
(1991) 08 KAR CK 0013

In the Karnataka High Court

Case No : Writ Petition No's. 2456 and 24197 of 1990 and 1112 and 6262 of 1991

Jana Jagruthi Samithi

APPELLANT

Vs

Union of India (UOI)

RESPONDENT

Date of Decision : 06-08-1991

Acts Referred:

Electricity (Supply) Act, 1948 — Section 29

Citation : (1991) ILR (Kar) 2939 : (1991) 2 KarLJ 524

Hon'ble Judges : Mohan, C.J.; Hanumanthappa, J

Bench : Division Bench

Advocate : Mohandas N. Hegde and P. Vishwanatha Shetty, for the Appellant; B.P. Holla, for R-1 and R-4, S. Shivaram, Government Advocate for R-2 and R-3, U.L. Narayana Rao and M.S. Padmarajaiah for R-5, for the Respondent

Final Decision : Dismissed

Judgement

Mohan, C.J.—In all these Writ Petitions which are filed as Public Interest Litigations, the petitioners are questioning the location of Mangalore Super Thermal Power Station as well as Ash Pond at Nandikur Village with the aid of USSR. The case of the petitioners is the Feasibility Report for the location of this Project was prepared in the year 1989 itself, and that was subject to Government clearance and financing tie-up. It is stated in that Report that the land proposed to be acquired is almost free from habitation, and this is totally an incorrect statement. At the instance of the villagers and the active participation of Balakrishna Shetty a team consisting of Dinesh Agarwal and Dr. Chattopadhyaya, Members of the Ministry of Environment came to Padubidri on 30-11-1990 and inspected certain lands for location of ash pond at various places. Before acquiring the lands for the proposed Project, it is incumbent for the Pollution Control Board to obtain clearance from the Ministry of Environment. There is no such clearance, muchless the location of ash pond at Yellur. It is a case of putting the cart before the horse inasmuch as even without obtaining approval or clearance from the Ministry of Environment and Forests the respondents have

proceeded with the acquisition of lands. Acquisition proceedings are taking place in a hurried way even before the Project is sanctioned.

It is the further case of the petitioners that according to environmental guidelines for Thermal Power Plants issued by the Ministry of Environment no forest or prime-agricultural land should be utilised for setting up of Thermal Power Scheme or for ash Disposal. Out of a total of 3139.41 acres required for the project, 739.67 acres are lands yielding three crops, 95.73 acres are coconut and arecanut yielding lands with dwelling houses, 1-613.37 acres are coconut, arecanut and cashewnut growing lands together with forest land with dwelling houses, and only 637.75 acres are Government lands which are mainly grazing lands and forest lands, The Statement prepared by the Deputy Commissioner about the nature of the lands proposed to be acquired is based on the Survey Resettlement of the year 1935 and it had no relation to actualities, and the above classification regarding nature of the land is based on survey conducted by the petitioners in the presence of concerned officials. In order to keep the plant in steam 2.4 million tons of coal is required for the first stage alone. The coal has to be mined in Talchar Coal mines in Orissa and transported by rail to Paradeep Port in Orissa. It has to be shipped to Mangalore Port from where the coal has to be transported in the proposed railway line to the plant site proposed at Nandikur. For the first stage of the project, 38000 tons of coal per day is required and that would produce 14000 tons of ash. The capacity of New Mangalore Port to unload at present is about 2184 tons per day. This was achieved on 16th November 1990 when the port was able to discharge 2184 tons of timber which arrived from Malaysia. Having regard to this, the Corporation does not have the required fleet strength and it has proposed to dispose of the ash by creating ash ponds. At the first instance it was proposed to locate the ash pond at Inna village. Thereafter it was shifted to Yellur Village. The proposal is to mix the ash produced with sea water. The Feasibility Report will indicate that there was no application of mind as to the adverse chemical reaction of mixing the ash with sea water. The water flowing in Shambhavi river is not sufficient to meet the requirements of the Project, Nowhere in the world ash is mixed with sea water. Sea water is used only for cooling purposes in some plants. Since the mixing of ash with sea water is a novel method there must have been an examination whether such a procedure was based on any experiment conducted anywhere in the world.

It is also the case of the petitioners that the Karnataka State Pollution Control Board acted merely as an agent. The casual manner in which the Board has cleared the project clearly indicates that it has no knowledge of its own responsibility to the people residing in the concerned area.

Inasmuch as the project is yet to be cleared, the utilisation of the machinery under the Land Acquisition Act, 1894, and the invocation of the urgency clause is bad.

Another important feature is that there was no application of mind to the

applicability of the Forest (Conservation) Act, 1990. No Scheme was prepared for rehabilitation of large number of persons who will be dislodged from their habitat. It is the primary duty of the State Government to prepare a Scheme for rehabilitating the people likely to be displaced consequent to the acquisition of the lands, and no such Scheme has been prepared and the people likely to be affected are left to tend themselves.

On these grounds a Writ of Mandamus is prayed for directing the respondents 1 to 4 to desist from carrying out any work relating to the Project at Nandikur and other villages and also the work relating to the ash ponds at Kemmundele and Yellur Villages as the project itself is not a feasible Project. It is further prayed to quash the proceedings of the State Government relating to Notification dated 21-10-1989 regarding land acquisition.

