. According to audit paragraph CPCB sent the first report relating to the period 1985 to 1987 only in 1990. The report beyond this period had not been prepared by November, 1992. The Committee desired to know the reasons for non-submission of annual reports beyond 1987 to GEMS together with the present status of this agency. The Ministry of Environment and Forests, in a note stated:—

“As on February, 1993, CPCB has sent all data pertaining to the GEMS water quality programme till December 31, 1991. The Canada Centre has also sent an acknowledgement of receipt of the data. The data for 1992 are being compiled for transmission.”

34. In a note furnished after evidence, the Ministry stated that the data for 1992 could not be sent due to delay in receipt of data from Tamilnadu and Karnataka.

35. When asked about the efforts being made to ensure timely submission to data on an annual basis, the Ministry of Environment & Forests in a note furnished after evidence stated:—

“To ensure that GEMS data for water quality are sent on time CPCB is keeping an in-house target of mid year as the cut-off date for sending data of the previous calendar year. The State Boards have accordingly been given the time target so that the schedule is strictly adhered to.”

(b) Biological Monitoring of River Yamuna

36. A Memorandum of Understanding (MOU) on Environmental Cooperation was signed in January, 1988 between the Government of India and the Government of Netherlands under which a project proposal entitled 'Biological monitoring and ecotoxicological studies of River Yamuna' was prepared for carrying out a biological parameters to valuate the ecological quality of fresh water river in India. As per MOU, contribution of the Indian Government would be Rs. 43.28 lakhs and the Netherlands Government was to provide Rs. 950.00 lakhs in the form of expert assistance, equipment and consultancy etc. for the total duration of the project. River Yamuna was identified for such study because of its proximity with the office and the laboratory of CPCB and because it showed a large variation of pollution over a stretch of approximately 250 Kms. between a point upstream of Delhi to a point downstream of Agra. The primary objective of the project was to develop a biomonitoring methodology to assess pollution load and to generate biological and chemical data on ecological systems in order to properly manage the river. The work was to be carried out in two phases jointly by CPCB and Industrial Toxicological Research Centre (ITRC), Lucknow. Programme for the first year was to develop, adopt and test methodology which would give information for constructing an adequate scheme for the second phase for definite data generation.

37. Mid term evaluation reports submitted by a team of the Government of Netherlands in February and November, 1990 revealed that a substantial amount of expenditure in the first year had been incurred on manpower, purchase of vehicles, computer, library books etc. It further disclosed that the work plan was not completely carried out as projected and that CPCB had failed in eliciting involvement of ITRC, the contractual obligations of ITRC was not well defined and that the project was carried out without setting the strategy and was reduced to transfer of technology relevant to developed countries without taking into account the ground realities. The mid-term evaluation conducted in November, 1990 also pointed out that the main objective of creating early warning system and bioaccumulation monitoring had not been covered. The Committee desired to know the achievements with reference to targets and present status of the project, the Ministry of Environment & Forests in their note stated as follows:—

“CPCB has carried out a pilot study on the river Yamuna for three years under the Indo-Dutch collaboration. The main objective of this

study was to formulate and test technical and strategic methods for water quality evaluations. Based on the study, methodologies for bio-monitoring have been developed in terms of 8 different indices. These are, Bacterial pollution index, Nutrient Pollution index, Organic Pollution index, Industrial Pollution index, Pesticide Pollution index, Benthic Seprobity index, Biological diversity index, Production Respiration index. The methodologies for biomonitoring are now to be tried out in other river systems. The river Tungbhadra in Karnataka and River Chaliyar in Kerala have been selected for work in this regard during 1993-94. On the basis of validation of the methodologies, in selected areas, these will be used for bio-monitoring of river water quality in different parts of the country.”

38. As regards the failure of CPCB to secure full involvement of ITRC, the Ministry of Environment & Forests in a note furnished after evidence stated:—

“ITRC participated in the project during the initial period and it provided three reports which were made use of in development of the methodology. The fact that ITRC involvement for the entire period was not available has not caused any adverse effect on the progress of the project.”

(c) Installation of automatic water quality monitoring and sampling stations

39. Under-Indo-Dutch bilateral programme it was also decided to install two water quality monitoring and sampling stations on river Yamuna, in Delhi at Wazirabad (upstream) and Okhla (downstream) barrage. The principal aim and long term objective of the project was to obtain a continuous insight into the basic parameters of the intake of water from Yamuna river for drinking purposes. The project was to be carried out over a period of two years, after which final evaluation was to be conducted. The stations were received and installed during August, 1991. Out of the two Water Quality Monitoring stations at Wazirabad and Okhla, the station at Wazirabad functioned satisfactorily, the extremely bad quality of water (sewage) was destructive of some of the measuring electrodes of the station at Okhla besides being a health hazard to the operators. This station, therefore had to be closed. Under the circumstances the Okhla station was shifted to Haiderpur (upstream) water works on experimental basis to monitor the water quality at intake point which was also by Wazirabad station. According to Audit, apart from inadequate pre-commissioning survey of the site, delay in programme, non-monitoring of the pollution generated by the city, it also resulted in infructuous expenditure of Rs. 1.88 lakhs.

40. When asked whether the pollution load generated by the city would remain unmonitored as both the stations were situated upstream,

the Ministry of Environment and Forests, have in a post-evidence note stated as under:—

“The water quality at Okhla was found unfit for operating the Automatic Water Quality Monitoring Station that was made available under the Indo-Dutch bilateral programme. But this has not caused any lapse in monitoring of the pollution load generated by the city because of the fact that pollution load is regularly monitored through manual method. In this context, it is submitted that the automatic water quality monitoring station have been installed on experimental basis to ascertain their suitability under Indian conditions and to explore the possibility as to whether these could be used in place of manual methods in some areas.”

(d) Automatic Water Quality Monitoring Stations on Ganga

41. To monitor water quality of river Ganga continuously—Automatic Water Quality Monitoring Stations (AWQMS) on the river were proposed in 1987 in a research project of CPCB. The stations were to be installed at Kannauj (one), Kanpur (two), Allahabd (three), Varanasi (one), Patna (one) and Calcutta (one) which were identified as hot spots. In March, 1990 Ganga Project Directorate provided Rs. 50.46 lakhs for the programme including installation of the proposed automatic monitoring stations. Besides the expenditure of Rs. 38.16 lakhs incurred on automatic monitoring stations, Rs. 28.73 lakhs were spent on procurement, fabrication and commissioning of floating platform for use of the system. Four platforms were supplied and erected and the fifth one was lying in the manufactures premises for want of the system.

42. The Committee wanted to know the extent of expenditure of Rs. 66.89 lakhs on the system made use of so far, the Ministry of Environment and Forests stated:—

“In this project, an effort was made to build up indigenous capability for setting up of automatic monitoring system. Out of the 9 stations as proposed, 5 stations have been commissioned as on date. The monitoring systems are equipped with instrumentation facilities for determination of some important parameters such as PH, temperature, turbidity, dissolved oxygen and conductivity. An expenditure of Rs. 59.68 lakhs so far incurred on procurement, commissioning of 5 automatic monitoring stations, which have been installed on the river Ganga at the following sites: (i) Shuklaganj at Kanpur, (ii) Bakar, (iii) Kannauj, (iv) Patna, (v) Varanasi. These are all operational. The data collected from these stations is used in developing models for river water quality profile. These stations also help assessing the impact of sewage treatment plant on river water quality. It acts as early warning signal of sudden changes in the concentration of pollutants upstream.”

43. When enquired of the position about the procurement and commissioning of the remaining four stations, the Ministry of Environment and Forests, in a post evidence note stated as follows:—

“Out of remaining four stations, as desired by CPD on behalf of which the project is being carried out, only one station in addition to the five stations that have already been commissioned is to be set up. The sixth station will be commissioned shortly for which the floating platform is ready. Based on monitoring performance of these stations, decision will be taken regarding suitability and commissioning of additional stations.”

(e) River Basin Studies

44. The objective of the River Basin Studies was to ascertain quality of a river consistent with human activities in the river basin and to inter-relate the activities and quality so as to identify the cause of pollution qualitatively and quantitatively and prepare an action plan to control pollution and maintain or restore the wholesomeness of river.

45. The studies included classification and zoning of rivers at various reaches and ascertaining pollution potential in the river basin. It also consisted of both wet and dry study. The wet study involved monitoring of river water quality for specific period and the dry study involved field study on the basin activities. The Studies were carried out through the State Boards with CPCB's financial assistance. With the help of the data generated, basin and sub-basin reports were prepared by CPCB.

46. For these studies, CPCB had identified 15 major river basins of the country covering over 20,000 sq kms of catchment area. Out of the 15 studies, three were completed and printed during the Seventh Plan period and three had been published before that. The remaining nine were to be completed and published by November, 1988 to December, 1991. However, only three studies have been completed and are yet to be published, report in respect of one study is under preparation, two studies are under progress and action is yet to be initiated in respect of the remaining three studies. Revised target dates for completion and publication have not been set and expenditure incurred on these studies not made available.

47. When asked to indicate the position relating to all the 15 studies, the Ministry of Environment and Forests, in their advance information, stated:—

“Out of 14 major rivers in respect of which comprehensive river basin studies have been undertaken by CPCB in consultation with State Pollution Control Boards and other agencies, so far, studies have been completed and reports prepared for five rivers. These are:

1. (a) Ganga (Main), (b) Ganga (Yamuna sub-basin), 2. Sabarmati,
3. Subarnarekha, 4. Krishna, 5. Brahmani Baitarani.

The rivers in respect of which studies have been completed and manuscripts of reports have been prepared include Narmada, Cauvery, Godavari, Tapti and Indus (covering Punjab and H.P.). These reports are to be published during the current year.

Out of 14 major rivers only for three rivers studies have not yet been completed. These are:

1. Brahmaputra
2. Indus (J&K Portion)
3. Pennar"

48. On the basis of river basin studies, Action Plans for abatement of river water pollution were required to be prepared. In the annual action plan of CPCB for 1990-91, preparation of Action Plans for five major rivers was to be taken up. It has been pointed out by Audit that out of five Action Plans, only one, *i.e.* Yamuna Action Plan has been prepared. On being enquired about the latest position, the Ministry in a note stated that the action plans for Yamuna, Ganga and Krishna have been completed and that the preparation of action plans for the Sabarmati and Subarnarckha will be completed in the financial year 1994-95.

(f) Monitoring of Indian Coastal Water

49. The Audit para reveals that a project named Monitoring of Indian Coastal Waters was approved by the Ministry and Sanction for Rs. 108 lakhs was conveyed in February, 1987 for prevention of coastal pollution. The proposal was to establish a monitoring network covering the critical stretches as already identified in the coastal survey conducted by CPCB. The project was designed for a period of three and a half years initially. Under this project, a network of 173 inland, coastal, off-shore and high-sea monitoring stations were to be established and monitored by the respective State Boards. Against the sanctioned amount of Rs. 108 lakhs, the Ministry released Rs. 115 lakhs upto March, 1992 without modifying the original sanction issued in 1987. Further out of Rs. 115 lakhs received, CPCB had distributed only a sum of Rs. 88.36 lakhs to the executing agencies. The project which was initially to be completed by 1990 had been extended till March, 1992 reportedly due to bad weather conditions, high cost on hiring of vessels and inadequate funds etc. The Ministry decided not to continue with the programme after April, 1992 due to financial constraints. According to Audit, the project thus failed to bear any result even after six years.

50. The Committee desired to know whether any mid term appraisal of the project was done. In reply thereto the Ministry stated in a note as under:—

"The Central Pollution Control Board organised two National Workshops (February, 1989 and March, 1990) in which an appraisal

of the work done under the project was made. The workshops were attended by representatives of concerned agencies and also a number of experts from all over the country. The workshops discussed the methods and findings. The workshops also supported the work done. CPCB has since prepared a summary report entitled "Monitoring of Indian Coastal Waters". Besides, CPCB has also published the "Criteria for Classification and Zoning of Coastal Waters" after indepth discussion during the workshops."

51. When asked the extent of monitoring work remained to be completed when the project was discontinued after April, 1992, the Ministry of Environment & Forests in a note furnished after evidence stated:—

"The Tamil Nadu Pollution Control Board could not complete the number of rounds of monitoring. It completed five rounds of monitoring while other executing agencies completed 15-17 rounds of monitoring when the project was discontinued in April, 1992."

52. The Committee enquired about the total cost of the project and the additional expenditure required to complete the balance monitoring work. The Ministry, in a note furnished subsequent to evidence stated as under:—

"A total of Rs. 1,13,80,456 was spent for the execution of the project and about Rs. 32 lakhs is required to complete the remaining monitoring work along the Tamil Nadu Coast."

53. Enquired whether it was still proposed to undertake the balance monitoring, the Ministry in a note furnished after evidence replied in negative and added that at this stage it will not serve any useful purpose.

54. The Audit para reveals that the Ministry stated in November, 1992 that CPCB had developed a software for analysis of coastal data and the data were under analysis for preparation of report on coastal water quality. The Committee enquired that since the data collected from State Boards on Coastal Waters was inadequate how would the software prepared by CPCB be of any help in preparation of a report on coastal water quality, the Ministry of Environment and Forests stated in a note as under:—

"The software prepared by CPCB has been useful for analysis of data collected in some stretches of the coast. However, in some stretches, data could not be collected due to lack of proper sea going vessels, bad weather conditions and ethnic problems (in case of Tamil Nadu Coast)"

55. When pointed out to specify the concrete benefits derived from the project for monitoring of Indian Coastal Water which continued for a period of six years during which an expenditure of Rs. 115 lakhs was

incurred the Ministry of Environment and Forests, in a post evidence note stated:—

“The concrete benefits that have been derived from the project include:

- (a) Advent to an unattended domain of the marine environment which hitherto remained beyond any quantitative measurements from pollution view point.
- (b) Development of expertise in marine environmental studies/ investigations through extensive field works and a number of training programmes and laboratory inter-calibration exercises.
- (c) Establishment of basic infrastructure, including procurement of sampling and analytical equipment in a number of Institutions in the country which were not existing earlier.”

(g) Coastal Ocean Monitoring and Prediction System (COMPAS)

56. According to Audit para, the Department of Ocean Development (DOD) started a project entitled ‘Survey of Environmental Pollution in Seas around India’, in 1986-87 which was mainly aimed at seasonal monitoring/measurement of Pollution in marine coastal areas upto 5 kms. off-shore along the country’s entire coastline. Based on a project proposal titled ‘Monitoring of Marine Pollution in Territorial waters of India’ (along the East Coast) in March, 1988, DOD sanctioned the project. The main objectives of the project were to initiate and conduct a systematic monitoring of the territorial waters of the East Coast beyond 5 kms. off-shore, after establishing a permanent marine pollution monitoring station with adequate capabilities of field and laboratory works. The Zonal Office, CPCB, Calcutta was one of the units among the eleven units identified for undertaking the work on Marine Pollution Monitoring and Modelling of pathway and flexes of exotic chemical elements into sediments, biological systems and the seas. The Steering Committees of DOD renewed and modified the project in June, 1990 and redefined the length and width of study stretches. The width of the stretch was also increased to 5 kms. off-shore instead of that from 5 kms. to 22.5 kms. off-shore and renamed it as “Coastal Monitoring and Prediction System (COMPAS)”. Out of 29 laboratory equipment, Zonal Office, CPCB, Calcutta could procure only one equipment ‘Backman Liquid Scintillation Counter’ costing Rs. 5.36 lakhs upto April, 1991 which was still awaiting commissioning due to non-availability of certificate from Bhabha Atomic Research Centre (BARC).

57. The Committee enquired as to when was this equipment commissioned, the Ministry of Environment and Forests in a note furnished after evidence stated:—

“The imported ‘Backman Liquid Scintillation Counter’ costing Rs. 5.36 lakhs was received in Calcutta on April 24, 1991. The

instrument was commissioned in August, 1993 after necessary training to an operator and obtaining necessary certificate from Bhabha Atomic Research Centre (BARC)".

58. When asked the position about the procurement and commissioning of the remaining 28 items of equipment, the Ministry of Environment and Forests stated in a subsequent note:—

"All of the remaining items except only the 'Total Organic Carbon (TOC)' Analyser have been imported".

VI. ENFORCEMENT OF POLLUTION CONTROL IN GROSSLY POLLUTION INDUSTRIES

59. The Committee enquired about the concrete steps taken in pursuance of the standards already developed to control the magnitude of pollution so as to bring it to the level of minimal standards developed. The Ministry in a post evidence note stated:—

"According to the Gazette notification issued by the Government of India on January 16, 1991, all polluting units in the country were required to comply with the prescribed standards by December 31, 1991... Thrust was given on 17 categories of highly polluting industries. CPCB had been coordinating with all these State Boards to ensure compliance of the standards and steps taken by the concerned industries for setting up the pollution control devices by the targetted date. During the drive certain industries have been identified as wilful defaulters. In the meantime keeping in view the steps taken the several industries and technical constraints the time limit was extended depending upon the date of the establishment of the industry. The cut off date in such cases was 31st December, 1992 in respect of those industries which had come after May 16, 1981 and 31 December, 1993 in respect of those who were established on or before May 16, 1981."

60. When asked about the mechanism for effecting monitoring the Ministry in a note furnished after evidence stated as under:—

"The progress of compliance by the industries as per the given time bound programme is being followed up vigorously through the concerned State Pollution Control Boards and the status is being regularly monitored by the Central Government through the meetings with the State Environment Departments, Central and State Pollution Control Boards after every six months. The status of compliance in the public sector units is also being regularly reviewed and monitored through the meetings being held with the concerned Central Ministries."

61. The Committee enquired about the compliance of the pollution control requirements by the various units. The Ministry in a note furnished after evidence stated as follows:—

“As a result of the concrete steps taken by the Government and systematic follow up of the given time bound programme for compliance, so far 1003 out of the 1541 units in the large and medium sector have provided the requisite pollution control equipments to comply with the standards and others are in the process of installing the same. State Pollution Control Boards have been directed to monitor regularly the progress in these units and also take strict action against the defaulting units.”

62. The Committee wanted to know whether while fixing the standards CPCB also took into consideration the feasibility aspect also. The Secretary, Ministry of Environment and Forests stated in evidence:—

“Primarily it has to be environment and health is not the only parameter.....We are in the first rung and we try to fix standards taking into consideration the human health as well as availability of technology. Very quickly we are trying to upgrade standards to see that we keep close to human health problems.”

63. The Committee in this context drew attention of the representatives of the Ministry and Board during evidence to the observation of the Supreme Court in a case related to the pollution in Agra-Mathura region discussed in details, subsequently that the Board had not looked into the grievances of the units that the Boards was not in a position to advise the industry as to which type of air pollution control devices was to be given. The Secretary, Ministry of Environment and Forests stated that though the State Board did not possess it, the Central Board was in a position to provide the necessary advice. According to him, the units could approach the Regional Officer of the Board in its respective State for the purpose.

64. On being asked whether the financial institutions offered loans to the units at concessional rates for the purpose of installing pollution control devices, the Secretary, Ministry of Environment and Forests stated that it did not carry any special concession.

VII. AIR POLLUTION

National Ambient Air Quality Monitoring (NAAQM) Stations

65. To improve quality of air and to prevent, control or abate air pollution in the country, knowledge of Air quality status was a pre-requisite. In 1984, National Ambient Air Quality Monitoring (NAAQM) was initiated by CPCB which identified three parameters for monitoring namely Sulphur Di-oxide, Nitrogen Dioxide and Suspended Particulate Matter. For establishment of NAAQM Stations, CPCB had incurred an expenditure of Rs. 261.63 lakhs during the Seventh Plan and Rs.176.45 lakhs during the years 1990-91 and 1991-92 out of its annual plans. By March, 1992, CPCB had established 290 stations in the country. Out of these only 217 were in operation and sending data regularly and remaining 73 stations were not in operation even after one to eight years of their

setting up. According to Audit, that a sum of Rs. 27.30 lakhs released to the State Boards for the non-working stations remained unfruitful.

66. The Committee desired to know the present status of 73 non-operating stations. The Ministry of Environment and Forests, in a note, stated:—

“As of now, 50 stations are not in operation, for the non-operational stations, the State Boards have been asked to expedite the operation of these stations or refund the grants. In certain cases, the State Boards have been asked to select alternate sites because of difficulties in operation of the stations in the sites earlier selected. In response, some State Boards have informed that they are taking necessary action while others have suggested that universities/research institutions may be involved in monitoring activities.”

67. While maintaining that the process of establishment of monitoring stations was of inter-disciplinary nature involving identification of town/cities, visit by scientist/Engineers of CPCB procurement of instruments, engagement of personnel, training of staff, analysis of data etc., the Ministry in their note also stated:—

“It has been seen that considerable delays are caused particularly in respect of procurement of instruments. Engagement of trained personnel on daily wage basis for a longer duration often creates administrative problems because of restrictions on the appointment of staff. Non-availability of public buildings with infrastructure facility like water supply and electricity at the monitoring sites is yet another constraint.”

68. The Committee wanted to know as to when were the 50 non-operational stations procured and how much expenditure was incurred thereon. The Ministry of Environment & Forests in a post evidence note stated as follows:—

“Grants towards procurement of instruments for 50 stations was given during 1991-92 and the total expenditure was of the order of Rs. 35 lakhs.”

69. Regarding the specific reasons for non-operation of the station and the steps being taken for ensuring easily operation of these stations, the Ministry have informed the Committee in a note furnished after evidence as under:—

“Delays in procurement of instruments, non-availability of trained persons on daily wages, access to public buildings, electricity connections have been the major reasons for the delay in commissioning of the stations. To ensure that the stations are put into operation, the State Boards have been asked to take necessary action in terms of all these facilities and in the event of their

inability to refund the grants or select an alternate site. The facilities available with R&D/Academic institutions are proposed to be utilised in cases where the State Boards are unable to operate such stations.”

70. The Audit Para reveals that in February, 1992 it was decided that air monitoring stations which were sanctioned prior to March, 1990 but could not be started till that date need not be pursued and the amount paid to State Boards be refunded to CPCB. When asked about the steps taken to get refund of Rs.27.30 lakhs from concerned State Boards in respect of non-operational stations, the Ministry of Environment and forests have, in a note furnished after evidence stated as under:—

“In response to CPCB demand for refund, Punjab State Board has refunded the money while other State Boards did not. The issue was discussed in a Conference of the Chairmen/Member Secretaries of Pollution Control Boards. It was explained that some State Boards are not in a position to refund the money because of the fact that they have already spent the money for purchase of equipment for the setting up of the stations. In view of this, the State Boards have been asked to select alternative sites for setting up of the stations. The State Boards are now in the process of identifying alternative sites for the setting of the NAAQM stations.”

71. When the Committee pointed out that since the promulgation of the Air Act, CPCB could only initiate preliminary work on Air quality improvement and that action towards prevention, control and abatement of air pollution had not been initiated, the Ministry of Environment and Forests, in a post evidence information, Stated as under:-

“CPCB, after detailed exercise, has laid down the ambient Air quality standards in respect of SPM, SO₂, NO₂ and CO for industrial, commercial cum residential areas and sensitive areas. These standards have been adopted by all the State Boards. CPCB has also identified the emission standards of air pollution which includes industries and the vehicles. For controlling the industrial emissions, the emission standards have been development for major air polluting industries. These standards have been adopted by the State Boards and these are being implemented by them. For rigorous implementation of the emission standards, task forces have been set up in respect of four major industry categories like Thermal Power Stations, Cement Plants, Fertilizers and Oil Refineries and Steel Plants.