2. In the detailed Statement of Objections filed by Respondent-4 Corporation, the averments are met in the following manner-

There is acute power shortage in the State of Karnataka. Big industries have been shying away from the State. The only solution to this problem is the establishment of big generating stations like the one envisaged by the Project in question. As a matter of fact, the petitioners have nowhere stated that there is no need to generate electric power on such large scale as is contemplated by the impugned scheme; and they are unaware that the Project has been conceived, examined and passed by the highest Authorities viz:

- (a) Government of India - Planning Commission.
- (b) Central Electricity Authority.
- (c) Karnataka State Pollution Control Board.
- (d) Department of Ecology & Environment.
- (e) Administrative Ministry, Department of Power, Government of India.
- (f) Ministry of Environment, Government of India.
- (g) Ministry of Finance, Government of India.
- (h) Public Investment Board.
- (i) Cabinet Committee on Economic Affairs.

The above Authorities, except (f) and (i), have cleared the Project. However, the Thermal Appraisal Committee of the Ministry of Environment and Forest has already recommended environmental clearance, and the Cabinet Committee on Economic Affairs is only a formal one and the actual "starting of infrastructure work in respect of the Project need not await the clearance from that Authority as per Memorandum of Understanding between the NTPC and the Government of India. In fact in respect of several of the projects undertaken and completed, clearance from that Authority came long after NTPC starting the infrastructure

work etc. and it is so understood by all the Authorities including the Cabinet Committee. The clearance to the Project is given by the Cabinet Committee based on the recommendation of the Public Investment Board. The said Board has already recommended the Project for clearance of Cabinet Committee. The infrastructural work can start even before clearance of Cabinet Committee, and for such work an amount of Rupees Five Crores is permitted to be spent.

The Central Electricity Authority conducted the Electric Power Survey of India in December 1987. It has been found that the southern region including Karnataka State is to face acute power shortage both in terms of peaking capacity as well as energy requirement. As per the survey, an addition of 38000 MW of electric power is contemplated during the 8th Plan. Therefore this Project has been included in the 8th Plan. Besides, the Central Electricity Authority has also concurred in the Scheme as per Section 31 of the Indian Electricity Supply Act. To meet the power shortage, more power projects like the Mangalore Super Thermal Power Project in Karnataka, Kayamkulam Super Thermal Power Project in Kerala etc. are also being undertaken. It is further stated in the Statement of Objections as follows:-

"9. It is submitted that MSTPP is a huge project involving an expenditure of Rs. 998.16 crores as estimated in March 1990 for the first stage. The project is to receive cooperation and aid credit from USSR for its implementation in the shape of design package, manufacture, supply, delivery at site, handling and storage, erection, testing and commissioning of all the equipments and putting into operation and performance of services including deputation of specialists. It may be stated that this respondent has so far carried out several big projects in various parts of the Country; but in the case of none of these projects has this respondent received any Court notice or any injunction order from any Court or authority with the result that the projects could be carried out according to scheme. It is further submitted that any further delay in the prosecution of the project may mean that Karnataka may lose the immense benefit of the scheme.

18. The petitioner is misreading the feasibility report. The important part of it (pages 1 to 17) has been filed as Annexure-1. This Hon"ble Court may be pleased to peruse the same. The expression "free from habitation" has been torn out of its context. The following five paragraphs found at page 9 of the report will clearly show how and why this respondent chose Nandikur Village.

The proposal is to set up the Power Station at Nandikur near Mangalore in the Karnataka State.

Township is located towards north of the plant area at a distance of 3 KM and in the eastern side of the National Highway NH-17. The land is almost free from habitation.

Prior to taking over the project by NTPC, Karnataka Power Corporation Ltd. prepared the feasibility report of the project. KPCL investigated four alternative sites located at Tannirbhavi, Kunjatabailu, Suratkal and Nandikur (Neal Mulki).

Tannirbhavi site was rejected due to inadequate space availability for plant area and non-available of ash disposal area in the vicinity. The site Kunjatabailu has not been considered suitable from the environmental angle in view of the proximity to Mangalore City and Port.

Suratkal site was ruled out due to higher cost of site development, foundation and problem in land acquisition as it requires large scale displacement of people."

19....It is imperative from Article 10 of the Agreement between Government of India and the Government of USSR which deals with accomplishment of utilisation of all the credit and its repayment. It stipulates that "the Government of Republic of India shall commence repayment of credit utilisation in accordance with this article in instalments commencing after six months from the commissioning of the first unit, but not later than October 1, 1995. This makes the Government of India committed to utilise the credit before middle of 1995 in the 8th plan period (1990-95) and commence repayment by October 1995. Hence there is initial Government clearance for the project and also for the spending in this behalf.

20....The Adviser to the Ministry of Environment & Forest, Government of India had requested this respondent in his letter dated 4-12-1990 (Annexure-V) to inspect the alternative locations for ash pond. Accordingly a team of experts of NTPC along with the petitioner and villagers inspected the sites and a report was submitted to Ministry of Environment & Forest in its letter dated 20-12-1990 (Annexure-VI). Sri Dinesh Agarwal and Dr. Chattopadhyaya who are the members of the team, being employees of this respondent, could not have reported against this respondent. It is preposterous to state that the State Government has played a fraud on the State.