In respect of the vehicular pollution emission, standrads have been developed and notified under the rules of the Motor Vehicle Act. The emission standards are being implemented by the Regional Transport Authorities.

Mass based emission standards have also been developed and notified for implementation at the manufacturing stage of vehicles.

CPCB has also identified critically polluted areas and provided action plans for improvement of the environment conditions in these areas."

VIII. POLLUTION THREAT TO TAJ MAHAL

72. The threat caused by pollution to the world famous historical monuments in Agra-Mathura region of Uttar Pradesh particularly the Taj Mahal has over the years agitated the minds of the public at large. Against this back drop, the Committee during the course of their examination of CPCB also looked into this issue and the related matters in some depth.

Subsequent to the decision of the Government of India to set up a large oil refinery in the Mathura region to meet the growing petroleum products demand of the North-west region, some apprehensions were raised about the possible adverse effects on the monuments in the Agra-Mathura region as a result of gaseous effluents to be discharged from the refinery. Taking these sentiments into consideration, the Government of India constituted an Expert Committee under the Chairmanship of Dr. S. Varadarajan on 16 July, 1974 to advise the project authorities on the measures to be taken for keeping the pollution effect to the absolute minimum. The Committee was not only to guide Mathura Refinery Project in planning and implementing effective pollution measures, but also to advise the Ministry on the pollution aspects of other ancillary and downstream Units. The Expert Committee expressing its deep concern for the preservation of the priceless monuments in Agra, particularly the Taj Mahal, made several recommendations for consideration of the Government for expeditious implementation with a view to reducing the existing level of pollution substantially and forestalling any future sources of pollution. It has also specifically stated that there was urgent need for continuous study and investigation so as to ensure prevention of monuments from exposure to further threats from pollutant or any other cause.

74. Various other studies/surveys/committees have since then reported upon the matter. These included a series of reports of National Environmental Engineering Research Institute (NEERI) under the Council for Scientific and Industrial Research, Process and Product Development Centre (PPDC), M/s. Tecneco, National Metallurgical Laboratories (NML) etc.

75. A Joint Committee of Parliament on the Air (Prevention and Control of Pollution) Bill, 1978 under the Chairmanship of Dr. Karan Singh had also in their report presented to the House on 18 May, 1979 dealt with the issue. The Joint Committee were of the opinion that in order to save the Taj Mahal and other monuments in Agra and Braj Mandal from the ill-effects of air pollutants from the Refinery, the Government apart from taking urgent and effective steps for prevention of existing air pollutants

from other sources in Agra as per recommendations of the Expert Committee, should also look into the Refinery problem afresh and examine the feasibility of shifting atleast the most polluting units of the Refinery to the Etawah Region. The Committee were also of the opinion that the treated liquid effluents, which were likely to poison the already polluted drinking water of the Agra region, should, if possible, be conveyed through a pipeline and discharged into the river at a suitable point downstream of Agra or Etawah to protect the drinking water supply.

(b) *Identification of trapizium*

76. Based on the findings of the different stuides/committees etc. an area in the form of a trapizium in an around Agra-Mathura region has been identified as environmentally sensitive air pollution protection area. For regulating the pollution from industrial growth in this area. For regulating the pollution from industrial growth in this area, a detailed list of industries has been drawn up as follows:

Category I Industries that are to be prohibited to come up within the air pollution protection area.

Category II Industries that may be permitted to come within the area only with adequate environmental control measures; and

Category III Industries that may be permitted to come up within the area.

(c) *Status of air pollution in Agra*

77. The Committee desired to know the status of air pollution in Agra. The information furnished by the Ministry have been categorised as follows:

MAJOR POLLUTING SOURCES

Foundry	168
Rubber factory	20
Engg. Industries	46
Chemicals and other industries	55
Lime kiln	03
	292*

*Source:U.P. Pollution Control Board

MOTOR VEHICLES*

6,349 (Heavy Tonnage Vehicles - Trucks and Buses)

4,861 (Medium Tonnage Vehicles, car, jeep etc)

16,103 (Light Tonnage Vehicles, scooter, etc)

* The 6 important road crossings located within 3 kms radius of Taj Mahal which were surveyed by CPCB.

AIR QUALITY STATUS (TAJ MAHAL)

Parameter	Existing length	Ug/ m ³	Prescribed Standard
SO ₂		8.6-42	30 ug/m
NO _x		5.4-23.3	30 ug/m ³
SPM		283-1114	100 ug/m ³
Benzopyrene		26.9	10 ug/m ³
Lead		0.025-0.88	1.0 ug/m ³

CONTRIBUTION OF POLLUTING SOURCES (KG/HR)

	SO ₂	SPM	NO _x	CO	HC
Industries	285	945	56	15819	107
Vehicles	42	6	155	599	284

EMISSION OF SO₂ FROM MATHURA REFINERY

The emission of SO₂ (sulphur dioxide) from Mathura Refinery is about 600-700 kg/hr, against the prescribed standard of 1000 kg/hr (1 MT/hr or 24 MT/day). The impact of SO₂ emission from Mathura Refinery to Taj (Agra) is about 1.0 ug/m³ (as per I.M.D. calculation). This impact can be further reduced by reduction of SO₂ emission from refinery by increasing the efficiency of S.R.U and blending of high sulphur crude with low sulphur crude before distillation.

In their summary inspection Report, dated 16-18 October, 1993. NEERI have also suggested various measures which have the potential to about the Sulphur Dioxide release from the Mathura Refinery from the current levels by over 90 per cent. A table indicating the Sulphur Dioxide emission using various crude mixes at Mathura Refinery is given at Annexure II.

POLLUTION BY VARIOUS TYPES OF INDUSTRIES

	Emission rate (1 kg/hr)				
	SPM	SO ₂	Nox	CO	HC
1	2	3	4	5	6
Foundries	749	122	16	13998	—
Fit Furnace	72	12	1.5	1346	—
Chemicals	53	70	8	236	—
↳ Rubber sole	4	5	1	17	4
Retractory	18	11	1.6	3.4	1
Bricks	16	22	2.4	73	16
Engineering					

1	2	3	4	5	6
Lime	33	43	5	146	33
	945	285	56	15819	107

(d) *Steps taken for monitoring and control of pollution in the area*

78. The Committee desired to know the steps taken for monitoring and control of pollution in the area. The Ministry of Environment and Forests in a note furnished after evidence stated as follows:

“CPCB in collaboration with SPCB installed monitoring stations at 5 locations in Agra including Taj Mahal.

Monitoring stations maintained by Indian Oil Corporation at Farrah, Sikandra, Bharatpur and Mathura have been periodically checked to ascertain the status of air quality.

Research and development studies were taken up by NML and NEERI to improve the performance of cupola in the foundries. As a result, wet scrubbing system/multiclone separators with after burners have been developed for containment of pollution from foundries (Ref: NML, NEERI Report).

Central Glass and Ceramic Institute has been assigned the task of improving the design of furnace in glass industries. A detailed study on possibilities for pollution control in glass industries has also been made by CPCB. Based on this study, standards for glass industries have been laid down (Ref: CPCB report on Glass Industry).

Based upon NML and NEERI studies, CPCB has recommended the standards for particulate matter for foundries which are as follows:

Cupola Size	Particulate matter
3 T/hr	450 mg/Nm ³
3 T/hr	150 mg/Nm ³

(e) *Package of measures needed for pollution control in Agra*

79. In reply to a related question of the Committee, the Ministry of Environment and Forests in a post-evidence note stated that the best desirable option from the view-point of pollution control will be to shift the polluting units from the area. According to the Ministry, this had not happened the other alternative would be the following:

FOUNDRIES

Cupola Design Modifications:

Conversion of single cold blast furnace (traditional cupola) into divided (secondary) blast type. This will improve cupola efficiency by 25 to 30% in fuel (coke) cost thereby reducing SPM as SO₂ emission in the same proportion.

Change in operational norms:

The cupola melting shop should be equipped with weighing balance to control charging material weights before they are put in cupola to maintain the coke: metal ratio. Also, cupola melting shop should be equipped with blast volume and pressure measuring instruments.

Change of Fuel:

SO₂ emission from cupola may be reduced by using B.P. premium quality coke having low ash content, and also adding soda ash to the extent of 0.5 to 1.0% of charge.

Flue gas treatment:

90% of higher particle size in cupola emitted dust can be removed using inertial collectors like baffled chamber settling chamber. Overall collection efficiency of such size range would be around 30% only.

Centrifugal separator namely cyclone, multicones can remove particles having size more than 10 μm with overall collection efficiency of 70%.

Low energy scrubbing units like spray towers impingement scrubbers, centrifugal wet cyclone etc. can remove $> 5 \mu\text{m}$ size particles with 90% efficiency and thereby the flue gas dust concentration can be brought down to about 140 mg/m^3 . These units have added advantage of removing the gaseous pollutants viz. SO₂ and Nox.

Well designed after burner above the charging door can reduce CO emission by 80—90% and raise flue gas heat content. Therefore the afterburner will extract sensible heat from flue gas and reduce coke consumption as well as pollutant emissions resulting in improved metal: Coke ratio.

BRICK KILNS

System	Min particle size for 90% efficiency (μm)
Settling chamber	> 50
Baffle chamber	> 50
Louver settling chamber	> 20
Cyclone	5—25
Scrubber (Pease Anthoney)	1—25

80. In this connection the Committee's attention was also drawn to a memorandum jointly signed and submitted by 103 members of Parliament addressed to the Prime Minister expressing their anxiety over the deteriorating condition of Taj Mahal caused by environmental

pollution and requesting for a time bound programme of action. The Memorandum included the following:

“Taj Mahal is not only India’s but world’s cultural heritage, pride and unparalleled artistic creation. In spite of Government of India’s several negative steps to check environmental pollution. Taj Mahal is becoming sick. It is gradually losing its lustre. According to Government steps, figures and declaration the quantum of pollution might not be causing damage to the health of Taj but it is a bitter truth that Government is not fully sensitive and responsive towards the safety of Taj. Taj is being neglected and therefore its condition is deteriorating day by day.

To save Taj from pollution, it is the need of the day that iron foundries and other industries of Agra be provided natural gas and power as alternative fuel so that use of coal may be abandoned. Natural Gas be supplied to Agra through HBJ pipeline. Natural gas based power generation plant be established in Agra.

Government of India’s present policy of restricting the industrial development of Agra to save Taj from environmental pollution has failed. It is apprehended that the present policy will lead to grim situation. Government will not succeed in restricting illegal use of coal. Day by day increasing unemployment in Taj Trapezium area will also create law and order problem. Until Government does not provide natural gas, electricity be provided through National Thermal Power Corporation directly to Agra Taj Trapezium area so that the environmental pollution may be controlled.

Mathura Oil Refinery has created the problem of environmental pollution for Taj. Prior to its establishment Taj was not prey of this problem. Agra has been made to face the evil impacts of its establishment but Agra is being deprived from petroleum products leading to neglect of security of Taj.

Because of the non-availability of (L.P.G.) cooking gas in Agra, cow dung, soft coke, hard coke and wood is used on mass scale as fuel for domestic and commercial use. It creates pollution and damage to Taj. Hence, pipe line carrying L.P.G. from Mathura to Agra be laid to supply alternative fuel to avoid this pollutive fuel. At the moment, L.P.G. connection through cylinders be given to persons registered in the waiting list so that the quantum of pollution be lessened around the Taj.

Three National Highways meet at Agra near the Taj Agra Bombay; Delhi, Agra, Calcutta; Agra Jaipur. National Highways pass through Agra within an ambit of less than 5 kms. They may be linked through a ring road far away from Taj to avoid pollution created by automobile traffic.

The recommendation of vardarajan Committee in context to plantation be implemented in the right context. Taj National Park project should also be expedited.

A barrage be constructed at Agra on Yamuna River in Yamuna Clearance Project which is under contemplation under Ganga Action Plan. It will improve the water level, check the incoming of desert towards Agra and pave the way for successful plantation to make Agra green.

We, the following signatories, appeal you for keeping Taj healthy and mortal to take effective steps in this direction and get a time-bound action plan framed and ensure its implementation through Environment Ministry with co-ordination of other departments. If the Govt. fails in doing so and Taj is damaged, history and worldwide admirers of artisanship of Taj will not excuse the present generation.”

81. The Committee enquired about the action taken on the package of measures mentioned above. The Ministry of Environment and Forests in a note furnished after evidence stated as follows:

“CPCB, vide letter No. 31011/26/88-PCI-II dated October 12, 1993 issued a report on Status and Options for Air Pollution control in Agra. It was also sent to Chairman, Uttar Pradesh Pollution Control Board, Lucknow.

Uttar Pradesh Government has taken the proposal positively, and in a meeting taken by the Hon'ble Minister for Environment & Forests, the Adviser to the Governor, Govt. of UP has assured that necessary action will be taken for implementation of the various measures.”

82. On further enquiry by the Committee about the meeting taken by the Ministry of Environment and Forests, the Ministry in a note stated:

‘A meeting was taken by Minister of Environment & Forests on 12 July, 1993 with the representatives of Indian Meteorological Department, Department of Tourism, Archaeological Survey of India, Ministry of Industry, Central Pollution Control Board, Indian Oil Corporation, National Environment Engineering Research Institute were present and NEERI presented the final report. The following points were suggested in the meeting.

1. A dedicated power supply is to be arranged in the Agra-Mathura Trapezium.
2. Natural gas should be made available to the industries in Agra-Mathura Region.
3. Domestic connections of LPG should be made easily available in the Agra-Mathura region.

4. The industries would be encouraged to change process technologies to build in pollution control in their production system.
 5. Traffic should be stopped at a point about 3Km from the Taj Mahal and battery buses should be arranged from this point.
 6. More greeneries should be developed in Agra-Mathura region.
83. When asked about the follow-up action on the points referred to above, the Ministry in their note stated:

“Regarding the shifting of industries — it is to be mentioned that in Agra the Foundries are very small industries and are managed by the local people. Hence it was not proposed for the shifting of the industries.

In order to implement these suggestions a concerted effort of different Ministries were required and Secretary (E&F) immediately wrote to Secretaries of Ministry of Petroleum and natural gas, Ministry of Power, Ministry of Urban Development, Ministry of Non-conventional Energy sources. Chief Secretary, Uttar Pradesh and Commissioner Agra Division.

The Commissioner Agra has informed that under the City forest scheme 50,000 saplings have been planted on the eastern side of the Taj Mahal at a distance of about 1.5 km. About 300 acres of land have been identified across the river and it is proposed to set up a park cum city forest area. The Uttar Pradesh Pollution Control Board have taken up a series of meetings for encouraging industries to change process technologies and building pollution control in their production system. Ministry of Non-Conventional Energy Sources informed that at the three kilometer radius of the Taj Mahal it is possible to operate battery operated vehicles.

Accordingly schemes have been sought from the U.P. Tourism Corporation through the U.P. Pollution Control Board regarding the operation of the battery buses. This will reduce vehicular pollution to the Taj Mahal.

A project has been initiated with the UNIDO for assisting the foundry and glass industries in and around Agra to abate and control pollution from foundry and glass industries.

Other suggestions such as change of process in the industries in Agra, greening of Agra, supply of CNG and LPG in Agra-Mathura region and for arrangement of dedicated power supply in this region are regularly being followed up with the concerned Ministries for speedy implementation.

The Suspended Particulate Matter and the heavy dust fall rate are mostly responsible for the damage to the Taj Mahal. Suspended

Particulate Matter contain smokes and tarry matters and these deposit on the marble surface and cause yellowishness. In order to save Taj Mahal from the dust pollution the industries are persuaded to abate and control dust pollution through change of process technology or setting up of dust control devices.

The Ministry of Environment and Forests is continuously monitoring developments for implementation of the suggestions made by different experts to save the Taj Mahal.”

84. In this connection, the following facts also came to the notice of the Committee:

- (i) The Ministry of Petroleum and Natural Gas vide their letter dated 17 August, 1989 addressed to the Principal Secretary, Department of Industries, Government of Uttar Pradesh had stated that they had asked Gas Authority of India Ltd. to allot the required gas to Uttar Pradesh State Industrial Development Corporation for Ferozabad-Agra region.
 - (ii) In reply to USQ No. 465 for 24 February, 1994 regarding HBJ pipeline, the Government stated that the allocations along the HBJ are in excess of the availability of gas. It had, therefore, not been considered feasible to extend the pipeline to Shikobabad, Ferozabad and the Taj Trapezium area of Agra.
 - (iii) In submissions made before the Supreme Court on 8.3.1994 in writ petition No. 13381 of 1984 in the case of M.C. Mehta Vs. U.O.I. and others, the Chariman, GAIL stated that the carrying capacity of HBJ was 18.2 Million Standard Cubic Meters Per Day (MMSCMD) but in view of lower availability of gas, the quantity available for supply of gas, through this pipeline was of the order of 15 MMSCMD against the requirement of about 23 MMSCMD by the consumers to whom gas had been allocated by Government. Whereas CMD, ONGC in pursuance of directions of Supreme Court on 8.3.1994 in his submission *inter alia* stated that the availability of gas for use from Hazira/HBJ was to the extent on 19.19 MMSCMD.
 - (iv) In his submission before the Supreme Court in the case (Appendix III) referred to in (iii) above, the Managing Director, UPSIDC *inter-alia* expressed his willingness to undertake the activities of supply of gas within Taj Trapezium with the financial assistance of the State Govt. in case GAIL is ready to take natural gas available at the city gate.
- (f) *Closure of units in pursuance of order of Supreme Court*

85. During the course of examination, the Committee's attention was drawn to the orders reportedly passed by the Supreme Court on 27 August, 1993 and 17 September, 1993 ordering immediate closure of certain industries on the banks of the Ganga in U.P. for not having installed the necessary pollution control devices and also giving two months' time to certain other units in the Taj region in Agra to instal necessary air

pollution control devices in their plants. The Committee during evidence invited comments of the representatives of the Ministry of Environment and Forest and CPCB to those reports. They were informed that the recent problem arose because of a Supreme Court judgement directing the closure of 212 small scale factories in and around Agra.

86. The Ministry in a further note stated:

"These factories are mainly foundries, glass manufacturers and some chemical industries. Some of them are situated in Ferozabad (146) and some in Agra(66). The Supreme Court took this extreme step when it was informed that these units did not even respond to the notice of the UP Pollution Control Board directing them to submit a pollution status report.

The Supreme Court has suspended the closure order of the industries who have installed suitable pollution control devices. The UP Pollution Control Board will further monitor the compliance of standards by these industries and report to the Supreme Court within two months.

The industries argue that they do not have technologies suited to their financial capability. This is not entirely true. Products and Produce Development Centre (PPDC) has desired systems and equipments which can reduce Suspended Particulate Matter (SPM) and Sulphur dioxide(SO₂). According to the PPDC one equipment cost about Rs. 5 lakhs. They have installed the equipment in a few factories in Agra which have been successful in reducing the emissions. The industries complain that the equipment will be shortlived because of corrosion problems.

The Ministry of Environment and Forests have requested the UNIDO to give technical assistance to install effective equipments to reduce pollution in foundries and glass industries. An expert from the UNIDO visited Agra and has given a preliminary report. An expert team is expected to study the problem in detail and suggest easily implementable solutions."

87. The Supreme Court in their orders had *inter-alia* observed:

"Mr. A.K. Sen and Mr. Kapil Sibal have further complained that in spite of their approaching the Uttar Pradesh Pollution Control Board, the Board has not looked into their grievances in the sense that the Board is not in a position to advise the industry as to which type of air pollution control device is to be set up. We direct the Board for such advice, the experts employed with the Board shall render the necessary advice within one week of the industry contacting the Board for the purpose.

Since there is a feeling among the learned counsel representing some of the industries in the State of Uttar Pradesh that the Uttar

Pradesh Pollution Control Board is not assisting them properly, we request the National Environment Engineering Research Institute, Nagpur to entertain that request by any of the industries in the State of Uttar Pradesh for advice in this manner. If any of the industries approach the Institute for such advice the Institute shall depute its expert to inspect the industry and make suitable suggestions for setting up of the necessary air pollution control device. Needless to say that the industry shall pay the consultancy charges and other charges of the Institute."

88. The Committee Subsequently learnt that Supreme Court *Vide* their orders dated 27 August, 1993 and 3 December, 1993 had ordered immediate closure of 312 industrial units in Taj Trapezium including 212 small scale factories in Agra for not having installed the necessary pollution control devices.

89. From the information furnished to the Committee after evidence it was seen that a large number of units (subsequently stated to be 125) had got installed suitable pollution control devices after the Supreme Court orders and obtained suspension of the closure orders.

IX. LISTING OF POLLUTION SOURCES

90. CPCB had prepared an industry inventory in 1984 to assess pollution status in major and medium polluting industries. During the Seventh Plan period the status reports on Class-I and Class-II cities were also prepared. With rapid industrial development, CPCB felt it essential to update the inventory every five years. In June, 1987 a reorganisation plan was prepared under which CPCB was to complete, by 1990, inventorisation of all major and minor industries for Air and Water pollution, upgradation of sanitation state in Class-I and Class-II cities and status for vehicular pollution in metropolitan cities. Upto August, 1992, CPCB could neither update the inventory nor make complete listing of all major, medium and small scale industries which were relevant to Air and Water pollution due to lack of response and timely supply of information from the State Boards.

91. In response to the query of the Committee about the present status of inventory, the Ministry of Environment and Forests stated in a note as follows:—

"CPCB initiated industrial inventory of large and medium industries in 1987. The industrial data is being collected with the help of State Boards which are meagrely staffed. So far, inventory reports has been prepared for the States of Punjab and Gujarat. These reports have been published. Similar reports are under pre-paration for the States of M.P., Goa, H.P., Karnataka, A.P. and UT-Pondicherry. Those reports will be published in this financial year (1993-94). For remaining States, data being received

are fed into the computer. The print-outs require updating of information and filling up of gaps. This will be done by visits and consultation with respective State Boards.

CPCB has since completed an inventory of large and medium industries falling under 17-categories of highly polluting industries. The report provides statewide and industry wise status on installation of pollution control systems for these categories of polluting industries."

92. The Committee wanted to know the reasons for the slow progress on the preparation of inventory. The Ministry of Environment and Forests in a post evidence note state:—

"The delay in collection of the data from the State Boards is due to lack of manpower with many of the State Boards".

93. The Committee asked when was the work of preparation of inventory in respect of all industries and States expected to be completed. The Ministry of Environment and Forests, in a note furnished after evidence, stated as under:

"The updated reports in respect of two States namely Punjab and Gujarat are completed while the data from the remaining States are being verified by interacting with the State Boards and through field visits. The reports in respect of Uttar Pradesh, Madhya Pradesh, Orissa, Rajasthan and Haryana are likely to be completed during current year (1993-94), while the inventory reports for the remaining states are likely to be completed during 1994-95. It is proposed to make use of the Central Statistical Organisations and Directorate of Industries for preparation of inventories. In the mean time, inventorisation of large and medium industries falling under the 17 highly polluting categories of industries has been completed."