23. In para-7 of the Writ Petition, the same twin ideas namely want of clearance from the Ministry of Environment and want of clearance from the Central Government are reiterated. In this connection the proceedings of the 356th meeting of the Public Investment Board may be considered. A true copy of the proceedings is produced herewith as Annexure-VII. Various High Officials from the Ministry of Finance, from the Ministry of Environment, from the Planning Commission, from the Department of Power, from Department of Economic Affairs, from Department of Coal, from Ministry of Surface Transport, from the Central Electricity Authority, from this Respondents etc. constitute this High Power Body known as Public Investment Board. All schemes undertaken by the Central Government or the instrumentalities of the Central Government, Public Undertakings and Corporations controlled by the Central Government, must be submitted to this High Power Body. Its function is to examine the schemes from all points of view, like financial, environmental, feasibility etc. The project involved in this case was likewise thoroughly examined by this body. There was a thorough discussion of all aspects of the scheme at the meeting, it found that the implementation of the scheme would not lead to any environmental hazards. As regards cost, it came to the conclusion that of all methods the cheapest was to

make use of coal to be got by sea.

24.....the project has been duly considered by the various authorities mentioned in para-5 supra and there is no impediment to the starting of the work in respect of this project. Various officials from various departments have been allotted to this project and every day's delay causes "immense loss to this respondent and to the Central Government. The loss is really to the Nation as public monies are being spent.

26..... It is said in para 9 that the yearly and daily consumption of coal and quantity of ash produced per day are as follows:

1) Yearly consumption of coal:

2,400,000 Tons

2) Daily:

38,000 Tons

3) Ash produced per day

14,000 Tons

If 38000 tons of coal are required per day for 365 days (for a year) the quantity of coal required is 13,870,000 tons. The petitioner may explain this vast discrepancy.

As given in Annexure-I, the quantity of coal required for a year is only 1,520,000 tons for stage-I.

As regards the capacity of the New Mangalore Port Trust, this respondent has already approached the port authorities and they have agreed to allot a particular area on the bank for both unloading and stocking of coal. Further, the Mangalore port can handle ships with load upto 30000 tons. Thus the number of ship load that will carry coal to port will be about 50. The Mangalore Port is an all weather port. Therefore, no problem in coal shipment is envisaged throughout the year. In addition, a coal stock of 45 days is expected to be in reserve at the power station site. There are huge self-unloading ships available which can unload upto 6000 MT per hour. With such advanced technology in shipping, no difficulties are envisaged in coal handling.

27.....It is incorrect to state that nowhere sea water is used for mixing with ash. Sea water is used in Ennore and Tuticorin plants. Sea water is freely used for ash disposal in similar plants in Japan. It is submitted that as regards use of sea water or sweet water no final decision has been taken. Experts have been asked to conduct experiments so that the better method to be employed will be available before the trial production commences in 1995. Nobody need have any fear, as the matter is in the hands of Experts and work will be carried out strictly according to their directions. One thing that is clear is that in Japan, a nation far ahead of us, has been using sea water for the disposal of ash. It is therefore

wholly incorrect to state that there is no application of mind.

29.....It is submitted that the petitioner has totally failed to grasp the one fact namely that as the project has to be carried out within 5 years by the end of the 8th Plan (1994-95) the Land Acquisition Proceedings must be finished within a period of one year and at the latest, one year and a half, so that in the remaining period of 3 or 3 1/2 years, levelling, construction of the buildings, installation of the machinery, commissioning and laying of transmission lines etc. may take place. This is the real urgency of the situation. In fact, as per the project implementation agreement signed between Government of India and the Government of USSR, the first unit shall be commissioned within 42 months from the date of signing the Supply Contract. The Global Framework Agreement with USSR is enclosed at Annexure- X. The petitioner, like the proverbial ostrich, refused to recognise these crucial facts. It is submitted that the land acquisition proceedings are proceeding strictly in accordance with law and all the requirements of law and the Land Acquisition Act will be adhered to, and compensation will be paid as per law. It is not correct to state that the acquisition proceedings can be started only after there is clearance from the Ministry of Environment, Government of India. That clearance has only to be formally given since all the other authorities have examined, scrutinised and approved the project.

31. No forest land is being acquired for the project and hence nothing need be done under the Forest (Conservation) Act, 1990.

32. This respondent submits that the above project is included in the Agreement entered into by the Government of Republic of India and the Government of the Union of the Soviet Socialist Republics dated 12-9-1989. Under the agreement, the Government of USSR is to help financially and also by supply of technical knowhow, machinery and by deputing trained specialists for the job - all these in setting up three Power Plants as follows:

(a) "Maithon" Power Plant - Capacity 840 MW

(b) Kayamkulam Power Plant 420 MW

(c) Mangalore Power Plant - $2 \times 210 = 420$ MW

It is further agreed between the two Countries that USSR shall extend credit to India to the extent of 600 million roubles, interest being charged at 2.5% per annum. The agreement is signed by the then Minister for Finance, Sri S.B. Chavan on behalf of the Government of India and by Sri K.F. Katushev, Minister of Foreign Economic Relations, Government of USSR, which is produced at Annexure III.

It is further submitted that the very fact that a highly advanced Country like Russia is actively participating in the carrying out of the project and that its specialists will be engaged at the site itself in the implementation of the project is itself a guarantee that all safeguards will be meticulously provided i.e.,

safeguards against environmental hazards, against pollution of underground water or the pollution of the very atmosphere. This aspect has been totally lost sight of by the petitioner.

35. It is respectfully submitted that as the main credit agreement (Annexure-XIII) has been entered into by the Government of India, it has to be presumed and it is a fact that the Government of India has entered into the agreement, after having got the projects carefully examined, and scrutinised, and after having given its approval. There is, therefore, express clearance from the Government of India, which means that there is clearance from even the Ministry of Environment and from all the other ministries as well." -

For these reasons, it is prayed that the Writ Petitions may be dismissed.