X. PREPARATION OF COMPREHENSIVE INDUSTRY DOCUMENTS

94. The Audit Para reveals that CPCB as part of the functions assigned to them by the Water and Air Acts brought out 30 publications (25230 copies) of Comprehensive Industry Documents (COINDS) out of which 3234 copies were sold, 3967 copies were issued as complimentary and 18129 copies were lying in the stores. According to Audit, this resulted in CPCB not succeeding in disseminating information as envisaged in the Acts and the publications with sale price of Rs. 9.81 lakhs lying unsold. When enquired why the copies of the said document disproportionate to the requirements were made, the Ministry of Environment and Forests in a note stated:

While Publishing the documents, estimates were made in respect of prospective users which include the State Boards, Industrial Association, the individual industries, R&D Associations and important libraries. For off-set printing there is a limitation on the minimum number of copies which is financially viable. The

publications are sold and also issued on complimentary basis. The demand for such publications is received from time to time and in recent times the demand has been increasing due to public awareness and stringent regulatory measures."

95. The Committee desired to know the total expenditure incurred to print 25230 copies, the Ministry of Environment and Forests, in a post evidence note, stated that the total expenditure incurred was Rs. 18 lakhs.

96. To a query whether issue of only 7101 copies of the 25230 copies was indicative of bad planning, the Ministry, further, stated:

"The documents published by CPCB are required by various users from time to time. Some of the documents published earlier are still in demand. In fact, in recent years the demand has considerably and regulatory measures. In this context, it may also be added that while publishing the documents minimum number of copies which is financially viable for offset printing was brought out. This was also keeping in view the demand over period of time."

97. The Committee enquired about the steps taken to adequately disseminate information regarding the industry documents published, the Ministry of Environment & Forests in a note furnished after evidence stated:

"CPCB has entered into an understanding with SPCBs and the Confederation of Indian Industry (CII) for dissemination of information regarding the publications. Through advertisements in newspapers, journals and various other forms of mass media a drive has been taken for wider publicity. Sales counters have been opened in various exhibitions and seminars. With the advent of reprographic facilities, the need of producing adequate number of printed documents has reduced which made it difficult to estimate the exact number of possible subscribers. To meet such situation it has been decided that not more than 300 copies of documents will be printed and as and when these copies are exhausted and there is continuing demand more copies will be reprinted."

98. According to Audit Para, 13 projects relating to preparation of COINDS were entrusted to outside agencies and a sum of Rs.34.80 lakhs had been released as consulting fee. These projects were given to consultants with prior approval of the Ministry on the grounds of either inadequate expertise available with CPCB or time constraints. The work which was to be completed during the Sixth Plan continued in the Eighth Plan period. When enquired about the latest position of the preparation of these COINDS, the Ministry in a note furnished after evidence stated:

"So far, 32 documents have been prepared under the COINDS series and 14 documents are under preparation. In some cases, the preparation of these documents were delayed beyond the expected time limit."

99. On being asked to explain the reasons for delay, the Ministry in a further note stated:

(i) "Poor response from Industries during the questionnaire surveys.

(ii) Hesitance on the part of the Industry to part with the technical information which required continuous persuasion."

XI. EQUIPMENT AND STORES

100. CPCB had six Zonal Offices at Calcutta, Baroda, Shillong, Kanpur, Chandigarh and Bangalore. Mobile laboratories for surveillance, planning and Control of pollution were already provided at Calcutta, Baroda and Kanpur. According to Audit Para, the monitoring and survey activities at Shillong, Chandigarh and Bangalore remained static even after incurring an expenditure of Rs. 25.03 lakhs.

101. The Committee enquired about the reasons for delay in setting up of mobile laboratories at Shillong, Chandigarh and Bangalore even after incurring an expenditure of Rs. 25.03 lakhs. The Ministry of Environment and Forests in a note furnished after evidence stated as under:—

"For Bangalore, Chandigarh and Shillong offices, three mobile laboratories were to be developed and three chassis were received in June, 1990. Subsequently, it was decided that two chassis will be used for remounting the GTZ Automatic Air Quality Monitoring systems and the third will be given to the Rajasthan Board which showed its interest. The remounting of the two chassis has been completed and vans are being used for field monitoring. The third chassis has not been given to the Rajasthan Board since the Rajasthan Board has since got a laboratory fabricated through other sources. The third chassis has been sent to the CPCB- Zonal Office (South) Bangalore for development of mobile laboratory."

XII. (A) FINANCE AND ACCOUNTS

102. It has been stated in the Audit paragraph that CPCB has received equipment and instruments valued at Rs. 4819.43 lakhs from foreign countries under International Collaborative projects. However, value of such assets was not being exhibited and included in the annual accounts and to that extent the accounts did not reveal complete status of the assets. Further there was no supporting asset register for the assets worth Rs. 530.44 lakhs excluding depreciation, reflected in the annual accounts of 1990-91. CPCB stated that no such asset register was being maintained.

103. The Audit paraphraph also revealed that eventhough the statutory auditors has pointed out as far back as in November, 1991 that the procedure for physical verification of assets was not adequate, no action was taken by CPCB on the same.

104. The Committee pointed out that though CPCB had spent substantial amount on acquisition of equipment, sound procedure for accounting and custody of stores was not being followed. Asked what steps had been taken to streamline the procedure for accounting and custody of stores, the Ministry of Environment & Forests in a note stated:

“The general practice followed for purchase of equipments/ instrument is through Tender Call, follwed by adopting all necessary procedures through the Materials Section in CPCB. After receipt of instruments/equipments, the instruments are handed over to the respective laboratories. The concerned laboratories maintain stock register and necessary varification and entries are made. After the production of verification and stock entry certificate, the bill is passed for release of payment.

Regarding custody of equipments, periodic checking of the instruments and stock inventory is being carried out by concerned laboratories. In addition, there will be general stock inventory and varification by a separate Committee set up for the purpose. Also, there is a separate stores to maintain the stock chemicals, glasswares etc. for distribution as per requirement by following necessary procedures.

However, the present system is under review by the Finance and Accouts officer who has been appointed by the Ministry for the purpose.”

105. When asked to explain to procedure followed by CPCB for maintenance of records about the equipment procured for issue to the different laboratories and Zonal Offices, the Ministry of Environment and Forests have in a note furnished after evidence stated:—

“The record of equipment procured in zonal offices are maintained in the respective zonal offices at headquarters stores, this has been started since October, 1993.”

106. To a query as to since when the procedure is under review by the Finance and Accounts Officer and by what time it was expected to be revamped, the M/O Env. & Forests, in post evidence information, have stated:

“The present system of acquisition of equipment, sound procedure for accounting and custody of stores is under study since September, 1993 under the guidance of Finance and Accounts officer.

It is expected to be revamped by the end of this Financial year.”

(b) Diversion of funds

107. Ganga Project Directorate (GPD) provided CPCB Rs. 209.20 lakhs for monitoring Ganga Water under Gange Action Plan. CPCB was required to utilise the funds for use in establishment of automatic water quality monitoring stations on river Ganga and pending requirement, the amount was to be kept in an interest bearing account.

108. According to Audit, during 1990-91 and 1991-92, CPCB utilised an amount of Rs. 60 lakhs for other purposes. CPCB, according to Audit, also did not invest the funds in short term deposit through which interest to an extent of Rs. 6.05 lakhs could have been earned. This was not only a diversion of funds but also a loss to the project. CPCB at the close of 1991-92 had an unutilised balance of Rs. 46.23 lakhs.

109. The Committee desired to know the reasons for the diversion of funds and whether the approval of GPD had been taken before the diversion of funds to other purposes. In reply, the Ministry in a note stated that the diversion was done as a temporary measure and the funds were subsequently repatriated. As regards loss of interest, the Ministry stated that funds not required immediately were kept in fixed Deposit. According to the Ministry, the Account now stands completely adjusted.

XIII. OTHER ISSUES

110. The Audit paragraph has revealed certain other irregularities in the functioning of the Central Pollution Control Board. Briefly, they included, improper maintenance of records; incorrect procedure adopted in purchases resulting in avoidable outflow of foreign exchange (valuing Rs.3.39 lakhs); irregular transfer and disposal of assets; failure to take action to get equipments repaired/replaced; additional expenditure incurred (Rs. 29.15 lakhs) in the execution of work on account of inadequate planning, slackness in Supervision, non-enforcement of clauses in the contracts; improper assessment of demand resulting in publication valuing in sizeable amounts (Rs. 18 lakhs) lying in the stores; missing of books in the library (costing Rs. 1.42 lakhs) etc.

Some of such cases are dealt with in the succeeding paragraphs.

(a) Improper maintenance of records

111. CPCB had not manualised the procedure in respect of acquisition, custody and accountal of stores articles. Although the procedure prescribed in General Financial Rules (GFR) were stated to be followed in this regard, no consolidated records were maintained for receipt and issues of dead stock and other stores, which was in contravention to Rule 112 of GFR. Purchases made for the Zonal/Sectional offices were also issued without any record. No Separate assets/dead stock registers were maintained at headquarters in respect of Zonal/Sectional offices. CPCB was also not aware of the assets created out of grants received through sponsored/collaborative projects.

112. When enquired about steps taken to streamline the procedure for proper maintenance of records, the Ministry stated in a note:

“Work on manualising the procedures in respect of acquisition, custody and accounts of stores, has been taken up and a Finance and Accounts Officer (FAO) has been appointed for the purpose.

Records of stores regarding acquisition, custody and account of stores articles are being streamlined as per procedure prescribed in the GFR.

Records are being maintained for the assets created out of grants received through sponsored/collaborative projects. In many cases collaborators have not mentioned the cost of equipment/system gifted to the Central Board. Information for the same is being collected.

Separate assets/dead stock Registers have been opened in respect of Head/Zonal/Sectional Offices and are being updated and reconciled.”

(b) Extra outflow of foreign exchange

113. A test check by Audit of certain import cases revealed that equipments/instruments had been imported on C.I.F. basis thus resulting in avoidable outflow of foreign exchange amounting to Rs. 3.39 lakhs. The Committee desired to know whether the reasons for the outflow of foreign exchange in those cases had been enquired. The Ministry in a note stated:—

“The Ministry of Surface Transport was consulted regarding procedure for import of Scientific Instruments/Equipments on FOB basis as per their instructions. Keeping in view, the nature of consignments and frequency of import, they have advised that the consignments may be air freighted through AIR INDIA, wherever AIR INDIA flights are available. This procedure is now followed. Regarding insurance, this is now being done only through Indian Insurance Companies.”

(c) Execution of Works

114. CPCB was allotted in April, 1993 a piece of land measuring 1.51 hectares by Delhi Development Authority (DDA) at Shahdara, Delhi for its building at a cost of Rs. 22.38 lakhs. The Ministry accorded expenditure sanction for Rs. 3.28 crores for construction of building complex during December, 1986 and July, 1988. CPCB, however, spent Rs. 3.57 crores on the work. The excess expenditure was yet to be regularised, Audit have pointed out that CPCB had to incur additional expenditure of Rs. 29.15 lakhs on account of inadequate planning, slackness. In supervision and non-enforcement of contract clauses at various stages of the progress of work.

(d) Overstocking of publications and missing library books

115. It has been pointed out by Audit that publications worth Rs. 18 lakhs since 1978-79 were lying in the stores which showed improper assessment of demand.

116. Further, 349 books costing Rs. 1.42 lakhs had been found missing from the library. The Committee desired to know whether the issue of missing books from the library has been got investigated with a view to fixing responsibility. The Ministry of Environment and Forest in a note furnished after evidence stated:—

“The matter was investigated and it was not possible to fix responsibility on any individual because of the fact that in those days there was no Librarian and no proper system of issue and return could be followed. In the process of shifting the premises of CPCB from its temporary sites to a permanent site in 1989, number of books were found missing. After investigations it has been decided to write-off the loss of these books.”

117. On being enquired about the remedial steps taken to obviate such type of pilferages in future, the Ministry in their note furnished after evidence stated:—

“All the books/journals have been computerised and a system of issue and retrieval have been introduced. Officers with specific responsibility for looking after library have been posted. Security arrangements have been tightened up.”

XIV. FINANCIAL PERFORMANCE

118. Against a total allocation of Rs. 1185.50 lakhs, CPCB incurred an expenditure of Rs. 1163.01 lakhs during the Seventh Five Year Plan period (1985-90). Similarly, during the annual plans (1990-92) CPCB spent Rs. 504.59 lakhs against the total plan budget of Rs. 500 lakhs.

XV. INTEGRATION OF POLLUTION CONTROL ACTS

119. The Committee drew attention of the representatives of the Ministry and CPCB to certain provisions of the Water and Air Acts which were overlapping. While admitting the same, the Secretary, Environment stated during evidence that the Ministry had requested the Indian Law Institute to look into it. In a note furnished to the Committee in the context, the Ministry stated:—

“In view of the fact that there are three major enactments relating to pollution control, it has been decided to examine these laws and integrate them to the extent possible, based on findings of the assignment given to the Indian Law Institute. The report is received and is being examined by the Ministry.”

120. The need for prevention and control of environmental pollution had engaged serious attention of the country atleast since the 1970's. In March,

1974 Parliament enacted the Water (Prevention and Control of Pollution), Act, which required Central Government to constitute a Board to be called "Central Board for the Prevention and Control of Water Pollution" under the then Ministry of Works and Housing to perform the functions assigned and exercising the powers conferred under this Act. The Board was subsequently brought under the Ministry of Environment and Forests in 1981. Consequent upon enactment of Air (Prevention and Control of Pollution) Act, 1981, the Board was entrusted with, additional responsibilities from March, 1981 in regard to air pollution. It was renamed as Central Pollution Control Board (CPCB) in October, 1988 and noise pollution also was brought under the ambit of its activities. The Audit para is based on test check of activities of the Central pollution Control Board during the Seventh Five Year Plan (1985-1990) and the Annual Plans for 1990-91 and 1991-92. The various aspects arising out of the examination of the Audit paragraph are dealt with in the succeeding paragraphs.

121. The Central Pollution Control Board is the national apex body aimed at prevention and control of water and air pollution. It co-ordinates activities of the State Boards in nation-wide programmes of water and air pollution control. As per the provisions of Water Act, besides Chairman, Member-Secretary and five members each representing Central Government and State Boards, CPCB was also to comprise of three non-officials representing interests of Agriculture, Fisheries, Industry, Trade or any other interest and two members to represent Central Govt. Companies/Corporations. The Board was last constituted on 2 December, 1991. The Committee are surprised to note that none of the three non-officials nominated by the Government belonged to the specified fields, but represented public health, media and technical education. Further, presently, apart from Chairman the Board consists of only six other members as against 17 Members as per provisions of the Water Act. Referring to the present incomplete composition of the Board, the Ministry of Environment and Forests simply stated that the Ministry are taking necessary action for filling vacant posts. The Committee wonder as to how an incomplete Board could effectively supervise the pollution control activities at national level. The Committee regret to note the delay in filling up the vacancies in the Board and recommend that Government should take early action to complete the composition of the Board and ensure proper representation to eminent people from the relevant discipline as prescribed so that they can make useful contribution in prevention and control of pollution.

122. The Committee note that as on 31 March, 1992, CPCB had 83 scientific, 138 technical and 172 Ministerial staff against sanctioned strength of 94,186 and 205 respectively. Thus 21% of the sanctioned strength of scientific/technical posts remained vacant. Explaining the reasons for vacancies lying unfilled for a considerable length of time, the representatives of the Ministry and the CPCB stated during evidence that

after the reorganisation plan undertaken in 1987, the recruitment rules were required to be approved by the Ministry of Environment and Forests and the Department of Personnel and Training. While the Rules have been finalised by the Board and the Ministry, they are still awaiting clearance of the Department of Personnel and Training. The Committee consider the delay unfortunate and desire that Government should look into the matter so that the pollution control activities of the Board are not hampered due to non-availability of requisite scientific and technical personnel.

123. As per the Water Act, 1974 and the Air Act, 1981, CPCB was required to lay down standards for quality of water and air. The CPCB directed its efforts towards development of Minimal National Standards (MINAS) only for trade effluents and sewages discharged. According to the Ministry of Environment and Forests, CPCB had so far formulated and laid down MINAS for 32 categories of industries (liquid effluent standards). Similarly, emission regulations were laid down in respect of 29 categories of industries and development of standards were stated to be in an advance stage of finalisation in respect of 18 categories of industries and expected to be finalised by 1994. The Committee would like to be informed of the progress made by CPCB in the development of standards in respect of 18 items which are expected to be completed in 1994.

124. A disquieting feature observed by the Committee was that even though it was known that the standards developed by CPCB were not binding on the State Boards in terms of the provisions of the Water and Air Acts, no action was taken by the Ministry to make them legally mandatory on the State Boards. It was only on 19 May, 1993, i.e. after the Audit paragraph appeared, that the Ministry of Environment and Forests *vide* their notification issued on 19 May, 1993, made the Minimal National Standards (MINAS) legally binding on the State Boards. According to the Ministry, the State Boards have now been empowered to make the standards more stringent where situation so demands but they are not permitted to relax the standards. The Committee consider the delay unfortunate. They recommend that the CPCB should constantly monitor the standards developed by the State Boards and oversee the steps taken to ensure their enforcement.

125. As part of water pollution control, it was decided to establish monitoring stations for monitoring quality of water every month with reference to 19 significant parameters, subsequently enlarged to 22. The monitoring data are sent to CPCB by the State Boards who are paid at a prescribed rate for each sample depending on the number of parameters. The Committee note that out of 480 Water Quality Monitoring stations established upto March, 1992, 42 stations could not supply any data and remained non-operational for periods ranging from one to five years. These stations were not operational as the State Boards were not responsive to the request either to activate or to relocate these stations. Some of the stations sanctioned even three years back are still non-functional mainly due to the

delay in identifying alternate sites. What has surprised the Committee is that even in the light of non-response, CPCB did not deem it necessary to issue directions to the State Boards under Section 18 of Water Act, 1974. The Committee, therefore, desire that the Ministry of Environment and Forests should look into the matter with a view to ensuring proper co-ordination between CPCB and the State Boards so that all the water monitoring stations are made operational and proper monitoring is done about the quality of water.

126. The Global Environmental Monitoring Scheme (GEMS) under World Health Organisation has a network of surface water quality stations all over the world, of which India is also a participating country with CPCB as the nodal co-ordinating agency. Each country is required to send water quality data on annual basis to WHO collaborating centre in Canada which is the central data depository. The Committee regret to note that the reports for the period from 1985 to 1987 were sent only in 1990, and for the period from 1988 to 1991 were sent after November, 1992. The report for 1992 has not been sent as yet. The Ministry have not offered any convincing explanation for the delays. The Committee recommend that CPCB should evolve a foolproof mechanism to ensure that in future the reports are sent regularly on annual basis so that the available advantages by participation in the scheme are made use of in time. The Committee would also like to be informed about the latest position in the submission of reports.

127. A Memorandum of Understanding (MoU) on Environmental Cooperation was signed in January, 1988 between the Government of India and the Government of Netherlands and a project called "Biological Monitoring and Ecotoxicological Studies of river Yamuna" was prepared for carrying out a pilot study on the practicability of using biological parameters to evaluate the ecological quality of fresh water rivers in India. As per MoU, contribution of the Indian Government was to be Rs. 43.28 lakhs and the Netherlands Government was to provide Rs. 950 lakhs in the form of export assistance, equipment, consultancy etc. The primary objective of the project was to develop a biomonitoring methodology to assess pollution load and to generate biological and chemical data on ecological systems in order to properly manage the rivers. The work was to be carried out in two phases jointly by CPCB and Industrial Toxicological Research Centre (ITRC), Lucknow. Mid-term evaluation reports submitted by a team of the Government of Netherlands in February and November, 1990, however, revealed that a substantial amount of expenditure in the first year had been incurred on manpower, purchase of vehicles etc. It further disclosed that the work plan was not completely carried out as projected, contractual obligation of ITRC was not well defined, CPCB had failed in eliciting involvement of ITRC and that the project was carried out without setting the strategy and was reduced to transfer of technology relevant to developed countries without taking into account the ground realities. The evaluation conducted in November, 1990 also pointed out that

the main objective of creating early warning system and bioaccumulation monitoring had not been achieved. The Committee recommend that the reasons for the non-achievement of the objectives of the project should be enquired into and responsibility fixed for the lapses.

128. As part of the Indo-Dutch bilateral collaborative programme, two water quality monitoring and sampling stations were also to be installed on river Yamuna in Delhi at Wazirabad (upstream) and Okhla (downstream) barrage. The objective of the project was to obtain a continuous insight into the basic parameters of the intake of Water from Yamuna river for drinking purposes. The stations were installed during August, 1991. While the Wazirabad station functioned satisfactorily, Okhla station had to be closed as the extremely bad quality of water (sewage) was destructive of some of the measuring electrodes of the station besides being a health hazard to the operators and had to be shifted to Haiderpur (upstream) water works. The change of site resulted in delay in programme, non-monitoring of the pollution generated by the city and also an infructuous expenditure of Rs. 1.88 lakhs. The Ministry of Environment and Forests have attempted to justify their action by stating that the automatic water quality monitoring stations have been installed on experimental basis to ascertain their suitability under Indian conditions. The Committee are not inclined to agree with this view. The fact that important considerations like quality of water, health hazards etc. had been overlooked by CPCB while selecting the site would clearly indicate that the precommissioning survey was totally inadequate. The Committee desire that the Ministry should thoroughly enquire into the reasons for inadequate survey and apprise them of the results.

129. The Committee note that nine Automatic Water Quality Monitoring stations on selected points on the river Ganga were proposed to be set up as a research project of CPCB to determine the river quality on a continuous basis and for use of the data for water quality modelling and assessment of impact of sewage/treatment effluents plants. The Ganga Project Directorate provided Rs. 50 lakhs for the programme including installation of the proposed automatic monitoring stations. According to Audit, the programme which was to be completed by June, 1989 had not been completed till January, 1993 and the expenditure incurred thereon was yet to yield any benefit. The Ministry of Environment and Forests have stated that out of the nine stations, six have since been commissioned and an expenditure of Rs. 59.68 lakhs have been incurred on the same. In the light of the Audit objection that the system was yet to yield any benefit, the Committee desire the Ministry to look into the matter and ensure that the expenditure incurred was commensurate with the gains achieved and apprise the Committee of the progress made in completing the project.

130. The Committee also feel concerned about the slow progress made in the implementation of Ganga Action Plan Phase I and II and desire that the matter should be looked into with a view to accelerating its progress.

131. In order to ascertain the quality of river water consistent with Human activities, CPCB planned to prepare an Action Plan to control pollution and maintain or restore the wholesomeness of rivers. In this connection comprehensive river basin studies were to be undertaken in respect of 14 major rivers by CPCB, out of which nine studies were to be completed and published between November, 1988 to December, 1991. The Committee regret to note that three of these studies are yet to be completed and reports in respect of six river basin studies have not been published so far. Similarly, on the basis of river basin studies, Action Plans for abatement of river water pollution were required to be prepared. In the action plan of CPCB for 1990-91, preparation of Action Plans for five major rivers was to be taken up. However, while Action Plan for three rivers were prepared belatedly, the Action Plans for two rivers were yet to be completed. The Committee take a serious view of the delays and desire that the Ministry should make concerted efforts to ensure that all river basin studies are completed and published and that the Action Plans are prepared expeditiously. The Committee would like to be apprised of the progress made in this direction and the steps taken for the implementation of the Action Plans.