3. Mr. Mohandas N. Hegde, learned Counsel for the petitioners, reiterates the points raised by him in Writ Petitions for the location of the project as well as ash pond. According to him, location of the project must first be decided after obtaining necessary clearance from the Authorities concerned including Government of India, and then alone land acquisition proceedings should have been resorted to. Even otherwise, while clearing this project no one has had regard for the environmental pollution. The authorities have not considered as to the health hazards which the location of the project might create for the human habitation and for the animal and plant kingdom. To say that there is no habitation is false. Actually number of people reside there and the location of the project will be injurious not only to human beings but also to others including plants. There is no application of mind concerning environmental hazard. Huge investment should not be incurred. The feasibility report does not cover the injurious gas likely to be produced.

In W.P.No. 6262/91 the argument is that public revenue should not be spent without permission. In case of Sharavathi project, this Court has taken the view that unless there is clearance from the point of view of the Forest Act it would be bad in law. That has not been done in this case at all.

4. Mr. P.V. Shetty, learned Counsel appearing for the petitioners in WP 2456/1990, supports the stand of Mr. Mohandas Hegde and contends that it is not to be understood that the petitioners are opposing the location of the power project, nor are they against it. But all that they would like to stress would be that the necessary precautions including environmental pollution will have to be considered. Even now the Court can direct the matter to be reconsidered. The petitioners have no objection provided the injuries likely to be caused to environment are eliminated. The Supreme Court while dealing with the case in Rural Litigation and Entitlement Kendra and Others Vs. State of Uttar Pradesh and Others, had approached only from this angle. Again in Dahanu Taluka Environment Protection Group and Another Vs. Bombay Suburban Electricity Supply Company Ltd. and Others, the Supreme Court had occasion to consider this matter. If it is so considered in the light of these Decisions the petitioners

will have no objection.

5. Mr. B.P. Holla, learned Counsel appearing for National Thermal Power Corporation, would point out that this is a Public Interest Litigation and in the Writ Petitions allegations are made as though the matter both in relation to location of the project and the ash pond as well as the Land Acquisition Act, has not been considered in their proper perspective. After drawing our attention to paragraphs 6 and 9 of the Statement of Objections to which we have already referred, he submits that paragraph-6 clearly evidences as to what is the progress of the project. Again in paragraph-9 it is pointed out that a sum of Rs. 998.16 Crores is likely to be spent. If one carefully studies the number of documents in relation to the project it would be clear as to how the matter was examined in great detail. As a matter of fact on 12-9-1989 an Agreement was entered into between the Governments of India and USSR under which a sum of 600 million Roubles is to be granted by way of aid. The various terms of the Agreement would clearly indicate that it is a time bound project. On 22-12-1989 a Global Framework Agreement was entered into; there again the object is to stick to the time schedule. It is stated therein that the NTPC is to build buildings, and hence the need for land acquisition. The time-schedule for the project is mentioned therein as "Unit No. 1: 42 months, Unit No. 2: 48 months". There is also a provision relating to repayment of loan. Money must be utilised. Work must be completed. Then alone repayment could be effected. Paragraph-8 of the Counter will clearly show that the project is included in the 8th Five Year Plan. On 29-11-1990 the Public Investment Board recommended the Project, as also the Thermal Advisory Committee. The Central Electricity Authority had also sanctioned the Project. In response to the notice there were 442 objections and all those objections were considered and only thereafter there was sanction by the Central Electricity Authority. Further, as seen from Annexure-III to the Counter, there is Clearance Certificate from the Dahanu Taluka Environment Protection Group and Another Vs. Bombay Suburban Electricity Supply Company Ltd. and Others, and several conditions have been laid down therein to safeguard the environment. The NTPC assures the Court that all the safeguards will be carried out.

The Secretary to the Government of Karnataka, Ecology and Environment Department, has also given clearance, and it particularly deals with ash disposal.

The New Mangalore Port Trust has written to the Chief Engineer of Karnataka Power Corporation as per Annexure-IX to Counter, conveying its no-objection for coal-shipment. The requirement of 38000 tons of coal is demonstrably wrong because of what is stated in para-26 of the Counter.

In the Feasibility Report the land required is mentioned as 2452.8 acres while the coal requirement is 1.52 million tonnes per year. This Feasibility Report deals with various aspects including environmental aspect which has been dealt with in an elaborate fashion.

It is also seen from Annexure-R5 that the letter of Balakrishnashetty who is Writ Petitioner in W.P.24197/1990, was examined by the Government of India. He was also present during the inspection, and Jantra and Kadarna sites were considered to be not feasible.

So far as the Project area is concerned, there is no reserved forest, and therefore, the question of forest land does not arise.

Total area of land required for ash pond is 888.59 acres while dry tend is 632.53 acres.

In Annexure-R2 to the Counter in W.P.24197/1990 it has been succinctly brought put that there is no suitable alternative uncultivable land available. To this, no reply has been filed, nor is this a case of mala fides. NTPC has carried out several projects hitherto and therefore they are not novice in this case. They have all the technical knowhow. It is therefore incorrect to contend that the formalities have not been complied with.

6. Mr. U.L. Narayana Rao, learned Counsel appearing for the Pollution Control Board, drew our attention to the Statement of Objections filed in W.P.No. 6262/1991. He places before us the Report of the Pollution Control Board, Report of the Department of Ecology and Environment, Report of the Thermal Appraisal Committee, and Dr. Chokkalingam's Report. As regards disposal of ash, in paragraph-10 of the Counter it has been fully dealt with. Whether the Railways have interfered with, is also seen and it has been found that they have not so interfered with. In fact, on 7-3-1991 clearance from Railways had been obtained. Therefore, at every step, all precautions have been taken.

In W.P.2456/1990 in the Statement of Objections, various aspects of importance have been dealt with, particularly regarding pollution control which has been dealt with in detail in paragraphs 22 to 40. Therefore, to contend that there is no application of mind, is wrong. Thus the location of the Project fully satisfies the various requirements of law. Learned Counsel relied on Shri Sachidanand Pandey and Another Vs. The State of West Bengal and Others, and Rural Litigation & Entitlement Kendra v. State of U.P.

No doubt in every case there is always an element of hazard, but that does not mean that Schemes which are to serve the Nation can be given up because there are few objections which are not tenable in the eye of law, vide M.C. Mehta and Another Vs. Union of India (UOI) and Others, .

In Dananu Taiuka Environment Protection Group v. Bombay Suburban Electricity Supply Company Ltd. as to how the matter is to be approached is fully dealt with. Examined in the light of this Case, all aspects have been considered because clearance had been given from Karnataka State Pollution Control Board, Environmental Appraisal Committee and Dr. Chokkalingam's Report.

For these reasons, it is submitted that there are no merits in these Writ Petitions which require to be dismissed.

7. In matters of this kind, nobody can deny that the maintenance of ecological balance is essential for the survival of the human beings:

"For centuries, mankind has turned a deaf ear to pleas by seers like Aristotle, Darwin and now David Attenborough to save our planet.

There is danger in the air, but it is time we listened, because air pollution has never been a bad as it is now. Even as we benefit from industrial progress we must ensure that the very air we breathe remains unpoisoned.

Your lungs are garbage dumps: Already alarming signals are emerging in our cities. Hundreds of tonnes of suspended particulates (chemicals, toxic and non-toxic substances) are released into the atmosphere every day. This poisonous waste ends up in your lungs and severely affects your health. Some of it passes into your bloodstream to set into motion an irreversible process of decay and disease in the body.

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Environmental problems in India arise from a number of causes. (1) The growing human and animal populations are making increasing demands on natural resources resulting in the exploitation of resources in an unsustainable manner. (2) the general indifference of the industries sector on aspects of environmental safety and protection, leading to the spread of avoidable air, water and soil pollution. (3) Economic growth has necessitated a corresponding expansion in energy availability for industrial, agricultural and domestic purposes. The energy mix in the country is such" that India has been listed the fifth biggest contributor of green house gases by the World Resources Institute. (4) The level of environmental literacy is low and thus there is a gross undervaluation of the economic and ecological aspects of biological diversity. Also, extensive damage is being done to basic life support systems; more than that caused by development activities. (5) The policies of the Central and State Governments have not incorporated environmental accounting principles with the result that many development projects have been conceived for short-term gains, without considering their long-term ecological and social impact. (6) The inability to convert the oft-repeated rhetoric of growth with equity into reality has resulted in the persistence of widespread poverty, under-nutrition and high under-five infant mortality. Also, the biomass needs of the tribals and rural people are neglected. Thus, 43 years after Independence, while the country has achieved great gains in industry and agriculture, it has failed on the family planning, poverty alleviation and environment protection fronts. The new environmental ethic will have to find solutions to these problems.

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Environmental awareness helps in creating conservation consciousness. It is an established fact that the success of the conservation movement depends not on the quality of its science, not on the dedication of its practitioners, not even on

the funds allotted to its cause, vital though these factors are. It depends on how widely and compellingly this message is spread: The foundation of life and all human needs is in nature, but nature's capital is not inexhaustible. Each of us must use it caringly and sparingly."

This aspect of the matter is beautifully dealt with in Shri Sachidanand Pandey and Another Vs. The State of West Bengal and Others, which reads as follows:

"Today society's interaction with nature is so extensive that the environmental question has assumed proportions affecting all humanity. Industrialisation, urbanisation, explosion of population, over-exploitation of resources, depletion of traditional sources of energy and raw materials and the search for new sources of energy and raw materials, the disruption of natural ecological balances, the destruction of a multitude of animal and plant species for economic reasons and sometimes for no good reason at all are factors which have contributed to environmental deterioration. While the scientific and technological progress of man has invested him with immense power over nature, it has also resulted in the unthinking use of the power encroaching endlessly on nature. If man is able to transform deserts into oases, he is also leaving behind deserts in the place of oases. In the last century, a great German materialist philosopher warned mankind: "Let us not, however, flatter ourselves over much on account of our human victories over nature. For each such victory nature takes its revenge on us. Each victory, it is true, in the first place bring about the results we expected, but in the second and third places it has quite different unforeseen effects which only too often cancel the first."

Ecologists are of the opinion that the most important ecological and social problems is the widespread disappearance all over the world of certain species of living organisms. Biologists forecast the extinction of animal and plant species on a scale that is incomparably greater than their extinction over the course of millions of years. It is said that over half the species which became extinct over the last 2000 years did so after 1900. The International Association for the Protection of Nature and Natural Resources calculates that now, on average, one species or sub-species is lost every year. It is said that approximately 1000 bird and animal species are facing extinction at present. So it is that the environmental question has become urgent and it has to be properly understood and squarely met by man. Nature and history, it has been said, are two component parts of the environment in which we live, move and prove ourselves."