132. The Committee note that a project named "Monitoring of Indian Coastal Waters" was sanctioned by the Ministry in 1987 to establish a monitoring network covering the critical stretches of coastal waters with a view to preventing coastal pollution. Under this project, a network of 173 inland, coastal, off-shore and high-sea monitoring stations were to be established and monitored by the respective State Boards. The project which was initially to be completed by 1990 had been extended till March, 1992 reportedly due to bad weather conditions, high cost of hiring of vessels, inadequate funds etc. Eventually the project was discontinued without completing the required rounds of monitoring after April, 1992 due to financial constraints. At the time of terminating the project, while the other executing agencies had completed 15-17 rounds of monitoring the Tamil Nadu Pollution Control Board had completed only 5 rounds. Still it was not proposed to undertake the balance monitoring now as it will not serve any useful purpose. The Committee take a serious view of the fact that even after the lapse of a period of six years and releasing funds of Rs. 115 lakhs against the sanctioned amount of Rs. 108 lakhs the project remained incomplete. What is more surprising is the fact that despite the inadequate monitoring, CPCB has prepared a software for an analysis of coastal data in order to prepare a Report on coastal water quality. The Committee wonder how the data which is not complete would be useful for preparing the Report on coastal water quality and recommend that the reasons for not completing the monitoring in full as required within the specified period and incurring an excess expenditure over the sanctioned amount be investigated and the Committee apprised of the outcome.

133. The Committee note that in 1986-87, the Department of Ocean

Development (DOD) started a project entitled "Survey of Environmental Pollution in Seas around India" which was aimed at seasonal monitoring/measurement of pollution in marine coastal areas upto 5 Kms. off-shore along the country's entire coastline. The steering Committee of DOD reviewed and modified the project in June, 1990 and redefined the length and width of study stretches and renamed it as "Coastal Monitoring and Prediction System (COMPAS)". The Zonal Office, CPCB, Calcutta was one of the units among the eleven units indentified for undertaking the work. Out of the 29 laboratory equipments, Zonal Office, CPCB, Calcutta could commission only one. The Committee regret to note that even after the lapse of more than 3 years, CPCB have not been able to complete even the commissioning of the equipments. They recommend that the Ministry should ensure that the Commissioning work of the equipment is expedited so that the work of monitoring of pollution of marine coastal areas can be taken up without any further delay.

134. The Committee find that in January, 1991, the Ministry of Environment and Forests had identified 17 categories of industries that caused maximum pollution in the country and 1541 industrial units were asked through a Notification to instal pollution control equipments by 31 December, 1993 and bring down emissions in air and water to the standards prescribed. According to the information furnished by the Ministry to the Committee in December, 1993, 1003 of the 1541 units in the large and medium sector have provided the requisite pollution control equipments to comply with the standards and others are in the process of installing the same. The Ministry also stated that State Pollution Control Boards have been directed to monitor regularly the progress in these units and also to take strict action against the defaulting units. The Committee desire that concerted efforts should be made to persuade the remaining units also to comply with the standards and instal the requisite equipments so that extreme punitive action like closure of units, having social and economic ramifications, are avoided. They would like to be apprised of the latest position of compliance by the units including the Public Sector Undertakings. The Committee would also like to be informed of the steps being taken to enforce standards in other polluting industries in addition to the 17 where they have been made mandatory.

135. The Committee consider it imperative that while developing standards for the quality of water and air and enforcing them on industrial units necessary aid/technical advice is given to the industries/units particularly the small scale units in the installation of pollution control equipments. The Committee's attention in this connection has already been drawn to the complaints by such units that the State Boards were unable to provide the necessary help in the matter. The Committee, therefore, desire that Government should look into the matter and take necessary steps in extending all possible help to the units in complying with the pollution control measure.

136. The Committee note that in 1984, National Ambient Air Quality Monitoring (NAAQM) project was initiated by CPCB as a part of pollution management programme for which it identified three parameters for monitoring namely Sulphur Dioxide, Nitrogen Dioxide and Suspended Particulate Matter. By March, 1992 CPCB established 290 stations in the country. For establishing of NAAQM stations, CPCB had incurred an expenditure of Rs. 261.63 lakhs during the Seventh Plan period (1985-90) and Rs. 176.45 lakhs during the years 1990-91 and 1991-92 out of its Annual Plans. Out of the 290 stations, 50 stations are not in operation because of delay in procurement of instruments, non-availability of trained persons on daily wages, access to public buildings and electricity connections etc. Significantly, CPCB had incurred expenditure amounting to Rs. 35 lakhs on these stations. According to the Ministry, the State Boards have been asked to expedite the operation of these stations or refund the grants. The fact that CPCB have not been able to make the monitoring stations operative and secure the necessary data through the State Boards even after one to eight years of their setting up clearly indicates absence of proper monitoring and close cooperation between the CPCB and the State Boards. The Committee, therefore, desire that the Ministry should look into the matter and ensure that all the monitoring stations are made operative and the data generated thereon are analysed and effectively used in improving the quality of air.

137. The threat caused by pollution to the world famous historical monuments in Arga-Mathura region particularly the Taj Mahal has over the years agitated the minds of the public at large. The Committee in this connection find that subsequent to the decision of the Government of India to set up a large oil refinery in the Mathura region to meet the petroleum products demands of the north-west region, apprehensions were raised about the possible adverse effects on the monuments in the Agra-Mathura region as a result of gaseous effluents to be discharged from the refinery. Taking this into consideration the Government of India constituted an expert Committee under the Chairmanship of Dr. S. Varadarajan on 16th July, 1974 to advise the project authorities on the measures to be taken for keeping the pollution effect to the absolute minimum. The Varadarajan Committee was not only to guide Mathura refinery project in planning and implementing effective pollution measures, but also to advise the Ministry in the pollution aspects of other ancillary and downstream units. The expert Committee while expressing its deep concern for the preservation of the priceless monuments in Agra, particularly the Taj Mahal made several recommendations for consideration of the Government with a view to reducing the existing level of pollution substantially and forestalling in future sources of pollution. It had also subsequently stated that there was urgent need for continuous study and the investigations so as to ensure prevention of mounments from exposure to further threats from pollutants or any other cause. Various other studies/surveys/committee have since

then reported upon the matter. These included a series of reports of National Environmental Engineering Research Institute (NEERI) under the Council for Scientific and Industrial Research (CSIR) Process and Product Development Centre (PPDC), NML, M/S. TECHNECO, etc. A Joint Committee of Parliament on the Air (Prevention and control of Pollution) Bill, 1978 under the Chairmanship of Dr. Karan Singh had also in their report, presented to the House on 18th May, 1979, dealt with the issue. The Joint Committee were of the opinion that in order to save Taj Mahal and other monuments in Agra and Brij Mandal from the ill effects of air pollutants, the Government apart from taking urgent and effective steps for prevention of existing air pollutants from other sources in Agra as per recommendations of the expert Committee should also look into the refinery problem afresh and examine the feasibility of shifting atleast the most polluting units of the refinery to the Etawah region.

138. The Committee note with grave concern that adequate steps were not taken by Government over the years despite several recommendations made by several Committees to effectively prevent and control pollution and preserve those historical monuments. As regards the current status, the Ministry of Environment & Forests identified the major polluting sources in Agra apart from emission from Mathura Refinery, foundry, rubber factory, engineering industries, chemical and other industries, motor vehicles etc. The Committee have been informed that based on the findings of the different studies/expert groups etc., an area in the form of a Trapezium in and around Agra-Mathura region has been identified as environmentally sensitive air pollution protection area. For regulating the pollution from industrial growth in this area, industries have been broadly classified into three categories viz., (i) those to be prohibited to come up within the air pollution protection area; (ii) those which may be permitted to come within the area only with adequate environment control measures; and (iii) industries that may be permitted to come up within the area. According to the Ministry, from the view point of pollution control the best desirable option will be to shift, the polluting units from the area. However, since this has not happened the other alternatives were evolved in the form of a package of measures needed for pollution control in Agra. These included *inter-alia* (i) fiscal incentives and other benefits for shifting of the polluting units; (ii) dedicated/uninterrupted power/gas supply to the industries/commercial activities to discourage the use of DG sets; (iii) priority for provision of clean fuel (LPG) to the residents of Agra from the Mathura Refinery; (iv) use of battery/CNG operated vehicles within specified area of Agra; and (v) construction of an outer ring road at Agra to divert the traffic from the three National Highways. The Committee agree with the point of view of taking a package of measures for pollution control as many of these industries were shifted from their original site to the newly constructed Foundry Nagar in Agra in the year 1975 onwards and further shifting of those industries will have grave social and economic

consequences including mass unemployment of the people directly or indirectly dependent on these industries.

139. In regard to supply of gas to industries located in Taj Trapezium area which is considered as one of the important measures to control air pollution the Committee find that in reply to question in Parliament on 24 February, 1994 regarding extension of HBJ pipeline to Taj Trapezium area the Government have stated that it has not been considered feasible as allocation of gas along the HBJ are in excess of the availability of gas. In this connection the Committee find that as far back as August, 1989 the Ministry had directed GAIL to allot the required gas to the UPSIDC for Ferozabad-Agra region. The Committee regret to note that the commitment made four years back is not being fulfilled. The Committee are also surprised to find that there are different figures in regard to availability of gas. On the one hand according to ONGC the availability of gas was to the extent of 19.19 MMSCMD while according to GAIL the quantity of gas available for supply through HBJ pipeline is of the order of 15 MMSCMD against the requirement of about 23 MMSCMD. It is, to say the least, indicative of the reluctance to meet the commitment and the lack of co-ordination between various wings of Government. Considering the fact that the whole region has been identified as environmentally sensitive air pollution protection area, the Committee desire that the question of supplying of dedicated/uninterrupted gas and power on priority basis to the industries using coal/diesel needs to be urgently looked into. They also desire that in order to check vehicular pollution electrification of railway tracks in Taj Trapezium area and introduction of local electric trains service should be considered for expeditious implementation.

140. In this connection the Committee's attention has also been drawn to a memorandum jointly signed and submitted by 103 Members of Parliament addressed to the Prime Minister pointing out the extent of threat of pollution to the Taj and urging to initiate certain specific measures included in the memorandum. The Committee desire that the same should be taken up for expeditious implementation.

141. The Committee have been informed that the impact of SO₂ (Sulphur Dioxide) emission from Mathura Refinery to Taj (Agra) is about 1.0 ug/m³. They have also been informed that this impact can be further reduced by reduction of SO₂ emission from refinery by increasing the efficiency of S.R.U. and blending of high sulphur crude with low sulphur crude before distillation. In their inspection Report, NEERI have also suggested various measures which have the potential to abate the Sulphur Dioxide releases from the Mathura Refinery from the current levels by over 90 per cent. As pointed out by the Committee earlier, since Mathura refinery is a major source of pollution, it is essential that immediate measures be taken to minimise pollution from the Refinery by installation

of latest equipments and other measures. The Committee would, therefore, like to be informed of the action taken in this regard to reduce the impact of pollution caused by Mathura Refinery.

142. As regards implementation of the package of measures, the Committee have been informed that a meeting was taken in July, 1993 by the Minister of Environment And Forests with the representatives of Indian Meteorological Department, Department of Tourism, Archaeological Survey of India, Ministry of Industry, Central Pollution Control Board, Indian Oil Corporation, National Environment Engineering Research Institute, etc. for identifying action points to be taken to control pollution in Agra-Mathura region. The Ministry of Environment And Forests assured the Committee that they are continuously monitoring developments for implementation of the suggestions made by different experts to save the Taj Mahal. The Committee cannot remain contented merely with this assurance. They recommend that the package of measures and various other suggestion should be considered for expeditious implementation in a time-bound manner so that the historical important priceless monuments are adequately protected from further pollution. Considering the impact of air pollution on the Taj, the hazard to the health of human being in the region can be well imagined. The Committee would like to be informed of the specific actions taken on the package of measures evolved for pollution control in TPZ area.

143. The Committee desire that Government should taken measures on priority basis for pollution control in other areas which have been identified as environmentally sensitive from the historically important point of view or due to other considerations.

144. The Committee note that a writ petition relating to pollution of Taj Mahal is currently pending before the Supreme Court. The Supreme Court in their orders dated 27th August, 1993 and 3 December, 1993 ordered immediate closure of 312 industrial units in Taj Trapezium including 212 Small Scale Factories in Agra for not having installed the necessary pollution control devices. These factories were mainly foundries, glass manufacturers and some chemical industries. The Committee have been informed that as on 17 February, 1994, 125 units had got installed suitable pollution control devices after the orders of Supreme Court and obtained suspension of the closure orders. The fact that several units had demonstrated their willingness to comply with the legal requirements after the intervention of Supreme Court clearly indicates that the pollution control authorities were earlier not very serious in eliciting cooperation from the units and enforcing the pollution control measures in a persuasive and decisive manner. The Committee are unhappy over this. They desire that the Ministry should look into this matter for appropriate action plan for the implementation of various measures needed for pollution control throughout the country.

145. Another aspect which engaged the attention of the Committee in the

case of Agra was that the aggrieved units had pleaded before the Supreme Court that the State Pollution Control Boards did not possess the requisite competence and were not well-equipped to guide them in the installation of the necessary pollution control devices. The Committee regret to note that despite it being one of their functions, CPCB woefully failed in providing the requisite technical assistance to the State Board and the Industrial Units. The Committee consider this as an extremely important aspect requiring urgent attention of the Government. They recommend that while enforcing the pollution control law the authorities concerned should also be in a position to provide sufficient technical advice to the industrial units about the details of the suitable cost effective equipments which the Units could afford to instal. The Government should also formulate and implement an attractive package of fiscal incentives and disincentives to encourage the polluting units to instal pollution control devices.

146. The Committee find that in 1984, CPCB prepared an industry inventory to assess pollution status in major and medium polluting industries. With rapid industrial development, CPCB felt it essential to update the inventory every five years. In June, 1987 a recognition plan was prepared under which CPCB was to complete by 1990, inventorisation of all major and minor industries for Air and Water pollution, upgradation of sanitation State in Class I and Class II cities and status of vehicular pollution in metropolitan cities. Unfortunately, inventory reports for Punjab and Gujarat have only been prepared and published so far. The delay in publishing reports relating to the rest of the States has been attributed to lack of response and timely supply of information from the State Boards. This is, thus, yet another area requiring close cooperation and better co-ordination between CPCB and the State Boards. The Committee, therefore, desire that effective steps should be taken to update the inventory and complete listing of all major, medium and small scale industries which are relevant to air and water pollution with a view to making an overall scientific assessment of pollution status in the industries for taking up pollution control measures.

147. The Committee note that CPCB, as part of the functions assigned to them by the Water and Air Acts, brought out 30 publications (25230 copies) of Comprehensive Industry Documents (COINDS) out of which 3234 copies were sold. 3867 copies were issued as complimentary and 18129 copies were lying in the stores. The Committee take a serious view of the fact that an expenditure of Rs. 18 lakhs was incurred for the publication of 25230 copies out of which only 7101 copies were issued with the remaining copies valuing Rs. 9.81 lakhs are lying unsold. Further the work of preparation of other COINDS entrusted to outside agencies which was to be completed during the Sixth Plan period continued till Eighth Five Year Plan even after incurring an expenditure of Rs. 34.80 lakhs as consultancy fee. All these are indicative of the inadequate assessment of the requirement of publications and absence of control and monitoring on the part of the CPCB on the

work assigned to outside agencies. In the latter case, the Ministry also failed to exercise control since the work was entrusted to the outside agency after their prior approval. The Committee, therefore, recommends that the matter should be enquired into and responsibility fixed for the lapses. The Ministry should also ensure that proper steps are taken by CPCB in dissemination of information.

148. CPCB had sought to develop mobile laboratories for surveillance, planning and control of pollution under the Laboratory Development Programme. The Committee notes that three chassis were received in June, 1990 incurring an expenditure of Rs. 25.03 lakhs for developing mobile laboratories at Bangalore, Chandigarh and Shillong offices. These remained idle for more than three years. Subsequently, it was decided that two chassis will be used for remounting the GTZ Automatic Air Quality Monitoring Systems and the third was proposed to be given to Rajasthan Board. However, as the Rajasthan Board managed to get a laboratory fabricated through other sources, it was sent to the CPCB Zonal Office (South) Bangalore for development of mobile laboratory. The Committee recommends that the reasons for procurement of equipment without undertaking proper assessment and its usage for purposes for which it was not intended should be thoroughly enquired and steps taken to obviate recurrence of such cases in future.

149. The Committee are concerned to note that equipments and instruments worth Rs. 48.19 crores received from foreign countries under international collaborative projects were not reflected in the annual accounts of the Board. Further, no registers regarding assets worth more than rupees five crores were maintained. What has further disturbed the Committee is that even though the statutory auditors had pointed out as far back as November, 1991 that the procedure for physical verification of assets was not adequate, no action was taken by CPCB to streamline the system. This, in the opinion of the Committee, clearly shows laxity on the part of the officer responsible for maintenance of the books of accounts. The Ministry have sought to explain that the entire system of accounting in this regard is under review and expected to be revamped during the year. The Committee are not satisfied by this explanation. They desire that the reasons for non-maintenance of proper accounts should be enquired into and responsibility fixed for the lapses. They would also like to be informed of the action taken to streamline the accounting systems and procedure.

150. The Audit has pointed out several other irregularities in CPCB. Briefly they were, diversion by CPCB of the money granted by Ganga Project Directorate (GPD) for monitoring Ganga Water under Ganga Action Plan for other purposes; improper maintenance of records; incorrect procedure adopted in purchases resulting in avoidable outflow of foreign exchange (valuing Rs. 3.39 lakhs); irregular transfer and disposal of assets; failure to take action to get equipment repaired/replaced; additional expenditure incurred (Rs. 29.15 lakhs) in the execution of work on account

of inadequate planning; slackness in supervision; non-enforcement of clauses in the contracts; missing of books in the library (costing Rs. 1.42 lakhs), etc. These cases have been described in detail elsewhere in the Report. The Committee deplore the laxity on the part of CPCB authorities which had resulted in the extra expenditure and occurrence of large scale irregularities. They recommend that the above mentioned cases should be thoroughly enquired into and responsibility fixed for the lapses. The Committee would like to be informed of the action taken in the matter.

151. The Committee find that during the period 1985-92, a total budget allocation of only Rs. 1685.50 lakhs, was made of which CPCB spent Rs. 1667.60 lakhs. The Committee desire that considering the magnitude of the problem steps should be taken by Government to ensure that adequate funds are allocated for environmental protection. The Ministry should also ensure that the funds provided to CPCB are efficiently utilised by it for the prevention and control of pollution.

152. The facts stated in the foregoing paragraphs clearly identify certain vital areas relating to pollution control in general, and the functioning of Central Pollution Control Board, in particular requiring immediate governmental attention. Briefly, these areas were, incomplete composition of CPCB, delay in making standards developed by CPCB mandatory. shortcomings in the functioning of monitoring stations and inadequacies in monitoring the quality of water, delay in completing river basin studies and preparation of Action Plans for abatement of river water pollution, delay in commissioning of equipments, and in making air quality stations operative, inadequacies in the enforcement of pollution control measures, need for providing aid/technical advice to industries/units particularly the small scale ones, delay in initiating steps to prevent and control pollution of Taj Mahal, lack of adequate co-ordination between CPCB and the State Pollution Control Boards etc. There had also been several financial, administrative and other irregularities. The Committee's attention has been drawn in this connection to Government of India's "Policy statement for abatement of Pollution 1992" which seeks to lay emphasis towards actual implementation. The Committee consider that the Central Pollution Control Board being the premier organisation on the subject has an increasingly important role to play in prevention and control of pollution. The Committee, therefore, recommend that the facts stated in this Report should be thoroughly examined and appropriate remedial/corrective measures taken with a view to streamlining the functioning of the Central Pollution Control Board so that it acts not only as an advisory agency but also as an effective promotional body in abatement of pollution for preventing deterioration of the environment.

153. The Committee note that the Ministry of Environment and Forests have initiated an exercise to integrate the various major Central Acts on environment with the object of protecting environment, implementing international decisions and consolidating and amending major Central Acts

on the subject. The Committee have been informed that the Indian Law Institute who had been given that assignment have given their report which was now being examined by the Ministry. The Committee desire to be informed of the further progress made in the matter.

11 April, 1994

21 Chaitra, 1916 (Saka)

BHAGWAN SHANKAR RAWAT,
Chairman,
Public Accounts Committee.

APPENDIX I

4.1 Central Pollution Control Board – Audit Review

4.1.1 Introduction

Parliament enacted, in March 1974, the Water (Prevention and Control of Pollution) Act, which required Central Government to constitute a Board to be called "Central Board for the Prevention and Control of Water Pollution" (CBP & CWP), under the then Ministry of Works and Housing, to perform the functions assigned exercising the powers conferred under this Act. The Board was subsequently brought under the Ministry of Environment and Forests, in 1981. Consequent upon enactment of Air (Prevention and Control of Pollution) Act 1981, the Board was entrusted with additional responsibilities from March 1981 in regard to air pollution. It was renamed as Central Pollution Control Board (CPCB) in October 1988 and noise pollution also was brought under the ambit of its activities.

The Act applies to the States of Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Rajasthan, Tripura and West Bengal and the Union Territories and it would also apply to any other State which adopts this Act by resolution under clause (1) of article 252 of the Constitution.

The Act provided for constitution of State Pollution Control Boards in the States and for laying down their functions. During the period between March 1974—May 1992, 25 State Boards became operational. As regards Union Territories, the Act stipulated that no State Board would be constituted and the Central Board would exercise and perform the functions of a State Board for an Union Territory.

With a view to augmenting the resources of the Central and the State Boards the Water (Prevention and Control of Pollution) Cess Act, 1977 was enacted providing for levy and collection of a cess on water consumed by certain industries and by local authorities.

4.1.2 Scope of audit

CPCB is audited under Section 14 of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. This review is based on test check of activities of CPCB during the Seventh Five Year Plan (1985-90) and the annual plans for 1990-91 and 1991-92.