Again in Rural Litigation and Entitlement Kendra and Others Vs. State of Uttar Pradesh and Others, in dealing with this aspect, Ranganath Misra, J., as he then was, held in paragraph-17 as under:

"It is for the Government and the Nation and not for the Court, to decide whether the deposits should be exploited at the cost of ecology and environmental considerations or the industrial requirement should be otherwise satisfied. It may be perhaps possible to exercise greater control and vigil over

the operation and strike a balance between preservation and utilisation that would indeed be a matter for an expert body to examine and on the basis of appropriate advice, Government should take a policy decision and firmly implement the same."

In *M.C. Mehta and Another Vs. Union of India (UOI) and Others*, while approaching the matter in a pragmatic way, it has been held in paragraph-21 as follows:

".....We would therefore suggest that a High Powered Authority should be set up by the Government of India in consultation with the Central Board for overseeing functioning of hazardous industries with a view to ensuring that there are no defects or deficiencies in the design, structure or quality of their plant and machinery, there is no negligence in maintenance and operation of the plant and equipment and necessary safety devices and instruments are installed and are in operation and proper and adequate safety standards and procedures are strictly followed. This is a question which needs serious attention of the Government of India and we would request the Government of India to take the necessary steps at the earliest, because the problem of danger to the health and well-being of the community on account of chemical and other hazardous industries has become a pressing problem in modern industrial society. It is also necessary to point that when science and technology are increasingly employed in producing goods and services calculated to improve the quality of life, there is a certain element of hazard or risk inherent in the very use of science and technology and it is not possible to totally eliminate such hazard or risk altogether. We cannot possibly adopt a policy of not having any chemical or other hazardous industries merely because they pose hazard or risk to the community. If such a policy were adopted, it would mean the end of all progress and development. Such industries, even if hazardous, have to be set up since they are essential for economic development and advancement of well-being of the people. We can only hope to reduce the element of hazard or risk to the community by taking all necessary steps for locating such industries in a manner which would pose least risk or danger to the community and maximising safety requirements in such industries."

In *Dahanu Taluka Environment Protection Group and Another Vs. Bombay Suburban Electricity Supply Company Ltd. and Others*, the decision of the Government of India to grant clearance to the proposal of the Bombay Suburban Electricity Supply Company for the construction of a thermal power plant at a place near Bombay, was challenged. The matter was examined with reference to the various cases referred to above. That was also a Public Interest Litigation. In paragraph-2 the Supreme Court observed as follows:

"The limitations, or more appropriately the self-imposed restrictions of a Court in considering such an issue as this have been set out by the Court in *RURAL LITIGATION & ENTITLEMENT KENDRA v. STATE OF U.P.* (1987 1 SC 637) and *Shri Sachidanand Pandey and Another Vs. The State of West Bengal and Others*, . The

observations in those decisions need not be reiterated here. It is sufficient to observe that it is primarily for the Governments concerned to consider the importance of public projects for the betterment of the conditions of living of the people on the one hand and the necessity for preservation of social and ecological balances, avoidance of deforestation and maintenance of purity of the atmosphere and water free from pollution on the other in the light of various factual, technical and other aspects that may be brought to its notice by various bodies of laymen, experts and public workers and strike a just balance between these two conflicting objectives. The Court's role is restricted to examine whether the Government has taken into account all relevant aspects and has neither ignored nor overlooked any material considerations nor been influenced by extraneous or immaterial considerations in arriving at its final decision."

In the light of the above background of law, we now propose to analyse the factual situation in this case.

8. Originally u/s 29 of the Indian Electricity (Supply) Act, 1948, the proposal to locate the Project in question was published, and number of objections - 442 in number - had been filed. They were all considered, it is only thereafter that it was decided to locate the project. The land requirement was fixed at 2452.8 acres. Acquisition proceedings had to be taken up under the Land Acquisition Act, 1894, (for short "the Act"). We have already dealt with in WPs.23620 to 34/1990 and others disposed of today separately, the reason for acquiring lands by invocation of urgency clause viz. Section 17(4) of the Act dispensing with statutory enquiry u/s 5A of the Act. Therefore, we do not propose to deal with it again here.

Annexure-XIII to the Statement of Objections in WP.1112/1991 is the Agreement dated 12-9-1989 entered into between Governments of India and USSR. Article 3 of the said Agreement reads:

"For the purpose of implementing the cooperation provided for herein the Soviet organizations shall render technical assistance to the Indian organizations on request, in the selection of construction sites, elaboration of general layout plan, collection of initial data required for engineering design, for which Soviet Specialists shall be deputed to India, in numbers, by specialities, for the period and on the terms and conditions to be agreed upon between the organizations of the both countries."

Article 4 of the Agreement says:

"For the purpose of implementing the cooperation provided for herein, the Indian organizations shall....put ,at the disposal of the Soviet organizations, free of charge, land plots free from any encumbrance or installations hampering the construction, as well as ensure necessary, the connection of the projects under construction to the off-site installations, where necessary...."

Article 6 of the Agreement provides:

"For the purpose of implementing the cooperation in setting up the TPPs mentioned in Article 1, the Government of the USSR shall extend to the Government of the Republic of India a credit of an amount of upto 600 million Roubles at 2.5 per cent annual interest."

The agreement also envisages in Article 10 as follows:

"The Government of the Republic of India shall commence repayment of the credit utilised in accordance with this Article in five equal annual instalments commencing after six months from the commissioning of the first unit of each of the mentioned above TPPs, but not later than October 1, 1995."

This Agreement was signed by the then Minister of Finance, Government of India, and the Minister of Foreign Economic Relations, Government of USSR. Pursuant to this Agreement, a Global Framework Agreement on construction of Mangalore TPS was also entered into on 22-12-1989, and the object of this Agreement was to coordinate the time schedule of implementation of the Agreement dated 12-9-1989. In the Agreement dated 22-12-1989 both the Governments of India and USSR have agreed as follows:

"1.1 NTPC shall fulfil all civil works of all the buildings and structures of the Thermal Power Station as well as its parts of obligations for the power station.

1.2 TPE shall fulfil on a "Package" basis design, manufacture, supply, deliver at site, handling and storage at site, erection, testing and commissioning of all the equipment, materials and structures included in TPE's scope of supply within the time schedule agreed upon by the sides under this agreement.

3.1 Signing of the Contract:

3.1.1 Contract for elaboration of DPR and working drawing for priority Civil Engineering works.

Initial signing: Dec. '89 Initial Signing: April '90 3.1.2 Contract for Working Drawing:

Draft contract: Oct. '90 Initial Signing: Dec. '90 Final Signing: Mar. '91 3.1.3 Contract for the supply of Equipment and materials from USSR and from third countries:

Draft Contract without price (from TPE) June '90 Price Offer: Oct. '90 Initial Signing: Dec. '90 Final Signing: Mar. '91 3.1.4 Contract for supply of the equipment from India:

Draft Contract (from TPE) June '90 Price Offer Oct '90 Initial Signing: Dec. '90 Final Signing: Mar. '91 3.1.5 Contract for erection, testing, commissioning etc. including port clearance, transportation, storage and handling at site.

Draft Contract (from TPE) Aug. '90 Price offer " Oct. '90 Initial Signing Dec. '90 Final Signing Mar. '91 3.2 Submission of DPR.

3.3.1 Synchronization of Unit No. 1: 42 months from the date of signing the supply contracts (provided contract for erection, testing, commissioning etc. is signed not later than June 91).

3.3.2 Synchronization of Unit No. 2: 48 months from the date of signing the supply contracts (provided contract for erection, testing, commissioning etc. is signed not later than June 91)

3.4. The schedule of completion of civil construction works (responsibility of NTPC) based on the drawings supplied by TPE shall correspond to the schedule of the erection (by TPE) which shall be mutually agreed upon by the sides in the erection contract."

Here again it would be clearly seen that time schedule has been emphasised as 42 months for synchronization of Unit No. 1 and 48 months for synchronization of Unit No. 2. Therefore, it would be clear that the money advanced by the USSR must be utilised, work must be completed and the repayment has to be effected as per the time schedule.

9. It is an undeniable fact that the Project in question has been included in the VIII Five Year Plan. The Public Investment Board, a High Power Committee" consisting of Officers in the Ministries of Finance, Environment etc., as seen from the summary record of discussions in its 356th Meeting held on 29-11-1990, had gone into this matter, and in paragraph-7 it is found as follows:

"As regards environment clearance, CM (NTPC) stated that the EIA report for stage-I (2 x 210 MW) for the project has submitted to Department of Environment in May 1988. The issue regarding Rehabilitation and Resettlement (R & R) plan for the project has been discussed with the State Authorities and a mutually agreed R & R plan had been submitted to Department of Environment. NTPC had submitted all the required information in respect of the project to Department of Environment, from time to time. The Thermal Advisory Committee of Department of Environment had recommended the clearance for the project for stage-I (2 x 210 MW) as decided in their meeting on 17-9-1990. However, a formal clearance from Department of Environment was awaited."

It will be seen from the above that the Thermal Advisory Committee of the Department of Environment had recommended the clearance of the project. Ultimately, the conclusion and recommendations were recorded in para-8 as under:-

"Conclusions and recommendations:

i) The investment cost per KW at Rs. 21,168 for Mangalore STPP Stage-I was higher than the capital cost for comparable projects. The project authorities explained that this was on account of higher cost of civil works. The civil works cost was higher by Rs. 67.80 crores due to high construction index at Mangalore

(Rs. 38 crores), use of sulphur resistant cement (Rs. 0.8 crores), dredging in Mulki river (Rs. 8 crores), 22 km. long make up water pipeline (Rs. 8 crores), excavation of soft rock in main plant area (Rs. 5 crores) and high rate of land at Mangalore (Rs. 8 crores).

ii) The project was justified to meet the anticipated power requirements in the Southern region, where a peaking shortage of 20 per cent is anticipated in the year 1994-95 and a shortage of 45 per cent by the end of 1999-2000. The corresponding energy shortages are anticipated to be 18.9 per cent and 42.6 per cent respectively.

iii) The project was also justified as a least cost option on the basis of studies carried out by the CEA;

iv) The project would provide thermal back-up in the State of Karnataka which has a total hydro power system and is faced with very erratic power supply due to vagaries of the monsoon;

v) Though the all-rail route for transportation of coal to the project side reduces the per tonne cost of coal by approximately Rs. 30, dependence by the NTPC on the all-rail route would result in congestion of the railway system. It was therefore desirable that a good coastal system for transportation of coal be developed;

vii) The cost of generation of power was estimated at paise 172.34 per Kwh as against NTPC's prevailing (October 1990) tariff of paise 55.20 per Kwh in the southern region and the electricity rate of paise 8.94 per Kwh charged from the agricultural sector. Department of Power confirmed that the State Electricity Boards in the southern region would buy power at the tariff decided in accordance with Government norms.

vii) Environmental clearance to the project is awaited.