4.1.3 Highlights

General

CPCB is not adequately empowered to discharge its functions effectively despite being the apex body at the national level for pollution control. (Para 4.1.5)

Manpower

Twenty one per cent of the sanctioned scientific/technical posts remained vacant even though CPCB themselves were competent for recruitment of such personnel to the extent of sanctioned strength. (Para 4.1.6)

Standards

Under the Pollution Control Act, CPCB was to lay down standards for quality of water and air. Quality of pollutants discharged were to be regulated by the State Boards with reference to the standards developed. CPCB had not yet evolved any mandatory standards for water and air quality. It directed its efforts towards development of Minimal National Standards for trade effluents and sewage discharge which came under the purview of the State Boards and not CPCB. (Para 4.1.7)

Water Pollution

Biological monitoring and eco-toxicological studies on river Yamuna, which was to generate early warning system, and bioaccumulation monitoring were not completed. In this connection, CPCB failed in eliciting cooperation of the Industrial Toxicological Research Centre (ITRC). CPCB installed two automatic water quality monitoring stations but due to improper selection of site and incompatibility of the equipment, the objective of assessing pollution load on river Yamuna caused by the city of Delhi could not be achieved. Nine automatic water quality monitoring stations, which were planned to assess the improvement in the water quality due to abatement measures and to give early warning to down-stream users of adverse water quality, could not be installed. Nine river basin studies were to be undertaken, completed and published by November 1988 to December 1991. However, reports in respect of only three studies had been completed (and yet to be published), report on one study was under preparation, two studies were under progress and action was yet to be initiated in respect of the remaining three studies. Revised target dates for completion and publication had not been set. (Para 4.1.8)

A project sponsored by the Department of Ocean Development for monitoring of Indian coastal water which continued for six years was eventually closed, after spending Rs. 115 lakhs without any result. (Para 4.1.10)

Air Pollution

Since promulgation of the Air Act, CPCB could only initiate preliminary work on air quality improvement and action towards prevention, control and abatement of air pollution had not been initiated. Coordination between CPCB and the State Boards was not effective. Out of three automatic air quality monitoring stations, received under European Economic Community (EEC) collaborative programme, only two stations were found to be in order. These stations also did not perform well due to software and power problems and non-availability of trained personnel etc. (Para 4.1.9)

Inventorisation of air polluting industries had not been completed so far. The inventory prepared eight years back was also not updated. (Para 4.1.11)

Equipment and Stores

CPCB procured chassis and equipment for mobile laboratories under Laboratory Development Programme which could not take off resulting in ineligibility of an expenditure of Rs. 25.03 lakhs. (Para 4.1.12)

Accounting

Assets worth Rs. 4819.43 lakhs received under foreign collaborative projects were not reflected in the accounts. Funds from collaborative projects to the tune of Rs. 60 lakhs were diverted during the years 1990-92. (Para 4.1.13)

Miscellaneous

Inadequate planning, lax supervision and non-enforcement of the provisions of the contract resulted in CPCB incurring an additional expenditure of Rs. 29.15 lakhs. (Para 4.1.15)

Publications worth Rs. 18.00 lakhs since 1978-79 were lying in the Stores which showed improper assessment of demand. Three hundred and forty nine books costing Rs. 1.42 lakhs had been found missing from the library. (Para 4.1.16)

4.1.4 Organisational set up

CPCB is the national apex body for prevention and control of water and air pollution. It coordinates activities of the State Boards in nation-wide programmes of water and air pollution control. Main functions of CPCB are directed (i) to promote cleanliness of wells and streams and (ii) to improve quality of air and prevent, control or abate air pollution in the country.

CPCB has a full time Chairman, a Member-Secretary, five members representing the Central Government, five members nominated from among the members of the State Boards, three non-officials to represent interests of Agriculture, Fisheries, Industry, Trade or any other interest and two members to represent companies or corporations owned, managed

or controlled by the Central Government. None of the non-official members nominated by the Central Government in the reconstituted CPCB (December 1991) belonged to the specified fields, i.e, Agriculture, Fisheries, Industry etc, but reportedly belonged to 'any other interest'. The Ministry stated (November 1992) that these non official members represent public health, media and technical education.

CPCB had six zonal offices at Chandigarh, Kanpur, Calcutta, Shillong, Bangalore and Vadodara to coordinate activities of the State Boards. The function of zonal office at Chandigarh was transferred to a committee in March 1991, PCB transferred its powers in relation to Union Territories of Goa, Delhi and Pondicherry, to Administration (of these Union Territories) with effect from June 1988, June 1991 and April 1992 respectively, and wound up its sectional offices in these Union Territories.

4.1.5 Functions and Outlay

Major functions of CPCB at the national level for prevention, control or abatement of Water and Air Pollution were to:—

- advise the Central Government to plan and execute nation wide programmes on pollution control;
- collect, compile and publish technical and statistical data;
- lay down, modify or annual standards in consultation with the State Governments and to disseminate information;
- co-ordinate the activities of the State Boards;
- plan and organise training and arrange comprehensive mass awareness programme through media and perform such other functions as may be prescribed by the Government of India.

Functions and powers of CPCB are laid down under Section 16 and Section 18 respectively of the Water Act, 1974.

Under Section 16(2) (b), CPCB is required to co-ordinate activities of the State Boards and resolve disputes among them. The Act however, does not confer any power on the Central Board to oversee functioning of the State Boards. Cases of non compliance of the State Boards with the direction of the Central Board are required to be referred to the Ministry.

Standards relating to sewage and trade effluents are to be laid down by the State Boards and are not required to be vetted by CPCB. The latter's views are not also sought. Further, under the Act, CPCB has to sponsor investigation and research relating to problems of Water Pollution and prevention, control or abatement of Water Pollution but, in practice, the Ministry sponsors investigation and research projects relating to pollution problems. CPCB only assists the Ministry in evaluating progress and results of investigation and research projects sponsored by the Ministry.

Under Section 1 of the Act referred to above, CPCB is also to lay down, modify or annul standards for a stream or well in consultation with the State Governments concerned but, CPCB does not have the power to notify the standards thus framed which rests with the Ministry.

While the responsibility of inventorisation of pollution and preparing best designated use of water stretches rest with CPCB, Section 21-26 of the Act empowers only the State Boards for taking samples of effluents etc and for entry into and inspection of any place as also for prohibiting use of streams or wells for disposal of pollutants.

Thus, CPCB is not adequately empowered to discharge its functions effectively despite being the apex body at the national level for pollution control.

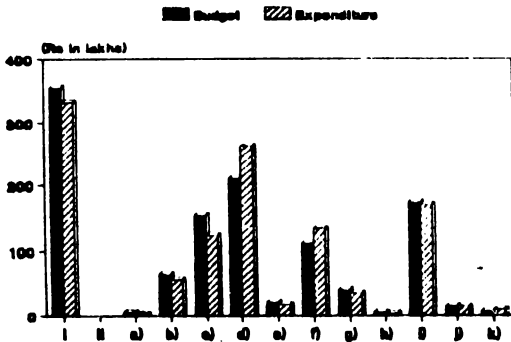
The main heads under which funds were spent during the Seventh Five Year Plan and subsequent annual plans 1990-91 and 1991-92 have been depicted below:

Expenditure during Seventh Plan (1985-90)

(Rs. in lakhs)

Heads of Account		Total Expenditure Allocation	
I	Land and Building	355.00	330.92
II	Projects and Programmes (Plan)		
a.	Surveillance of Pollution	5.50	2.30
b.	River Basin and Sub basin studies	66.25	57.52
c.	Water Quality and Monitoring	154.10	123.16
d.	Ambient Air Quality Monitoring	209.95	261.63
e.	Planning and Training	23.50	18.01
f.	Evolution of National Standards and implementation	122.70	132.78
g.	Consent Management and Legal Action	44.00	36.98
h.	Application of Pollution Control Technology	6.00	3.08
i.	Laboratory Development and maintenance	174.50	170.13
j.	Information, Library and Data Processing Services	16.00	16.63
k.	Pollution Control camps and publication	8.00	9.87
Total		1185.50	1163.01

Expenditure 1985-90 (7th Plan)

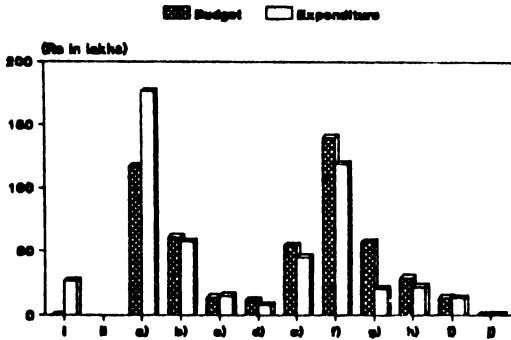


Expenditure during Annual Plans (1990-91)

(Rs. in lakhs)

Heads of Account		Total Plan Expenditure Budget	
I	Building Project (plan)	—	26.21
II	Projects and Programmes (Plan)		
a.	Monitoring (Assessment of Pollution loads through monitoring and survey of status of Air and Water through field measurement)	117.39	176.45
b.	Laboratories	61.00	57.44
c.	Standard Developments	14.00	15.14
d.	Training	12.00	8.19
e.	Establishment of Data Base System	54.26	44.99
f.	Pollution Control Enforcements	140.00	119.26
g.	Development of Pollution Control Technology and Low Waste process technology	57.20	20.58
h.	Publications	29.00	21.92
i.	Management of Hazardous Waste	14.39	13.75
j.	World Bank aided projects	0.76	0.66
Total		500.00	504.59

EXPENDITURE FOR 1990-1992



4.1.6 Staff strength

As on 31st March 1992, CPCB had 83 scientific, 138 technical and 172 ministerial staff against sanctioned strength of 94, 186 and 205 respectively. There were no norms for the ratio between scientific and non-scientific staff. Twenty one per cent of the sanctioned strength of the scientific/technical posts remained vacant though CPCB themselves were competent for recruitment of such personnel.

4.1.7 Development of Standards

(i) Standards for water pollution

Under Water (Prevention and Control of Pollution) Act, 1974, CPCB is responsible for laying down, modification or annulment of standards for streams or wells in consultation with the State Governments. The State Boards in turn are responsible for laying down standards for treatment of sewage and trade effluents to be discharged into any particular stream taking into account minimum fair weather dilution and the tolerance of pollution in the water of the stream after discharge of such effluents. They are also to lay down standards for discharge of sewage and sullage.

CPCB had initiated river basin studies in respect of six major river basins during the Seventh Plan period and by 1990 they had completed studies for four river basins and reports were under process. On the basis of these studies a map was prepared classifying different stretches of various major rivers based on the water use. The map also gave maximum allowable pollution parameters which the water in that stretch could support. These were more by way of guiding standards than mandatory levels for the State Boards to follow and develop their own pollution standards. So far the Ministry had not notified any of these standards for streams or wells in any State. CPCB was also not aware of any standards for pollution developed by the State Boards based on the minimum fair weather dilution and pollution level permissible for any stream in the States.

(ii) Standards for air pollution

Under Air (prevention and Control of Pollution) Act, 1981, CPCB has to lay down standards for quality of air. The State Boards on the other hand have to lay down standards for discharge of gaseous pollutants, including noise, having regard

to standards for air laid down by CPCB. They are also to advise the State Governments on the matter of demarcation of air pollution control area.

CPCB has not yet developed standards for air quality in the absence of which standard of air pollution can not be developed by the State Boards. In the absence of standards for air quality and air pollution, the State Governments also can not identify air pollution control areas to enforce provisions of Air (Prevention and control of Pollution) Act, 1981.

(iii) Preparation of Comprehensive Industry Document:

In 1978, CPCB initiated the process to evolve industry specific Minimal National Standards (MINAS) and policies to control water pollution from the industrial sources.

After preparation of a comprehensive document, MINAS evolved were placed before the Peer and Core Committee which comprised Chairman CPCB, experts, representatives from the Industry, representatives from Bureau of Indian Standard and National Institute of Occupational Health. The Committee recommended the standards developed for the respective industry for approval of CPCB. After approval of CPCB, the standards were sent to the Ministry for approval and notification in the Gazette.

During 1985-92, expenditure incurred under this programme was Rs. 147.92 lakhs against the allocation of Rs. 136.70 lakhs. CPCB had prepared comprehensive documents on 16 types of industries and had evolved 17 effluent/emission standards though this work fell in the jurisdiction of the State Boards. But, even after completion, the following documents had not been notified/published (November 1992):

Document on	Date of completion of study	Present status of the document
National standards for quality of soils for various purposes and areas	1991	Under review
Soda Ash	1989	Under finalisation
Natural Rubber Industry	1989-90	Under print
Dairy Industry	1991	Finalised for printing
Glass and Ceramics	1989-90	Finalised for printing
Acids and Alkalies	1989-90	Under preparation
Stone crushing	1990-91	Under preparation
Bullion refining	1990-91	Under preparation
Food and Fruit Processing	1989-90	Finalised for printing

For preparation of industry document time taken ranged from eighteen

months to two years. Besides, the time lag between completion of a project and final printing of a document was one to two years.

Further, it was observed that CPCB brought out 30 publications (25230 copies) of Comprehensive Industry Documents (COINDS) out of which 3234 copies were sold, 3867 copies were issued as complimentary and 18129 copies were lying in the stores. This was indicative of inadequate assessment of the requirement of these publications. Further, availability of the documents was also not adequately publicised to the environmental agencies as well as general public. This resulted in CPCB not succeeding in disseminating information as envisaged in the Acts and the publications with sale price of Rs. 9.81 lakhs lying unsold. Besides, due to poor circulation of the documents, feed back from end users, which would be essential in updating the standards, were also not being received.

Thirteen projects relating to preparation of COINDS were got done through outside agencies (consultants). A sum of Rs. 34.80 lakhs had been released as consultancy fees. These projects were given to consultants with prior approval of the Ministry on the grounds of either inadequate expertise available with CPCB or time constraints. Though these projects were scheduled to be completed within 7 to 13 months, five of these projects were in progress for more than two years. The task of preparation of COINDS initially earmarked for the Sixth Plan period continued even in the Eighth Plan period.

4.1.8 Water quality monitoring

(i) By the end of the Sixth Plan, CPCB had established 120 water quality monitoring stations which monitored quality of water every month with reference to 19 significant parameters subsequently enlarged to twenty two. Eighteen out of these 120 stations installed with funding from the Ganga Project Directorate (GPD) were operated by State Boards and after examining the suitability, based on proposals from the State Boards, new stations are sanctioned by CPCB. The monitoring data are sent to CPCB and the State Boards are paid at a prescribed rate for each sample depending on the number of parameters.

During the Seventh Plan, Rs. 154.10 lakhs was allocated out of which Rs. 123.16 lakhs had been expended. Subsequently, during 1990-92, the activity shifted to non-plan and expenditure of Rs. 47.39 lakhs in 1990-91 and Rs. 43.19 lakhs in 1991-92 was incurred on operation and maintenance of the stations.

Of the total 480 stations established upto March 1992, 42 could not supply any data and remained non-operational for periods ranging from one to five years. The State Boards were not responsive to the request either to activate or to relocate these stations indicating lack of co-ordination between CPCB and the State Boards. CPCB also did not exercise its powers to give directions under Section 18 of the Act of 1974.

Under the Global Environment Monitoring Scheme (GEMS) of the

United Nations Organisation (UNO), CPCB was required to furnish annual report on water quality data to UNO through Canada centre for inland water. CPCB sent the first report relating to the period 1985 to 1987 only in 1990. The report beyond this period had not been prepared so far (November 1992).

(ii) Biological monitoring of river Yamuna

A memorandum of Understanding (MOU) on Environmental Cooperation was signed in January 1988 between the Government of India and the Government of Netherlands under which a project proposal entitled 'Biological monitoring and ecotoxicological studies of River Yamuna' was prepared for carrying out a pilot study on the practicability of using biological parameters to evaluate the ecological quality of fresh water rivers in India. As per MOU, contribution of the Indian Government would be Rs. 43.28 lakhs and the Netherlands Government was to provide Rs. 950 lakhs in the form of expert assistance, equipment and consultancy etc for the total duration of the project. River Yamuna was identified for such study because of proximity with the office and the laboratory of CPCB and because it showed a large variation of pollution over a stretch of approximately 250 kms between a point upstream of Delhi to a point downstream of Agra. Primary objective of the project was to develop a biomonitoring methodology to assess pollution load and to generate biological and chemical data on ecological systems in order to properly manage the rivers. The work was to be carried out in two phases jointly by CPCB and Industrial Toxicological Research Centre (ITRC), Lucknow. Programme for the first year was to develop, adopt and test methodology which would give information for constructing an adequate scheme for the second phase for definite data generation.

In the mid term evaluation report, submitted by a team of the Government of Netherlands in February 1990, total expenditure in the first year (inclusive of ITRC expenditure) was shown as Rs. 8.13 lakhs, out of which Rs 6.25 lakhs had been incurred on manpower. However, this did not include Rs. 8.15 lakhs which was shown, in the statement of accounts of CPCB, to have been incurred towards purchase of vehicle, computer and library books. The evaluation report further disclosed that the work plan was not completely carried out as projected and due to the laboratory and manpower constraints, toxicity studies by CPCB could not be completed. The segment of technical programme to be executed by ITRC was complementary to CPCB programme without which no definite conclusion could be drawn. The absence of any report from ITRC defeated the purpose of the project. It was recommended that either ITRC should be pursued to carry out the work or CPCB should do it by adding more manpower and infrastructural facilities.

Further midterm evaluation conducted in November 1990 pointed out that the main objective of creating early warning system and

bioaccumulation monitoring had not been covered. The input of manpower from CPCB was only 50 per cent of the commitment, which had hampered the progress to a great extent. The evaluation report also criticised (November 1990) CPCB for not defining contractual obligations of ITRC. The project was carried out without setting the strategy and was reduced to transfer of technology relevant to developed countries without taking into account the ground realities. CPCB had also failed to secure full involvement of ITRC.

The Ministry stated (November 1992) that the final outcome of the project was in the form of a well defined, scientifically sound yardstick consisting of eight different indices. This yardstick was extensively discussed with international and Indian experts. The yardstick was generally accepted by all the experts and users. The Ministry's reply was at variance with the earlier evaluation report and was silent about non-achievement of objectives of the project because of lack of coordination between CPCB and ITRC.

(iii) Installation of automatic water quality monitoring and sampling stations

Another part of the above mentioned collaborative programme was to install two water quality monitoring and sampling stations on river Yamuna, in Delhi, at Wazirabad (upstream) and Okhla (downstream) barrage. The principal aim and longterm objective of the project was to obtain a continuous insight into the basic parameters of the intake of water from Yamuna river for drinking purpose. The short term objectives were to:

- support the Indo-Dutch Biomonitoring pilot study to be carried out on the river Yamuna;
- gain experience with regard to the functioning of the automatic water quality monitoring and sampling stations (AWQMS);
- establish a link between manual and automatic monitoring of water quality and
- obtain information for setting up and verification of water quality models.

The project was to be carried out over a period of two years, after which final evaluation was to be conducted. The Government of Netherlands agreed to provide Rs. 144 lakhs in the form of two automatic water quality monitoring and sampling stations, training and consultancy. The Government of India was to make available, through CPCB, all necessary funds for land acquisition and land preparation, staffing, costs of operation and maintenance of the two stations and import duties, if required. The stations were received and installed during August 1991. While the Wazirabad station functioned satisfactorily, the extremely bad quality of water (sewerage) was destructive to some of the measuring electrodes of the station at Okhla besides being a health hazard to the operators. This

station, therefore, had to be closed. CPCB requested the Municipal Corporation of Delhi (MCD), in November 1991, to provide a new site at Haiderpur for installation of the monitoring station and making available infrastructural facilities like platform, electrical connection etc. MCD had agreed to the proposal to make available the required facilities. The station was still to be shifted (November 1992).

CPCB stated (August 1992) that it was the first experimental project and there had been technical difficulties in making the systems operational. It was further stated that neither the experts from Netherlands nor CPCB could realise that at Okhla the water was so bad as to corrode the equipment and that the systems were highly complicated and teething troubles were inevitable. Evidently the equipment were not compatible with the site condition. The Ministry stated (November 1992) that the Okhla station has been shifted to Haiderpur (upstream) Water Works on experimental basis to monitor the water quality at intake point.

The replies are indicative of the inadequate precommissioning survey in selection of site which resulted in not only delaying the programme but also in infructuous expenditure on construction of platform (Rs 0.38 lakh) and their maintenance (Rs 1.50 lakh). Besides, the initial positioning of two stations at Wazirabad and Okhla was to assess the quality of water entering into and going out from the city of Delhi and to assess the pollution load thus generated. Now with both the stations situated upstream, the pollution load generated by the city will remain unmonitored.

(iv) Automatic Water Quality Monitoring Stations on Ganga

To monitor water quality of river Ganga continuously, nine Automatic Water Quality Monitoring Stations (AWQMS) on the river were proposed in 1987 as a research project of CPCB. The stations were to be installed at Kannauj (one), Kanpur (two), Allahabad (three), Varanasi (one), Patna (one) and Calcutta (one) which were identified as hot spots. Ganga Project Directorate provided Rs. 50.46 lakhs (March 1990) for the programme including installation of the proposed automatic monitoring stations. Monitoring involved installation of in-situ probe system on a floating platform to measure and record water quality parameters like dissolved Oxygen temperature, conductivity, turbidity etc. Data produced was to be captured in solid State data loggers and provision was to be kept to down load data into a micro-computer. Programme for down loading the data was to be prepared by Thames Water International by October 1992. The second part of this project was to procure floating platforms on which the automatic water quality monitoring systems were to be installed.

On the basis of global tenders, order for supply, erection and commissioning of the nine automatic monitoring stations was placed, in

October 1988, at a total cost of Rs 72.09 lakhs and order for procurement of nine floating platforms was subsequently placed, in February 1991, at a cost of Rs 39.18 lakhs.

According to the contract, the firm had to submit design and detailed drawings of the stations within two months from the date of the order. The firm was to be informed of the locations within five months and all nine stations were to be installed and commissioned within 240 days of the date of order. The contract also provided for levy of liquidated damages in case of delays in performance with the right of rescission in the event of delays in delivery.

An advance of Rs 7.21 lakhs being ten per cent of the total contract value was paid to the supplier in two instalments in February and September 1989. The programme which was to be completed by June 1989 has not yet (January 1993) been completed.

One set out of four to be supplied within six months, was tested at Wazirabad Water works on River Yamuna for four months, from December 1990 to March 1991, by a team of experts from UK who were satisfied with its performance. Each of the remaining three systems of the first lot were also tested during May 1991 at the premises of the supplier at Madras continuously for 24 hours. All three systems performed satisfactorily. Delivery of all the four systems were proposed subject to recommendation of the expert team which was to be received through GPD. The systems were once again tested in May 1991 and printout of the monitoring data supplied to CPCB without turbidity measurements. These were not done due to some discrepancy in the turbidity measurement systems and as CPCB had noticed a lot of discrepancy in the turbidity measurements for Wazirabad Water works tests. However, the first lot of four systems were received and installed at the stations between August 1991 and February 1992.

Two stations at Kanpur became non-operational within a couple of weeks after installation without generating satisfactory data. CPCB reported this matter to the supplier in February 1992 and instructed them to import the equipment required for the remaining five units, so as to avoid delay in supply and installation of the stations, but without any obligation on CPCB to accept the remaining five units if the performance of the first four units was not satisfactory.

CPCB released Rs 30.95 lakhs to the supplier towards supply of four sets of stations on pro-rata basis, in August 1991 (for one set) and in December 1991 (for three sets) notwithstanding unsatisfactory working of the system.

The supplier was also asked to provide continuous and uncorrupted data for one month from each of the stations. It was also decided that the order for supply of the remaining stations would be placed only after satisfactory performance of the system. Two sets of data for the period 4th February 1992 to 16th March 1992 and 25th March 1992 to 7th April 1992 received

from Kanpur station were not found to be reliable. The firm attributed the discrepancy to insufficient water depth. CPCB decided to shift the stations to alternative sites in order to obtain reliable data on the basis of 20 days operation by the first week of July 1992. Further progress in this regard was not made available to Audit though asked for.

Besides the expenditure amounting to Rs. 38.16 lakhs on the system, Rs. 28.73 lakhs was spent on procurement, fabrication and commissioning of floating platform for use of the system. Four platforms were supplied and erected and the fifth one was lying in the manufacturer's premises for want of the system.

Thus, the expenditure of Rs 66.89 lakhs on the system and the platforms were yet to yield any benefit.

The Ministry accepted the facts (November 1992) and expected that the system would prove its worthiness and the objectives would be met in due course.

(v) River Basin Studies

The objective of the River Basin Studies was to ascertain quality of a river consistent with human activities in the river basin and to inter relate the activities and quality so as to identify the cause of pollution qualitatively and quantitatively and prepare an Action Plan to control pollution and maintain or restore the wholesomeness of river.

The studies included classification and zoning of rivers at various reaches and ascertaining pollution potential in the river basin. It also consisted of both wet and dry study. The wet study involved monitoring of river water quality for specific period and the dry study involved field study on the basin activities. The studies were carried out through the State Boards with CPCB's financial assistance. With the help of the data generated, basin and sub-basin reports were prepared by CPCB.

For these studies, CPCB had identified 15 major river basins of the country covering 20,000 sq kms of catchment area. Out of the 15 studies, three were completed and printed during the Seventh plan period and three had been published before that. The remaining nine were to be completed and published by November 1988 to December 1991. However, only three studies have been completed and are yet to be published, report in respect of the supplier was also asked to provide continuous and uncorrupted data for one month from each of the stations. It was also decided that the order for supply of the remaining stations would be placed only after satisfactory performance of the system. Two sets of data for the period 4th February 1992 to 16th March 1992 and 25th March 1992 to 7th April 1992 received from Kanpur station were not found to be reliable. The firm attributed the discrepancy to insufficient water depth. CPCB decided to shift the stations to alternative sites in order to obtain reliable data on the basis of 20 days operation by the first week of July 1992.

Further progress in this regard was not made available to Audit though asked for.

Besides the expenditure amounting to Rs 38.16 lakhs on the system, Rs. 28.73 lakhs was spent on procurement, fabrication and commissioning of floating platform for use of the system. Four platforms were supplied and erected and the fifth one was lying in the manufacturer's premises for want of the system.

Thus, the expenditure of Rs 66.89 lakhs on the system and the platforms were yet to yield any benefit.

The Ministry accepted the facts (November 1992) and expected that the system would prove its worthiness and the objective would be met in due course.

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For these studies, CPCB had identified 15 major river basins of the country covering over 20,000 sq kms of catchment area. Out of the 15 studies, three were completed and printed during the Seventh Plan period and three had been published before that. The remaining nine were to be completed and published by November 1988 to December 1991. However, only three studies have been completed and are yet to be published, report in respect of one study is under preparation, two studies are under progress and action is yet to be initiated in respect of the remaining three studies. Revised target dates for completion and publication have not been set and expenditure incurred on three studies not made available. .

On the basis of the river basin studies, Action Plans for abatement of river water pollution are prepared on 'Best Use Concept', basis for different rivers. In the annual action plan of CPCB for 1990-91, preparation for Action Plans for five major rivers was to be taken up. However, CPCB stated in January 1993 that Yamuna Action Plan had been prepared and Damodar and Sabarmati Action Plans would be completed during 1993-94.

The Ministry stated (November 1992) that Action Plan for 37 polluted

river stretches under National River Action Programme of GPD, utilising the data of CPCB on river water quality monitoring, was under preparation.

4.1.9 Air Quality Monitoring

(i) National Ambient Air Quality Monitoring (NAAQM) Stations

To improve quality of air and to prevent, control or abate air pollution in the country, knowledge of air quality status was a pre-requisite. In 1984, National Ambient Air Quality Monitoring (NAAQM) was initiated by CPCB which identified three parameters for monitoring, namely sulphur dioxide, nitrogen dioxide and suspended particulate matter. Monitoring for sulphur dioxide and nitrogen dioxide was to be conducted at four hourly intervals and for suspended particulate matter at eight hourly intervals on two days every week basis as far as possible. CPCB was to scrutinise and analyse the data according to its proposed ambient air quality standards and prepare corresponding interpretative reports. These reports would not only assist in identifying air polluting cities/towns but would also be useful in pollution management programme.

For establishment of NAAQM stations, CPCB had incurred an expenditure of Rs 261.63 lakhs during the Seventh Plan period (1985-90) and Rs. 176.45 lakhs during the years 1990-91 and 1991-92 out of its annual plans. By March 1992, CPCB had established 290 stations in the country. Out of these only 217 were in operation and sending data regularly and remaining 73 stations were not in operation even after one to eight years of their setting up. Thus, a sum of Rs 27.30 lakhs released to the State Boards for the non-working stations remained unfruitful.

The first report 'National Ambient Air Quality Statistics of India' was prepared during 1990 after an attempt to systematically process data generated during 1987 to 1989. The detailed interpretative report which was to be prepared separately had not been prepared so far (August 1992).

In December 1990, another report named 'Ambient Air Quality Status of some cities/towns in India' was also prepared. This report for each State consisted of information pertaining of the cities/towns covered under NAAQM programme. In May 1991, a report of monitoring on 'National Ambient Air Quality Statistics of India 1990' was prepared. Target frequency of monitoring prescribed by CPCB was not followed in all these reports which was attributed to diverse locations of data gathering with varied laboratory practices and personal bias.

Though it was repeatedly being mentioned in the reports that frequency of prescribed time limit was not being adhered to by the stations, CPCB did not take any steps to initiate any remedial action to obtain appropriate data from all stations uniformly. CPCB had not devised any mechanism for regular inspection of the stations.

In February 1992, CPCB requested all the State Boards not to start any

new stations in the next financial year and also to cut down expenditure by reducing monitoring activity from three days in a week to two days in a week with 24 hours monitoring on each day with effect from March 1992. It was also decided that air monitoring stations which were sanctioned prior to March 1990 but could not be started till date need not be pursued and the amount paid to the State Boards be refunded to CPCB. Despite this decision in February 1992, no effort was made so far (November 1992) to get refund of Rs. 27.30 lakhs from the concerned State Boards for the non-operational stations.

Thus, National Ambient Air Quality Statistics of India remained at the data collection stage only and no interpretative report based on the data could be produced till date (November 1992). Out of the 1100 copies of the publications printed at a cost of Rs 0.50 lakh (approx.), few copies were sold which showed poor public response. CPCB so far could only initiate preliminary work on air quality improvement in the country and follow up action towards prevention, control and abatement of air pollution is yet to be initiated. No perspective plan has been framed so far (January 1993). The Ministry stated (November 1992) that analytical quality control exercises are to be gradually expanded to cover the entire NAAQN network as a routine exercise.

(ii) Air Quality Monitoring by National Environmental Engineering Research Institute (NEERI)

NEERI, an Institute under Council of Scientific and Industrial Research (CSIR), was involved since 1977-78 in air quality monitoring in ten cities for an initial period of ten years.

CPCB agreed (November 1989) to collaborate with NEERI, at the latter's request (May 1988), for monitoring of certain sophisticated parameters in air through NEERI's existing network of air quality monitoring stations located in ten metropolitan cities. As these stations were already in existence supported by laboratory facilities, only operation and maintenance cost of stations was to be borne by CPCB.

In November 1989, a proposal for monitoring six parameters in addition to the routine parameters like Sulphur dioxide, Nitrogen dioxide and Suspended Particulate Matter (SO₂, NO₂ and SMP) was agreed to for a total cost of Rs 7.10 lakhs for 30 stations (*i.e.* Rs 0.71 lakh per city for a period of six months from October 1989 to March 1990). A sum of Rs 7.73 lakhs (revised) was released to NEERI in January 1990.

In July 1990, first data from NEERI (NAAQM) stations were received and following observations made:

The data was reported only for six instead of 10 cities.

Out of the six cities some stations started functioning in December 1989 and some in January and February 1990,

Results of particle size distribution in the ambient air had not been reported.

Four meteorological data had not been reported.

This was brought to the notice of NEERI in August 1990. Upto February 1991 no data was received from any station. An inspection of the three NEERI operated stations located in Kanpur revealed *inter alia* that though monitoring of hydro carbons, heavy metals, H₂S, NH₃ and particulate matter was being conducted by the stations, results of these parameters were not being provided to CPCB.

Upto August 1991, NEERI was not monitoring according to the parameters agreed upon and CPCB felt the necessity of withdrawing the project from NEERI in case it failed to monitor the special parameters from October 1991. However, despite non-monitoring of these parameters, Rs. 14.53 lakhs was also sanctioned in March 1992 without receiving further reports, details of expenditure including the expenditure incurred towards purchase of chemicals and glassware etc, mainly to avoid lapse of funds.

The data furnished by NEERI was also not incorporated in any of the statistical reports prepared so far (August 1992). All the NEERI stations were in the cities where the State Boards were also conducting monitoring of routine parameters *i.e.* SO₂, NO₂ and SPM. As NEERI was not sending any data for special/sophisticated parameters the work being conducted by the NEERI stations was a replication of the State Boards' activities, which amounted to a redundant expenditure of Rs 22.26 lakhs.

(iii) Air quality monitoring in metropolitan cities

European Economic Community (EEC) signed a Marginal Cost Sharing Contract in July 1985 with CPCB for a research project titled 'Air Pollution Monitoring in relation to human health in metropolitan cities in India' for an estimated cost of 383600 ECU (European Currency Units) equivalent to Rs 35.98 lakhs.

During the project period, two continuous multiparameter monitoring stations were to be procured and installed to assess the level of atmospheric pollutants. The whole project was proposed for a duration of three and half years and the technical programme was to be conducted in three phases *viz* planning and installation, collection of data and data processing and evaluation. Practical utility of the project was to study epidemiological factors responsible for some common chronic diseases in the areas which could provide the scientific basis for health status of such population.

The initially proposed project cost was enhanced to 925,600 ECU (Rs. 86.82 lakhs) in November 1986 and the total number of multiparameters measuring stations was also increased from two to five. Later, in January 1988, cost of the project was reduced to 650,000 ECU

(Rs. 60.97 lakhs) and the multiparameters measuring stations was also reduced to three CPCB decided to install two stations in Delhi at Siri Fort and Shahdara and the third at Calcutta.

Three stations were received in CPCB during August 1988, one of which was found damaged and declared unfit for installation. One station at Calcutta could not, therefore, be installed. CPCB stated (May 1992) that the supplier at the time of despatch replaced the single phase uninterrupted power supply (UPS) system to three phase UPS system without intimating them.

The stations at Siri Fort and Shahdara, even after installation in September 1988, could not be put into operation due to non availability of three phase power supply. The contractor who was to install the stations also did not turn up till November 1989. The stations were put into operation in February 1990. But, these continued to face software problems and data collected could not be utilised. Experts from EEC visited India in February and July 1990 to sort out the problems identified with the system. Due to power shortage, CPCB decided to shift the Shahdara station in April 1991. The station at a new place is yet to be commissioned.

It was evident from the above that the project was neither run on schedule nor the purpose of installation of the stations could be served due to communication gap between EEC, the supplier and the end user which resulted in the equipment proposed and provided for not matching the requirements.

The Ministry stated (November 1992) that drawings etc. had been prepared for construction of the damaged station lying in CPCB premises for which the work was yet to start.

(iv) Health status of population around Air Quality Monitoring Stations

Under the EEC bilateral project, it was also envisaged that as part of the project, health survey would be conducted around these monitoring stations which would throw light on the epidemiological factors responsible for some chronic diseases generally prevalent in the areas. This would provide scientific basis for health status of such population. Administrative approval to conduct health survey in three locations under this project for a total cost of Rs 2.64 lakhs was accorded in January 1988 with project duration from December 1988 to March 1990. The study was started from May 1989.

As per Memorandum Of Understanding (MOU) between CPCB and All India Institute of Medical Sciences (AIIMS), survey of health status of the people staying nearby two automatic air monitoring stations (Siri Fort and Shahdara) was to be conducted by a professor of AIIMS from the date of issue of sanction.

The 1st and 2nd phase reports, which envisaged survey for general health and isolation of persons with disorders, were submitted together by

AIIMS in October 1990. However, the project coordinator (CPCB) was not satisfied and felt that there was no correlation between air quality data (collected by CPCW) and health data (collected by AIIMS) because of non functioning of the monitoring stations.

It was also noticed that the survey conducted at Siri Fort area was for lesser numbers than that conducted at Shahdara area. Further, it was pointed out that there was no proper mention about disease pattern surveyed due to ambient air pollution or due to socio-economic conditions and the death history of persons was not indicative of whether death occurred due to infectious diseases, cancer or cardiovascular disease etc. The aspects of mental status of a person was also not covered under this survey of both the locations.

AIIMS filed a supplementary report for phases I and II and stated that it was very difficult at that juncture to point out the specific problems attributed by the air pollutants; hence no definite measure of protection against those diseases could be planned. It was also suggested in that report that a regular detection of ambient air pollutants and pathogens and their exact correlation with disease pattern was necessary. CPCB extended the programme upto September 1991 at the request of AIIMS without any further cost.

No action had been taken (January 1993) on the report on the project prepared by AIIMS and received in CPCB in April 1992.

The project which was to establish causes for general health problems of the urban population on the basis of air pollution data did not succeed as the monitoring station could not be established in time. The expenditure of Rs 3.67 lakhs did not yield and benefit.

4.1.10 Monitoring of Indian Coastal Water

(i) In the Expenditure Review meeting held in August 1985, the Ministry desired CPCB to initiate action on prevention of coastal pollution. CPCB was asked to prepare a plan of action for approval prior to preparation of the project proposal. The various State Boards of the coastal States were requested to forward project proposals (for coastal monitoring) to CPCB to enable formulation of an integrated system of monitoring along 6000 kms of the coast line.

A project named 'Monitoring of Indian Coastal Waters' was approved by the Ministry and sanction for Rs 108 lakhs was conveyed in February 1987. The proposal was to establish a monitoring net work covering the critical stretches as already identified in the coastal survey conducted by CPCB. Justification for the proposal was that three out of four largest metropolitan cities with increasing population were situated on the coast and a sizeable population was dependent on fishing and marine activities near the shore. Also, if the resources that were available at the interface of

land and water were to be utilised on a sustainable basis, action had to be initiated to understand the physio-chemical and biological characteristics of coastal waters and the implications of indiscriminate exploitation of nature.

The project was designed for a period of three and a half years initially. Nine agencies viz. the State Boards of Gujarat, Maharashtra, Karnataka, Kerala and Andhra Pradesh, Zoological Survey of India, Madras and the sectional/regional offices of CPCB located in Goa, Pondicherry and Calcutta were identified as the executing agencies. National Institute of Oceanography (NIO), Goa was to act as an advisory body for this programme and for overall co-ordination. Department of Ocean Development (DOD) and CPCB were the nodal agencies. Each executing agency had to send quarterly monitoring data and half yearly and annual reports to CPCW, NIO and DOD to get further directions/feed back for effective data collection, compilation and presentation. The final reports of the complete monitoring of specific stretches were to be supplied by September, 1989 so that a concise report of the State of Indian coast line would be prepared by both CPCB and NIO, after necessary processing which was to be ready by end of December 1989.

Under this project a network of 173 inland, coastal, off-shore and high-sea monitoring stations were established to be monitored by the respective State Boards. The zonal office of CPCB at Calcutta was, however, entrusted with monitoring of the 24 stations in Orissa and West Bengal.

As per project document, the sampling had to be done once in three months for the coastal areas. In case of estuaries, sampling was to be done once in two months if the opening was shallow and one full tidal cycle of 13 hours had to be covered for a flood channel or effluent channel. Each station had to monitor the coastal water for 24 specified parameters.

There were delays in communicating the data to CPCB/NIO as under:

<i>Name of Agency</i>	<i>Data not communicated</i>
Gujarat Board	April 1990 onwards i.e. II, III and IV rounds of 1991 and Ist round of 1992.
Maharashtra Board	From October 1991 onwards i.e. IV round of 1991 and Ist round of 1992.
Kerala Board	From January 1992 onwards.
Tamil Nadu Board	From April 1990 onwards.
Zonal Office, Calcutta	From April 1991 onwards i.e. II, III, IV round in 1991 and Ist round of 1992

It was noticed that monitoring by the Tamil Nadu Board was inadequate. Data collected from the monitoring network were also not being communicated to CPCB/NIO in time. Meaningful analysis was not possible for incorporation in the report.

Against the sanctioned amount of Rs.108 lakhs, the Ministry released Rs. 115 lakhs upto March 1992 without modifying the original sanction

issued in February 1987. Further, out of Rs 115 lakhs received, CPCB had distributed only a sum of Rs 88.36 lakhs to the executing agencies. Payment for 1991-92 was not released to the executing agencies because bills for that year had not been submitted. CPCB also did not obtain utilisation certificates, as under, for the funds released to the executing agencies:

Name of the Agency	Utilisation certificate outstanding since
Tamil Nadu Board	1987-88
Zonal Office, Calcutta	1988-89
Kerala Board	1990-91
Gujarat Board	1990-91
Maharashtra Board	1991-92

The project which was initially to be completed by 1990 had been extended till March 1992 reportedly due to bad weather conditions, high cost on hiring of vessels and inadequate funds etc. The ministry decided not to continue with the programme after April 1992 due to financial constraints.

The project thus failed to bear any result even after six years. Even though CPCB Zonal Office, Calcutta had made large contribution, the Coastal Water Quality map had not been prepared so far (August 1992). The 'Concise report of the State of Indian Coast line' also remained to be prepared (August 1992.)

The Ministry stated (November 1992) that CPCB has developed a software for analysis of coastal data and the data are under analysis for preparation of report on coastal water quality.

(ii) Coastal Ocean Monitoring And Prediction System (COMAPS)

Department of Ocean Development (DOD) started a project entitled Survey of Environmental Pollutants in Seas around India' in 1986-87 which was mainly aimed at seasonal monitoring/measurement of pollution in Marine Coastal areas upto 5 kms off-shore along the country's entire coastline. DOD selected (July 1986) three executing agencies one of which was the Zonal office of CPCB at Calcutta. Based on a project proposal titled 'Monitoring of Marine Pollution in Territorial Waters of India' (along the East Coast) submitted by the zonal office in March 1988, DOD sanctioned the project and conveyed approval of Rs 15.88 lakhs, including Rs 12 lakhs for equipment, in January 1989. Duration of the project was, however, not mentioned in the sanction of DOD.

The main objectives of the project were to initiate and conduct a systematic monitoring of the territorial waters of the east coast beyond 5

kms off-shore, after establishing a permanent marine pollution monitoring station with adequate capabilities of field and laboratory works.

The monitoring was to be carried out at regular intervals and in terms of selected water quality parameters to determine nature and extent of pollution. In December 1989, DOD decided to establish its Centre for Marine Environmental Studies at NIO Regional Centre, Bombay. The Zonal Office, CPCB, Calcutta was one of the units among the eleven units identified for undertaking the work on Marine Pollution Monitoring and Modelling of pathway and fluxes of exotic chemical elements into sediments, biological systems and the seas. These eleven units were to carry out monitoring activities according to a specified protocol. DOD released a total grant of Rs 21.60 lakhs (excluding for manpower), in March 1989 and July 1990 for all the above mentioned activities.

The Steering Committee of DOD reviewed and modified the project in June 1990 and redefined the length and width of study stretches. The width of stretch was also increased to 25 kms off shore instead of that from 5 kms to 22.5 kms off-shore and renamed it as "Coastal Monitoring and Prediction System (COMAPS)".

Out of 29 laboratory equipment, Zonal Office, CPCB, Calcutta could procure only one equipment 'Backman Liquid Scientillation Counter' costing Rs 5.36 lakhs upto April 1991 which was still awaiting commissioning (August 1992) due to non-availability of certificate from Bhabha Atomic Research Centre (BARC).

As per Utilisation Certificate for the period upto March 1992, Rs 4.04 lakhs had been spent on equipment in excess of the funds received for that purpose under the project.

4.1.11 Listing of pollution sources

CPCB had prepared an industry inventory in 1984 to assess pollution status in major and medium polluting industries. During the Seventh Plan period the status reports on Class I and Class II cities were also prepared. With rapid industrial development, CPCB felt it essential to update the inventory every five years. Further, the earlier inventory prepared in 1984 did not have information on the quantum of pollutants released by the industries, which was essential for identification of hot spots in the country. Also, with introduction of Air Act 1981, a similar inventory for air polluting industries had become essential.

In June 1987, a reorganisation plan was prepared under which CPCB was to complete, by 1990, inventorisation of all major and medium industries for air and water pollution, upgradation of sanitation state in Class I and Class II cities and status of vehicular pollution in metropolitan cities. So far (August 1992) CPCB could neither update

the inventory nor make complete listing of all major, medium and small scale industries which were relevant to air and water pollution due to lack of response and timely supply of information from the State Boards.

The Ministry stated (November 1992) that CPCB had decided to entrust the work with Central Statistical Organisation as the infrastructure available with CPCB was not adequate to collect the information.

4.1.12 Laboratory development-mobile laboratories

CPCB had six zonal offices at Calcutta, Baroda, Shillong, Kanpur, Chandigarh and Bangalore. Mobile laboratories for surveillance, planning and control of pollution were already provided at Calcutta, Baroda and Kanpur. For mobile laboratories at the remaining zonal offices at Bangalore, Chandigarh and Shillong, three chassis were received in June 1990 at a cost of Rs 8.90 lakhs. Subsequently, two chassis were proposed to be used for remounting the GTZ Automatic Air Quality Monitoring Systems (AAQMS) since the chassis on which these were now mounted were not able to take the load, and the third one was proposed to be given to the Rajasthan Board. All the three chassis however are still lying idle (November 1992).

The cost of equipment already procured for the mobile laboratories (excluding the chassis) worked out to Rs 16.13 lakhs.

Thus, the monitoring and survey activities remained static even after an expenditure of Rs 25.03 lakhs. CPCB stated (August 1992) that the (unmounted) equipment were in use in the stationary laboratory at the headquarters and there were some constraints but the work schedule of CPCB was usually not hampered. The statement is not tenable as the equipment and the chassis were procured for mobile laboratories and not for use at headquarters. It was also stated by CPCB that two chassis would be utilised for AAQMS and one would be donated to the State Board which requested for it alongwith their detailed plan for fabricating the same. Obviously, the expenditure was incurred without proper assessment of the need and preparation for use of the chassis and the laboratory equipment.

4.1.13 Finance and Accounts

CPCB was fully funded by the Ministry. Grants received and expenditure incurred during the period 1985-92 were as shown below:

Year	Grants received under plan	Expenditure incurred under plan	Grants received under Non-plan	Expenditure incurred under Non-plan (Rs. in Lakhs)
1	2	3	4	5
1985-86	120.00	101.05	80.38	80.80

1	2	3	4	5
1986-87	157.00	161.47	95.00	100.52
1987-88	212.00	217.13	110.00	115.40
1988-89	326.50	304.32	140.00	141.11
1989-90	370.00	379.04	141.90	143.87
1990-91	250.00	246.89	418.00	425.20
1991-92	250.00	257.70	439.00	415.18

In their report, the statutory auditors pointed out, in September 1986 and August 1988, that the accounts of CPCB did not reflect the undermentioned transactions:

Brief particulars	Amount involved	Year of account	Exhibition in the accounts (Rs. in lakhs)
Funds received from European Economic Community (EEC)	28.40	1985-86	Not exhibited in accounts; the amount was returned to EEC during January 1987 and June 1988.
Payments of equity capital to Tamil Nadu Leather Development Corporation (TALCO)	10.00	1985-86	Not exhibited in any of the accounts

CPCB had received equipment and instruments valued at Rs. 4819.43 lakhs from foreign countries under international collaborative projects. However, value of such assets was not being exhibited and included in the annual accounts and to that extent the accounts did not reveal complete status of the assets. Further, there was no supporting asset register for the assets worth Rs. 530.44 lakhs, excluding depreciation, reflected in the annual accounts of 1990-91. CPCB stated that no such asset register was being maintained.

The statutory auditors in their report of November 1991 had commented that the procedure for physical verification of assets was not adequate. No action was taken on this report.

Though CPCB has spend substantial amount on acquisition of equipment, sound procedure for accounting and custody of stores was not being followed.

Diversion of funds

Ganga Project Directorate (GPD) provided CPCB Rs. 209.20 lakhs for monitoring of Ganga Water under Ganga Action Plan. CPCB was required to utilise the funds for use in establishment of automatic water quality monitoring stations on river Ganga and pending requirement that amount was to be kept in an interest bearing account. During 1990-91 and 1991-92, CPCB utilised an amount of Rs. 60 lakhs for other purposes. CPCB did **not also invest** the funds in short term deposit through which interest to an extent of Rs. 6.05 lakhs could have been earned. This was not only a diversion of funds but also a loss to the project. CPCB at the close of 1991-92 had an unutilised balance of Rs. 46.23 lakhs.

4.1.14 Materials management

Improper maintenance of records

CPCB had not manualised the procedure in respect of acquisition, custody and account of stores articles. The procedures prescribed in General Financial Rules (GFR) were stated to be followed in this regard. No consolidated records were maintained for receipt and issues of dead stock and other stores, which was in contravention to Rule 112 of GFR. Purchases made for the Zonal/Sectional offices were also issued without keeping any record. No separate assets/dead stock registers were maintained at headquarters in respect of Zonal/Sectional offices. CPCB was also not aware of the assets created out of grants received through sponsored/collaborative projects.

Extra outflow of foreign exchange

Under the financial rules, all contracts for purchases involving import of materials from abroad should as a rule provide for purchases on FOB basis and full consideration should be given by the competent authority to the element of foreign exchange involved therein and least expenditure on foreign exchange should be preferred. It was, however, observed from the purchase cases that equipment/instruments had been imported on CIF basis thus resulting in avoidable outflow of foreign exchange. A test check of import cases revealed that the foreign exchange outflow on this account amounted to Rs. 3.39 lakhs. CPCB accepted the facts (May 1992).

Transfer of assets and disposal

It was observed that CPCB had transferred assets created out of Government grants to the various State Boards without permission from the Government of India which was irregular since the assets belonged to the latter at the time of closure of its Zonal and Sectional Offices in the respective States. Recently assets worth Rs. 6.11 lakhs and Rs. 4.43 lakhs were handed over to the State/UT Boards from the zonal office at Chandigarh and Pondicherry.

Equipment lying out of order

Equipment worth Rs. 19.95 lakhs were lying out of order since 1989. In two cases involving Rs. 4.44 lakhs these were still under their guarantee period but no action had been taken to get them replaced/ repaired.

4.1.15 Execution of works

CPCB was allotted in April 1983 a piece of land measuring 1.51 hectares by Delhi Development Authority (DDA) at Shahdara, Delhi for its building at a cost of Rs. 22.38 lakhs. The Ministry accorded expenditure sanction for Rs. 3.28 crores for construction of building complex during December 1986 and July 1988, CPCB, however, spent Rs. 3.57 crores on the work. The excess expenditure was yet to be regularised.

• Award of original work could not be examined in the absence of comparative statements of evaluation of tenders.

Construction of the main building was completed in January 1990. The process of shifting of the office to the new complex commenced from September 1989. The contractor was allowed initially a period of two years (August 1986 to August 1988) for completion of the job. However, extensions of over 17 months was granted without levy of compensation. The contractor desired the extension on the following grounds:

- (i) Change in the scope of work,
- (ii) Delay in sanctioning additional work, and
- (iii) Delay in decision relating to external works.

• CPCB accepted the hindrances as explained by the contractor. Escalation paid to the contractor for the period of delay amounted to Rs. 19.48 lakhs.

CPCB in its judgement deleted certain items of work from the scope of the job which amounted to Rs. 33.64 lakhs *i.e.* more than 10 per cent of the items awarded to the lowest contractor. Since CPCB was not in a position to produce the comparative statement of the original tenders evaluated for working out the rates of the lowest tenderer, it could not be ascertained if deletion or substitution had vitiated the tendering process.

During execution, the contractor was given benefit of 12.29 MT of steel over and above the approved wastages. This quantity was said to have been consumed in rolling although no rolling was required because the steel was supplied as a finished product. Thus amounting to undue benefit of Rs. 1.22 lakhs to the contractor.

CPCB had to procure two transformers for the electrical sub-station at the risk and cost of the electrical contractor. Difference between cost paid (Rs. 4.54 lakhs) and tendered cost (Rs. 2.58 lakhs) was recoverable

from the electrical contractor. However, the Arbitrators had disallowed the claims since the correct clause was not enforced by CPCB.

CPCB also could not shift to the new premises and had to pay RS. 6.49 lakhs towards rent for the period April 1989 to August 1989.

Thus, in view of the facts stated above, CPCB had to incur additional expenditure of Rs. 29.15 lakhs on account of inadequate planning, slackness in supervision and non-enforcement of contract clauses at various stages of the progress of work.

The Ministry acknowledged (November 1992) that the original comparative statement was not available and that the wrong clause had been quoted in the letter to the contractor while procuring transformers. The Ministry maintained that the contractor was allowed a rolling margin in the consumption of steel. However, it was observed in audit that steel was supplied in finished form and hence no rolling was required.

4.1.16 Library and publication

Overstocking of Publications

18129 copies of 'Comprehensive Industry Documents (COINDS), priced Rs. 9.81 lakhs were lying in stores. In addition, 24828 copies of various publications priced Rs. 18.00 lakhs had also been lying in the store from 1978-79 to 1990-91 as indicated below:

Name of series of Publication	Quantity lying in store (nos.)	Total price of publication lying in store (Rs. in lakhs)
CUPS	3710	1.88
PPROBES	10069	4.14
ADSORBS	6766	10.10
COPOCS	1648	0.86
LATS	440	0.13
MINARS	2195	0.89
	24828	18.00

The Ministry stated in (November 1992) that the sale was low due to inadequate advertisement and lack of awareness among the general masses about the publications. However, in future publicity would be given in newspapers to encounter such problems.

Missing library books

It was observed that 349 library books had been found missing during physical verification conducted for the year 1988-89. Cost of 243 books was Rs. 1.42 lakhs and cost of remaining 96 books was not available with CPCB.

The Ministry stated (November 1992) that suitable action would be taken to trace out the missing books failing which action to write-off would be initiated.

APPENDIX II

Sulphur Dioxide Emissions Using Various Crude Mixes at MR

Sl. No.	Process	Fuel consumption MT/hr	Case-1	Case-2	Case-3	Case-4
			50 BH : 50 Imp 'S' in IFO=0.6% wt 'S' in gas=0.01% wt SO ₂ (Kg/hr)	100% BH 'S' in IFO=0.6% 'S' in gas=Traces SO ₂ (Kg/hr)	100% Imp 'S' in IFO=4.4%, 'S' in gas=0.01% SO ₂ (Kg/hr)	50% BH, 50% Imp 100% Imp HVGO in FCC feed (S=2.9% wf) SO ₂ (Kg/hr)
1.	AVU (Atmospheric Vacuum Unit)					
	Liquid fuel	11.6	139	143	1007	139
	Gaseous fuel	2.90	0.6	—	0.2	—
2.	VBU (Viscosity Breaking Unit)					
	Liquid fuel	2.85	34	34	251	34
	Gaseous fuel	0.71	0.14	—	—	—
3.	FCCU (Fluidised Catalytic Cracking)					
	Liquid fuel	0.8	10	10	70	10
	Gaseous fuel (CH greater)	1.000	0.2	—	0.5	—
4.	CO Boiler in FCCU coke producer, MT/hr.	varies with feed	324*	53	439*	439*
5.	Thermal Power Station (TPS)					
	Liquid fuel					
	Gaseous fuel	13.7	164	164	1205	164
		1.1	0.22	—	0.22	—

* For Case-1 emission level of 324 is based on actual data.

For Case-2, 3 and 4 the emission level has been evaluated based on change in the Continuous Catalytic Regeneration (CCR) value and 'S' fuel in FCCU feed.

	Case-1		Case-2		Case-3		Case-4	
	50% BH : 50% Imp		100% BH		100% Imp		50% BH : 50% Imp	
	Total feed kg/hr	SO ₂ emission kg/hr	Feed kg/hr	SO ₂ kg/hr	Feed kg/hr	SO ₂ kg/hr	FCC : 100% Imp FCC feed : 1 MMTPA	
6. Sulphur Recovery Unit (Feed containing 74% H ₂ S)	605	114	114	Nil	601	113		113
7. Bitumen Blowing Unit								
Fuel liquid	0.774	9	Nil	Nil	774	68		8
Flare		65		289		155		65
TOTAL		859		693		3145		972

BASIS

Crude : Bombay High S% : 0.3
 Imported S% : 2.85
 (Arab heavy)

Note

1. In case natural gas is used instead of IFO, SO₂ emission will reduce by 345 kg/hr in each case.
2. If Hydrocracker is included in the process scheme of Mathura Refinery, SO₂ emissions will be about 670 kg/hr with 50% BH : 50% Imp.

APPENDIX III

IN THE SUPREME COURT OF INDIA

Civil Original Jurisdiction

Writ Petition No. 13381/84

In the matter of:—

M.C. Mehta Petitioner

Vs.

Union of India Respondent

Affidavit of the Managing Director, U.P. State Industrial Development Corporation Ltd. in pursuance of the Orders of the Hon'ble. Court dated 11.2.1994 passed in the above matter.

I, Jagan Mathew s/o Shri Iype Mathews, Managing Director, U.P.S.I.D.C. Ltd. do hereby solemnly affirm and state as under:—

1. That I have received a copy of the Order dated 11:2.94 through M/s. Manoj Swarup & Co. Advocates who are also looking after some of the cases of the UPSIDC.

2. That I specifically perused the directions contained in the order dt. 11.2.94 issued by this Hon'ble Court to the U.P. State Industrial Corporation Ltd. through its Managing Director and I have to submit as under regarding the abovesaid directions:—

(i) That the deponent is not aware as to how much land is actually required for the foundries/industries located within the Taj Trapezium. It is therefore prayed that all these industries/foundries who required the land be directed to submit their requests to UPSIDC.

(ii) However, it present U.P.S.I.D.C. Ltd., has some developed and undeveloped land available in the Districts Mathura, Aligarh, *i.e.* outside the Trapezium, which U.P.S.I.D.C. Ltd. is ready to allot to the applicants immediately on the terms and conditions attached herewith as *Annexure I*. A chart showing the details of the area, its distance from Agra, its development stage etc. is also annexed with this affidavit as *Annexure II*.

3. That besides above land U.P.S.I.D.C. Ltd., has also fully developed land for installation of the Industries within the Taj Trapezium in the Districts Mathura and Firozabad. The chart showing the position, number

of plots their total area, location and infrastructure etc. is annexed as *Annexure III* to this affidavit.

4. That in obedience of this Hon'ble Court's order and in larger public interest U.P. State Industrial Development Corporation Ltd., is ready to give possession of this. Land to the allottees against payment of 10% of the total cost of the plot so that they can start construction activities immediately. The rest of the terms and conditions are as mentioned in the *Annexure I* to this affidavit.

5. That as an organisation involved in development of Industrial Area, UPSIDC has been conscious of the fact of pollution created by the various Industries and has always been encouraging to provide alternative fuel to the Industries to check pollution. The studies made so far by UPSIDC Ltd. in respect of providing alternative fuel to the Industries creating pollution inside or outside the Taj Trapezium, indicate that natural gas is a safe and pollution free fuel for industries in this region.

6. That in the past also due to the efforts of UPSIDC Ltd. Ministry of Petroleum, has directed Gas Authority of India to supply the required Gas to UPSIDC for supplying the same to the industries in Ferozabad, Agra Region for providing a cleaner environment. Copy of the letter of the then Secretary, Ministry of Petroleum and Natural Gas is annexed as *Annexure IV* to this Affidavit.

7. That there is proposal that Hazira Bijaipur Jagdishpur Pipe Line carrying natural gas will pass through a place around 50 to 60 Kms. from Agra. UPSIDC has been making efforts for taking up a project for distribution of natural gas to the industries in an around Agra and Ferozabad to replace coal etc. as fuel by natural gas to the industries in and around Agra and Ferozabad to replace coal as fuel by natural gas in order to stop damage done by pollutants, which are generated by the Industries due to usage of coal.

8. That UPSIDC is still willing to undertake the activities of supply to Gas within the Taj Trapezium with the financial assistance of the State Govt. in case GAIL is ready to take natural gas available at the city gate.

9. That further if Gas Authority of India is directed to give the price of natural gas and other term and conditions for the supply of the said gas, to the UPSIDC, the UPSIDC is ready and willing to make all the necessary suitable arrangements as a part of their development activity of the area which they are offering for allotment under paragraph 2, mentioned above.

10. That the contents of this paragraphs are true to my information

received from the record of the case and nothing material has been concealed.

Verified at New Delhi on 3rd March, 1994.

— DEPONENT

APPENDIX IV

STATEMENT OF OBSERVATIONS AND RECOMMENDATIONS

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
1.	120	Environment and Forests	<p>The need for prevention and control of environmental pollution had engaged serious attention of the country atleast since the 1970's. In March, 1974 Parliament enacted the Water (Prevention and Control of Pollution), Act, which required Central Government to constitute a Board to be called "Central Board for the Prevention and Control of Water Pollution" under the then Ministry of Works and Housing to perform the functions assigned the exercising the powers conferred under this Act. The Board was subsequently brought under the Ministry of Environment and Forests in 1981. Consequent upon enactment of Air (Prevention and Control of Pollution) Act, 1981, the Board was entrusted with, additional responsibilities from March, 1981 in regard to air pollution. It was renamed as Central Pollution Control Board (CPCB) in October, 1988 and noise pollution also was brought under the ambit of its activities. The Audit Para is based on test check of activities of the Central Pollution Control Board during the Seventh Five Year Plan (1985—1990) and the Annual Plans for 1990-91 and 1991-92. The various aspects arising out of the examination of the Audit Paragraph are dealt within the succeeding paragraphs.</p>
2.	121	Environment and Forests	<p>The Central Pollution Control Board is the national apex body aimed at prevention and control of water and air pollution. It coordinates activities of the State Boards in nation-wide programmes of water and air pollution control. As per the provisions of Water Act, besides Chairman, Member Secretary</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			<p>and five members each representing Central Government and State Boards. CPCB was also to comprise of three non-officials representing interests of Agriculture, Fisheries, Industry, Trade or any other interest and two members to represent Central Govt. Companies/ Corporations. The Board was last constituted on 2 December, 1991. The Committee are surprised to note that none of the three non-officials nominated by the Government belonged to the specified fields, but represented public health, media and technical education. Further, presently, apart from Chairman the Board consists of only six other members as against 17 members as per provisions of the Water Act. Referring to the present incomplete composition of the Board, the Ministry of Environment and Forests simply stated that the Ministry are taking necessary action for filling vacant posts. The Committee wonder as to how an incomplete Board could effectively supervise the pollution control activities at national level. The Committee regret to note the delay in filling up the vacancies in the Board and recommend that Government should take early action to complete the composition of the Board and ensure proper representation to eminent people from the relevant discipline as prescribed so that they can make useful contribution in prevention and control of pollution.</p>
3.	122	Environment and Forests	<p>The*Committee note that as on 31 March, 1992, CPCB had 83 scientific, 138 technical and 172 Ministerial staff agaist sanctioned strength of 94,186 and 205 respectively. Thus 21% of the sanctioned strength of scientific/ technical posts remained vacant. Explaining the reasons for vacancies lying unfilled for a considerable length of time, the representatives of the Ministry and the CPCB stated during evidence that after the reorganisation plan undertaken in 1987, the recruitment rules were</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			<p>required to be approved by the Ministry of Environment and Forests and the Department of Personnel and Training. While the Rules have been finalised by the Board and the Ministry, they are still awaiting clearance of the Department of Personnel and Training. The Committee consider the delay unfortunate and desire that Government should look into the matter so that the pollution control activities of the Board are not hampered due to non-availability of requisite scientific and technical personnel.</p>
4.	123	Environment and Forests	<p>As per the Water Act, 1974, and the Air Act, 1981, CPCB was required to lay down standards for quality of water and air. The CPCB directed its efforts towards development of Minimal National Standards (MINAS) only for trade effluents and sewages discharged. According to the Ministry of Environment and Forests, CPCB has so far formulated and laid down MINAS for 32 categories of industries (liquid effluent standards). Similarly, emission regulations were laid down in respect of 29 categories of industries and development of standards were stated to be in an advance stage of finalisation in respect of 18 categories of industries and expected to be finalised by 1994. The Committee would like to be informed of the progress made by CPCB in the development of standards in respect of 18 items which are expected to be completed in 1994.</p>
5.	124	Environment and Forests	<p>A disquieting feature observed by the Committee was that even though it was known that the standards developed by CPCB were not binding on the State Boards in terms of the provisions of the Water and Air Acts, no action was taken by the Ministry to make them legally mandatory on the State Boards. It was only on 19 May 1993, i.e. after the Audit paragraph appeared, that the Ministry of Environment and Forests <i>vide</i> their notification issued on 19 May,</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			<p>1993, made the Minimal National Standards (MINAS) legally binding on the State Boards. According to the Ministry, the State Boards have now been empowered to make the standards more stringent where situation so demands but they are not permitted to relax the standards. The Committee consider the delay unfortunate. They recommend that the CPCB should constantly monitor the standards developed by the State Boards and oversee the steps taken to ensure their enforcement.</p>
6.	125	Environment and Forests	<p>As part of water pollution control, it was decided to establish monitoring stations for monitoring quality of water every month with reference to 19 significant parameters, subsequently enlarged to 22. The monitoring data are sent to CPCB by the State Boards who are paid at a prescribed rate for each sample depending on the number of parameters. The Committee note that out of 480 Water Quality Monitoring stations established upto March 1992, 42 stations could not supply any data and remained non-operational for periods ranging from one to five years. These stations were not operational as the State Boards were not responsive to the request either to activate or to relocate these stations. Some of the stations sanctioned even three years back are still non-functional mainly due to the delay in identifying alternate sites. What has surprised the Committee is that even in the light of non-response, CPCB did not deem it necessary to issue directions to the State Boards under Section 18 of Water Act, 1974. The Committee, therefore, desire that the Ministry of Environment and Forests should look into the matter with a view to ensuring proper co-ordination between CPCB and the State Boards so that all the water monitoring stations are made operational and proper a monitoring is done about the quality of water.</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
7.	126	Environment and Forests	<p>The Global Environment Monitoring Scheme (GEMS) under World Health Organisation</p> <p>has a network of surface water quality stations all over the world, of which India is also a participating country with CPCB as the nodal co-ordinating agency. Each country is required to send water quality data on annual basis to WHO collaborating centre in Canada which is the central data depository. The Committee regret to note that the reports for the period from 1985 to 1987 were sent only in 1990. and for the period from 1988 to 1991 were sent after November, 1992. The report for 1992 has not been sent as yet. The Ministry have not offered any convincing explanation for the delays. The Committee recommend that CPCB should evolve a foolproof mechanism to ensure that in future that reports are sent regularly on annual basis so that the available advantages by participation in the scheme are made use of in time. The Committee would also like to be informed about the latest position in the submission of reports.</p>
8.	127	Environment and Forests	<p>A Memorandum of Understanding (MOU) on Environmental Cooperation was signed in January, 1988 between the Government of India and the Government of Netherlands and a project called "Biological Monitoring and Ecotoxicological Studies of river Yamuna" was prepared for carrying out a pilot study on the practicability of using biological parameters to evaluate the ecological quality of fresh water rivers in India. As per MOU, contribution of the Indian Government was to be Rs. 43.28 lakhs and the Netherlands Governments was to provide Rs. 950 lakhs in the form of export assistance, equipment, consultancy etc. The primary objective of the project was to develop a biomonitoring methodology to assess pollution load and to generate biological and chemical</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			<p>data on ecological systems in order to properly manage the rivers. The work was to be carried out in two phases jointly by CPCB and Industrial Toxicological Research Centre (ITRC), Lucknow. Mid-term evaluation reports submitted by a team of the Government of Netherlands in February and November, 1990, however, revealed that a substantial amount of expenditure in the first year had been incurred on manpower, purchase of vehicles etc. It further disclosed that the work plan was not completely carried out as projected, contractual obligation of ITRC was not well defined, CPCB had failed in eliciting involvement of ITRC and that the project was carried out without setting the strategy and was reduced to transfer of technology relevant to developed countries without taking into account the ground realities. The evaluation conducted in November, 1990 also pointed out that the main objective of creating early warning system and bioaccumulation monitoring had not been achieved. The Committee recommend that the reasons for the non-achievement of the objectives of the project should be enquired into and responsibility fixed for the lapses.</p>
9.	128	Environment and Forests	<p>As part of the Indo-Dutch bilateral collaborative programme, two water quality monitoring and sampling stations were also to be installed on river Yamuna in Delhi at Wazirabad (upstream) and Okhla (downstream) barrage. The objective of the project was to obtain a continuous insight into the basic parameters of the intake of water from Yamuna river for drinking purposes. The stations were installed during August, 1991. While the Wazirabad station functioned satisfactorily, Okhla station had to be closed as the extremely bad quality of water (sewage) was destructive of some of the measuring electrodes of the station besides being a health hazard to the operators and had to be shifted to Haiderpur (upstream) water</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			<p>works. The change of site resulted in delay in programme, non-monitoring of the pollution generated by the city and also an infructuous expenditure of Rs. 1.88 lakhs. The Ministry of Environment and Forests have attempted to justify their action by stating that the automatic water quality monitoring stations have been installed on experimental experimental basis to ascertain their suitability under Indian conditions. The Committee are not inclined to agree with this view. The fact that important considerations like quality of water, health hazards etc. had been overlooked by CPCE while selecting the site would clearly indicate that the precommissioning survey was totally inadequate. The Committee desire that the Ministry should thoroughly enquire into the reasons for inadequate survey and apprise them of the results.</p>
10.	129	Environment and Forests	<p>The Committee note that nine Automatic Water Quality Monitoring stations on selected points on the river Ganga were proposed to be set up as a research project of CPCB to determine the river quality on a continuous basis and for use of the data for water quality modelling and assessment of impact of sewage/treatment effluents plants. The Ganga Project Directorate provided Rs. 50 lakhs for the programme including installation of the proposed automatic monitoring stations. According to Audit, the programme which was to be completed by June, 1989 had not been completed till January, 1993 and the expenditure incurred thereon was yet to yield any benefit. The Ministry of Environment and Forests have stated that out of the nine stations, six have since been commissioned and an expenditure of Rs. 59.68 lakhs have been incurred on the same. In the light of the Audit objection that the system was yet to yield any benefit, the Committee desire the Ministry to look into the matter and ensure that the expenditure incurred was commensurate with the gains achieved and apprise the Committee of the progress made in completing the project.</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
11.	130	Environment and Forests	The Committee also feel concerned about the slow progress made in the implementation of Ganga Action Plan Phase I and II and desire that the matter should be looked into with a view to accelerating its progress.
12.	131	Environment and Forests	In order to ascertain the quality of river water consistent with human activities, CPCB planned to prepare an Action Plan to control pollution and maintain or restore the wholesomeness of rivers. In this connection comprehensive river basin studies were to be undertaken in respect of 14 major rivers by CPCB, out of which nine studies were to be completed and published between November, 1988 to December, 1991. The Committee regret to note that three of these studies are yet to be completed and reports in respect of six river basin studies have not been published so far. Similarly, on the basis of river basin studies, Action Plans for abatement of river water pollution were required to be prepared. In the action plan of CPCB for 1990-91, preparation of Action Plan for five major rivers was to be taken up. However, while Action Plans for three rivers were prepared belatedly, the Action Plan for two rivers were yet to be completed. The Committee take a serious view of the delays and desire that the Ministry should make concerted efforts to ensure that all river basin studies are completed and published and that the Action Plans are prepared expeditiously. The Committee would like to be apprised to the progress made in this direction and the steps taken for the implementation of the Action Plans.
13.	132	Environment and Forests	The Committee note that a project named "Monitoring of Indian Coastal Waters" was sanctioned by the Ministry in 1987 to establish a monitoring network covering the critical stretches of coastal waters with a view to preventing coastal pollution. Under this project, a network of 173 inland, coastal, off shore and high-sea monitoring stations were to be established

Sl. No.	Para No.	Ministry/ Department	Observations / Recommendations
			<p>and monitored by the respective State Boards. The project which was initially to be completed by 1990 had been extended till March, 1992 reportedly due to bad weather conditions, high cost of hiring of vessels, inadequate funds etc. Eventually the project was discontinued without completing the required rounds of monitoring after April, 1992 due to financial constraints. At the time of terminating the project, while the other executing agencies had completed 15-17 rounds of monitoring the Tamil Nadu Pollution Control Board had completed only 5 rounds. Still it was not proposed to undertake the balance monitoring now as it will not serve any useful purpose. The Committee take a serious view of the fact that even after the lapse of a period of six years and releasing funds of Rs. 115 lakhs against the sanctioned amount of Rs. 108 lakhs the project remained incomplete, what is more surprising is the fact that despite the inadequate monitoring, CPCB has prepared a software for an analysis of coastal data in order to prepare a Report on coastal water quality. The Committee wonder how the data which is not complete could be useful for preparing the Report on coastal water quality and recommend that the reasons for not completing the monitoring in full as required within the specified period and incurring an excess expenditure over the sanctioned amount be investigated and the Committee apprised of the outcome.</p>
14.	133	Environment and Forests	<p>The Committee note that in 1986-87, the Department of Ocean Development (DOD) started a project entitled "Survey of Environmental Pollution in Seas around India" which was aimed at seasonal monitoring/measurement of pollution in marine coastal areas upto 5 kms. off-shore along the country's entire coastline. The steering Committee of DOD reviewed and modified the project in June, 1990 and redefined the length and width of study stretches and renamed it as "Coastal</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			<p>Monitoring and Prediction System (COMPAS)". The Zonal Office, CPCB, Calcutta was one of the units among the eleven units identified for undertaking the work. Out of the 29 laboratory equipments, Zonal Office, CPCB, Calcutta could commission only one. The Committee regret to note that even after the lapse of more than 3 years, CPCB have not been able to complete even the commissioning of the equipments. They recommend that the Ministry should ensure that the Commissioning work of the equipment is expedited so that the work of monitoring of pollution of marine coastal areas can be taken up without any further delay.</p>
15.	134	Environment and Forests	<p>The Committee find that in January, 1991, the Ministry of Environment and Forests had identified 17 categories of industries that caused maximum pollution in the country and 1541 industrial units were asked through a Notification to instal pollution control equipments by 31 December, 1993 and bring down emissions in air and water to the standards prescribed. According to the information furnished by the Ministry to the Committee in December, 1993, 1003 of the 1541 units in the large and medium sector have provided the requisite pollution control equipments to comply with the standards and others are in the process of installing the same. The Ministry also stated that State Pollution Control Boards have been directed to monitor regularly the progress in these units and also to take strict action against the defaulting units. The Committee desire that concerted efforts should be made to persuade the remaining units also to comply with the standards and instal the requisite equipments so that extreme punitive action like closure of units, having social and economic ramifications, are avoided. They would like to be apprised of the latest position of compliance by the units including the Public</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			Sector Undertakings. The Committee would also like to be informed of the steps being taken to enforce standards in other polluting industries in addition to the 17 where they have been made mandatory.
16.	135	Environment and Forests	The Committee consider it imperative that while developing standards for the quality of water and air and enforcing them on industrial units necessary aid/technical advice is given to the industries/units particularly the small scale units in the installation of pollution control equipments. The Committee's attention in this connection had already been drawn to the complaints by such units that the State Boards were unable to provide the necessary help in the matter. The Committee, therefore desire that Government should look into the matter and taken necessary steps in extending all possible help to the units in complying with pollution control measures.
17.	136	-do-	The Committee note that in 1984, National Ambient Air Quality Monitoring (NAAQM) project was initiated by CPCB as a part of pollution management programme for which it identified three parameters for monitoring namely Sulphur Dioxide, Nitrogen Dioxide and suspended particulate matter. By March, 1992 CPCB established 290 stations in the country. For establishing of NAAQM stations, CPCB had incurred an expenditure of Rs. 261.63 lakhs during the Seventh Plan period (1985—90) and Rs. 176.45 lakhs during the years 1990-91 and 1991-92 out of its Annual Plans. Out of the 290 stations, 50 stations are not in operation because of delay in procurement of instruments, non-availability of trained persons on daily wages, access to public buildings and electricity connections etc. Significantly, CPCB had incurred expenditure amounting to Rs. 35 Lakhs on these stations. According to the Ministry, the State Boards have been asked to expedite the operation

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			<p>of these stations or refund the grants. The fact that CPCB have not been able to make the monitoring stations operative and secure the necessary data through the State Boards even after one to eight years of their setting up clearly indicates absence of proper monitoring and close cooperation between the CPCB and the State Boards. The Committee, therefore, desire that the Ministry should look into the matter and ensure that all the monitoring stations are made operative and the data generated thereon are analysed and effectively used in improving the quality of air.</p>
18.	137	Environment and Forests	<p>The threat caused by pollution to the world famous historical monuments in Agra-Mathura region particularly the Taj Mahal has over the years agitated the minds of the public at large. The Committee in this connection find that subsequent to the decision of the Government of India to set up a large oil refinery in the Mathura region to meet the petroleum products demands of the north-west region, apprehensions were raised about the possible adverse effects on the monuments in the Agra-Mathura region as a result of gaseous effluents to be discharged from the refinery. Taking this into consideration the Government of India constituted an expert Committee under the Chairmanship of Dr. S. Varadarajan on 16th July, 1974 to advise the project authorities on the measures to be taken for keeping the pollution effect to the absolute minimum. The Varadarajan Committee was not only to guide Mathura refinery project in planning and implementing effective pollution measures, but also to advise the Ministry in the pollution aspects of other ancillary and downstream units. The expert Committee while expressing its deep concern for the preservation of the priceless monuments in Agra, particularly the Taj Mahal made several recommendations for consideration of the Government with a view to reducing the existing level of pollution substantially and forestalling in future sources of</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			<p>pollution. It had also subsequently stated that there was urgent need for continuous study and the investigations so as to ensure prevention of monuments from exposure to further threats from pollutants or any other cause. Various other studies/surveys/committees have since then reported upon the matter. These included a series of reports of National Environmental Engineering Research Institute (NEERI) under the Council for Scientific and Industrial Research (CSIR), process and Product Development Central (PPDC), NML, M/S. TECHNECO, etc. A Joint Committee of Parliament on the Air (Prevention and Control of Pollution) Bill, 1978 under the Chairman of Dr. Karan Singh had also in their report, presented to the House on 18th May, 1979, dealt with the issue. The joint Committee were of the opinion that in order to save Taj Mahal and other monuments in Agra and Brij Mandal from the ill effects of air pollutants, the Government apart from taking urgent and effective steps for prevention of existing air pollutants from other sources in Agra as per recommendations of the expert committee should also look into the refinery problem afresh and examine the feasibility of shifting atleast the most polluting units of the refinery to the Etawah region.</p>
19.	138	Environment and forests	<p>The Committee note with grave concern that adequate steps were not taken by Government over the years despite several recommendations made by several Committees to effectively prevent and control pollution and preserve those historical monuments. As regards the current status, the Ministry of Environment & Forests identified the major polluting sources in Agra apart from emission from Mathura Refinery, foundry, rubber factory, engineering industries, chemical and other industries, motor vehicles etc. The Committee have been informed that based on the findings of the different studies/expert groups etc., an area in the form of a trapezium in and around Agra-</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			<p>Mathura region has been identified as environmentally sensitive air pollution protection area. For regulating the pollution from industrial growth in this area, industries have been broadly classified into three categories viz., (i) those to be prohibited to come up within the air pollution protection area; (ii) those which may be permitted to come within the area only with adequate environmental control measures; and (iii) industries that may be permitted to come up within the area. According to the Ministry, from the view point of pollution control the best desirable option will be to shift the polluting units from the area. However, since this has not happened the other alternatives were evolved in the form of a package of measures needed for pollution control in Agra. These included <i>inter-alia</i> (i) fiscal incentives and other benefits for shifting of the polluting units (ii) dedicated/uninterrupted power/gas supply to the industries/commercial activities to discourage the use of DG sets; (iii) priority for provision of clean fuel (LPG) to the residents of Agra from the Mathura Refinery; (iv) Use of battery/CNG operated vehicles within specified area of Agra; and (v) Construction of an outer ring road at Agra to divert the traffic from the three National Highways. The Committee agree with the point of view of taking a package of measures for pollution control as many of these industries were shifted from their original site to the newly constructed Foundry Nagar in Agra in the year 1975 onwards and further shifting of those industries will have grave social and economic consequences including mass unemployment of the people directly or indirectly dependent on these industries.</p>
20.	139	Environment and Forests	<p>In regard to supply of gas to industries located in Taj Trapezium area which is considered as one of the important measures to control air pollution, the</p>

Sl. No.	Para No.	Ministry / Department	Observations / Recommendations
			<p>Committee find that in reply to question in Parliament on 24 February, 1994 regarding extension of HBJ pipeline to Taj Trapezium area the Government have stated that it has not been considered feasible as allocation of gas along the HBJ are in excess of the availability of gas. In this connection the Committee find that as far back as August, 1989 the Ministry had directed GAIL to allot the required gas to the UPSIDC for Ferozabad-Agra region. The Committee regret to note that the commitment made four years back is not being fulfilled. The Committee are also surprised to find that there are different figures in regard to availability of gas. On the one hand according to ONGC the availability of gas was to the extent of 19.19 MMSCMD while according to GAIL the quantity of gas available for supply through HBJ pipeline is of the order of 15 MMSCMD against the requirement of about 23 MMSCMB. It is, to say the least, indicative of the reluctance to meet the commitment and the lack of coordination between various wings of Government. Considering the fact that the whole region has been identified as environmentally sensitive air pollution protection area, the Committee desire that the question of supplying of dedicated/uninterrupted gas and power on priority basis to the industries using coal/diesel needs to be urgently looked into. They also desire that in order to check vehicular pollution electrification of railway tracks in Taj Trapezium area and introduction of local electric trains service should be considered for expeditious implementation.</p>
21.	140	Environment and Forests	<p>In this connection the Committee's attention has also been drawn to a memorandum jointly signed and submitted by 103 Members of Parliament addressed to the Prime Minister pointing out the extent of threat of pollution to the Taj and urging to initiate certain specific</p>

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			measures included in the memorandum. The Committee desire that the same should be taken up for expeditious implementation.
22.	141	Environment and Forests	<p>The Committee have been informed that the impact of SO₂ (Sulphur dioxide) emission from Mathura Refinery to Taj (Agra) is about 1.0 ug/m³. They have also been informed that this impact can be further reduced by reduction of SO₂ emission from refinery by increasing the efficiency of S.R.U. and blending of high sulphur crude with low sulphur crude before distillation. In their inspection Report, NEERI have also suggested various measures which have the potential to abate the Sulphur Dioxide releases from the Mathura Refinery from the current levels by over 90 per cent. As pointed out by the Committee earlier, since Mathura Refinery is a major source of pollution, it is essential that immediate measures be taken to minimise pollution from the Refinery by installation of latest equipments and other measures. The Committee would, therefore, like to be informed of the action taken in this regard to reduce the impact of pollution caused by Mathura Refinery.</p>
23.	142	-do-	<p>As regards implementation of the package of measures, the Committee have been informed that a meeting was taken in July, 1993 by the Minister of Environment & Forests with the representatives of Indian Meteorological Department, Department of Tourism, Archaeological Survey of India, Ministry of Industry, Central Pollution Control Board, Indian Oil Corporation, National Environment Engineering Research Institute, etc. for identifying action points to be taken to control pollution in Agra-Mathura region. The Ministry of Environment & Forests assured the Committee that they are continuously monitoring developments for implementation of the suggestions made by different experts to</p>

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			<p>save the Taj Mahal. The Committee cannot remain contented merely with this assurance. They recommend that the package of measures and various other suggestions should be considered for expeditious implementation in a time-bound manner so that the historical important priceless monuments are adequately protected from further pollution. Considering the impact of air pollution on the Taj, the hazard to the health of human being in the region can be well imagined. The Committee would like to be informed of the specific actions taken on the package of measures evolved for pollution control in TPZ area.</p>
24.	143	Environment and Forests	<p>The Committee desire that Government should take measures on priority basis for pollution control in other areas which have been identified as environmentally sensitive from the historically important point of view or due to other considerations.</p>
25.	144	-do-	<p>The Committee note that a writ petition relating to pollution of Taj Mahal is currently pending before the Supreme Court. The Supreme Court in their orders dated 27th August, 1993 and 3 December, 1993 ordered immediate closure of 312 industrial units in Taj Trapezium including 212 Small Scale Factories in Agra for not having installed the necessary pollution control devices. These factories were mainly foundries, glass manufacturers and some chemical industries. The Committee have been informed that as on 17 February, 1994, 125 units had got installed suitable pollution control devices after the orders of Supreme Court and obtained suspension of the closure orders. The fact that several units had demonstrated their willingness to comply with the legal requirements after the intervention of Supreme Court clearly indicates that the pollution control authorities were earlier not very serious in eliciting cooperation from the units and</p>

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			<p>enforcing the pollution control measures in a persuasive and decisive manner. The Committee are unhappy over this. They desire that the Ministry should look into this matter for appropriate action plan for the implementation of various measures needed for pollution control throughout the country.</p>
26.	145	Environment and Forests	<p>Another aspect which engaged the attention of the Committee in the case of Agra was that the aggrieved units had pleaded before the Supreme Court that the State Pollution Control Boards did not possess the requisite competence and were not well-equipped to guide them in the installation of the necessary pollution control devices. The Committee regret to note that despite it being one of their functions, CPCB woefully failed in providing the requisite technical assistance to the State Board and the Industrial Units. The Committee consider this as an extremely important aspect requiring urgent attention of the Government. They recommend that while enforcing the pollution control law the authorities concerned should also be in a position to provide sufficient technical advice to the industrial units about the details of the suitable cost effective equipments which the Units could afford to instal. The Government should also formulate and implement an attractive package of fiscal incentives and disincentives to encourage the polluting units to instal pollution control devices.</p>
27.	146	-do-	<p>The Committee find that in 1984, CPCB prepared an industrial inventory to assess pollution status in major and medium polluting industries. With rapid industrial development, CPCB felt it essential to update the inventory every five years. In June, 1987 a recognition plan was prepared under which CPCB was to complete by 1990, inventorisation of all major and minor industries for Air and Water</p>

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			<p>Pollution, upgradation of sanitation state in Class I and Class II cities and status of vehicular pollution in metropolitan cities. Unfortunately, inventory reports for Punjab and Gujarat have only been prepared and published so far. The delay in publishing reports relating to the rest of the States has been attributed to lack of response and timely supply of information from the State Boards. This is, thus, yet another area requiring close cooperation and better co-ordination between CPCB and the State Boards. The Committee, therefore, desire that effective steps should be taken to update the inventory and complete listing of all major, medium and small scale industries which are relevant to air and water pollution with a view to making an overall scientific assessment of pollution status in the industries for taking up pollution control measures.</p>
28.	147	Environment and Forests	<p>The Committee note that CPCB, as part of the functions assigned to them by the Water and Air Acts, brought out 30 publications (25230 copies) of Comprehensive Industry Documents (COINDS) out of which 3234 copies were sold. 3867 copies were issued as complimentary and 18129 copies were lying in the stores. The Committee take a serious view of the fact that an expenditure of Rs. 18 lakhs was incurred for the publication of 25230 copies out of which only 7101 copies were issued with the remaining copies valuing Rs. 9.81 lakhs are lying unsold. Further the work of preparation of other COINDS entrusted to outside agencies which was to be completed during the Sixth Plan period continued till Eighth Five Year Plan even after incurring an expenditure of Rs. 34.80 lakhs as consultancy fee. All these are indicative of the inadequate assessment of the requirement of publications and absence of control and monitoring on the part of the CPCB on the work assigned to outside agencies. In the latter case, the Ministry</p>

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			<p>also failed to exercise control since the work was entrusted to the outside agency after their prior approval. The Committee, therefore, recommend that the matter should be enquired into and responsibility fixed for the lapses. The Ministry should also ensure that proper steps are taken by CPCB in dissemination of information.</p>
29.	148	Environment and Forests	<p>CPCB had sought to develop mobile laboratories for surveillance, planning and control of pollution under the Laboratory Development Programme. The Committee note that three chassis were received in June, 1990 incurring an expenditure of Rs. 25.03 lakhs for developing mobile laboratories at Bangalore, Chandigarh and Shillong offices. These remained idle for more than three years. Subsequently, it was decided that two chassis will be used for remounting the GTZ Automatic Air Quality Monitoring Systems and the third was proposed to be given to Rajasthan Board. However, as the Rajasthan Board managed to get a laboratory fabricated through other sources, it was sent to the CPCB Zonal Office (South) Bangalore for development of mobile laboratory. The Committee recommend that the reasons for procurement of equipment without undertaking proper assessment and its usage for purposes for which it was not intended should be thoroughly enquired and steps taken to obviate recurrence of such cases in future.</p>
30.	149	-do-	<p>The Committee are concerned to note that equipments and instruments worth Rs. 48.19 crores received from foreign countries under international collaborative projects were not reflected in the annual accounts of the Board. Further, no registers regarding assets worth more than rupees five crores were maintained. What has further disturbed the Committee is that even though the statutory auditors had pointed out as far back as November, 1991 that</p>

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31.	150	Environment and Forests	<p>the procedure for physical verification of assets was not adequate, no action was taken by CPCB to streamline the system. This, in the opinion of the Committee, clearly shows laxity on the part of the officers responsible for maintenance of the books of accounts. The Ministry have sought to explain that the entire system of accounting in this regard is under review and expected to be revamped during the year. The Committee are not satisfied by this explanation. They desire that the reasons for non-maintenance of proper accounts should be enquired into and responsibility fixed for the lapses. They would also like to be informed of the action taken to streamline the accounting systems and procedure.</p> <p>The Audit has pointed out several other irregularities in CPCB. Briefly they were, diversion by CPCB of the money granted by Ganga Project Directorate (GPD) for monitoring Ganga Water under Ganga Action Plan for other purposes; improper maintenance of records; incorrect procedure adopted in purchases resulting in avoidable outflow of foreign exchange (valuing Rs. 3.39 lakhs); irregular transfer and disposal of assets; failure to take action to get equipment repaired/replaced; additional expenditure incurred (Rs. 29.15 lakhs) in the execution of work on account of inadequate planning; slackness in supervision; non-enforcement of clauses in the contracts; missing of books in the library (costing Rs. 1.42 lakhs), etc. These cases have been described in detail elsewhere in the Report. The Committee deplore the laxity on the part of CPCB authorities which had resulted in the extra expenditure and occurrence of large scale irregularities. They recommend that the above mentioned cases should be thoroughly enquired into and responsibility fixed for the lapses. The Committee would like to be informed of the action taken in the matter.</p>

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32.	151	Environment and Forests	<p>The Committee find that during the period 1985-92, a total budget allocation of only Rs. 1685.50 lakhs, was made of which CPCB spent Rs. 1667.60 lakhs. The Committee desire that considering the magnitude of the problem steps should be taken by Government to ensure that adequate funds are allocated for environmental protection. The Ministry should also ensure that the funds provided to CPCB are efficiently utilised by it for the prevention and control of pollution.</p>
33.	152	-do-	<p>The facts stated in the foregoing paragraphs clearly identify certain vital areas relating to pollution control in general, and the functioning of Central Pollution Control Board, in particular requiring immediate governmental attention. Briefly these areas were, incomplete composition of CPCB, delay in making standards developed by CPCB mandatory, shortcomings in the functioning of monitoring stations and inadequacies in monitoring the quality of water, delay in completing river basin studies and preparation of Action Plans for abatement of river water pollution, delay in commissioning of equipments, and in making air quality stations operative, inadequacies in the enforcement of pollution control measures, need for providing aid/technical advice to industries/units particularly the small scale ones, delay in initiating steps to prevent and control pollution of Taj Mahal, lack of adequate co-ordination between CPCB and the State Pollution Control Boards etc. There had also been several financial, administrative and other irregularities. The Committee's attention has been drawn in this connection to Government of India's "Policy statement for abatement of Pollution 1992" which seeks to lay emphasis towards actual implementation. The Committee consider that the Central Pollution Control Board being the premier organisation on the</p>

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34.	153	Environment and Forests	<p>subject has an increasingly important role to play in prevention and control of pollution. The Committee, therefore, recommend that the facts stated in this Report should be thoroughly examined and appropriate remedial/corrective measures taken with a view to streamlining the functioning of the Central Pollution Control Board so that it acts not only as an advisory agency but also as an effective promotional body in abatement of pollution for preventing deterioration of the environment.</p> <p>The Committee note that the Ministry of Environment and Forests have initiated an exercise to integrate the various major Central Acts on environment with the object of protecting environment, implementing international decisions and consolidating and amending major Central Acts on the subject. The Committee have been informed that the Indian Law Institute who had been given that assignment have given their report which was now being examined by the Ministry. The Committee desire to be informed of the further progress made in the matter.</p>