RECOMMENDATIONS:

Based on the above discussions and conclusions, the PIB decided to recommend to the CCEA for their consideration NTPC's proposal for Mangalore Super Thermal Power Project Stage-1 (2 x 210 MW) and Associated Transmission System at an estimated cost of Rs. 998.16 crores (first quarter 1990 prices)."

It is also from paragraph-8 of the Statement of Objections to which we have already referred, that the Central Electricity Authority after considering 442 objections had cleared this project, and the sanction order was passed on 2-1-1991 as follows:

"Sub: Techno-economic appraisal of Mangalore

STPS Stage-I in Karnataka (2 x 210 MW) - NTPC.

The techno-economic appraisal of the above scheme was found to be in order by the CEA on 6-9-1989. The scheme was to be considered for accord of techno-

economic clearance of CEA after compliance of Section 29 of the E(S) Act 1948 by National Thermal Power Corporation Ltd. which has since been done.

2 The scheme stands techno-economically cleared subject to the following conditions:

i) Clearance from Min. of Env & Forests

ii) Coal transportation requires creation of additional berths and other handling facilities at Paradip and New Mangalore Ports. The scheme for facilities at these ports would need to be sanctioned and implemented simultaneously. Timely construction of proposed Mangalore Udupi rail line by railways would have to be ensured for transportation of coal from port to the plant site by railways.

3. The concurrence of CEA will be issued on receipt of the investment sanction for the scheme. This letter is being issued to you for your advance information."

There is also clearance from the Karnataka State Pollution Control Board on 15-7-1989. As a matter of fact, that deals With water pollution control, air pollution control, solid waste disposal and water cess, and ultimately lays down important conditions as follows:-

"V. GENERAL

1) The industry shall provide separate D.C. Set of sufficient capacity to run and operate the essential units of effluent treatment plant/control equipment, in the event of breakdown of power supply from Electricity Board. The industry shall provide necessary connection from D.C. Set to the effluent treatment plant power line. The action taken by the industry in this regard shall be informed to the board within 30 days from the receipt of this clearance certificate.

2) The industry shall not be commissioned for trial or regular production unless the effluent treatment plant as approved by the Board is completed in all respects and necessary air pollution control equipments are installed to the satisfaction of the Board. The industry shall ensure that the treatment plant and control equipments are completed and commissioned simultaneously along with construction of the factory and erection of machineries.

3) The industry shall furnish the detailed programme of work in the form of Part Chart for implementation of Water and air pollution control works. Physical progress on the works shall be informed to the Board every month in a proforma Annexure-V.

4) During the operation of the plant, if either the emissions from the chimneys, stacks or the liquid effluents from the industry or solid waste disposal do not conform to the standards prescribed by the Board, the industry shall shut down the plant for effecting modification to the treatment works/control equipment so as to render the effluent and emissions to the prescribed standards.

5) The industry shall establish a full-fledged environmental management cell for

regular monitoring air emissions and water quality and control of Air and water pollution and other environmental problems.

6) Exact date of commissioning of the plant shall be informed to this Board 45 days in advance so as to make necessary inspection of the plant and the pollution control measures provided by the industry.

Please note that this is only, a clearance certificate issued to you to proceed with the formalities to establish the industry does not give any right to proceed with trial regular production. For this purpose a separate consent of the Board for discharge of liquid effluent and the atmospheric emissions shall have to be obtained remitting prescribed consent fees separately, for Air emission and waste water discharge as per Annexure-VI. The application for consent has to be made 45 days in advance to your commissioning for trial production of the plant. Issue of consent will be considered only after completion of effluent treatment plant both for domestic and industrial effluent and installing air pollution control equipment as required."

Then emanates another communication dated 8-12-1989 from the Secretary to Government of Karnataka, Department of Ecology & Environment, to the General Manager of the NTPC, New Delhi, which reads:

"Sub:- Issue of environmental clearance Certificate to the setting up of Multi-fuel Thermal Power Station, Nandikur Village, Dakshina Kannada.

The General Manager, National Thermal Power Corporation Ltd., propose to set up a Multi-fuel Thermal Power Station, Nandikur village near Mangalore for power generation which is as follows:-

a) Two units each of capacity of 210 MW, The Karnataka State Pollution Control Board, Bangalore has cleared the above industry from Air and Water Pollution point of view vide letter No. APC/SK-74/IND-1805/AE-5/88/11956-962 dated 29-9-1988.

The information furnished by the industry and the clearance issued by the Pollution Control Board has been examined by the Technical Advisor/ Committee of this Department. The said Technical Advisory Committee has recommended issue of Environmental Clearance to this industry in their meeting held on 28-8-1989. The Environmental Clearance Committee after careful consideration of the recommendations of the Technical Advisory Committee, has agreed to issue Environment Clearance to this industry at its meeting held on 6-10-1989.

The Department of Ecology and Environment, Government of Karnataka. after careful consideration of the various issues involved and based on the information and clarification furnished by the National Thermal Power Corporation, hereby accords Environmental clearance to the proposed Super Thermal Power Project at Nandikur Village about 35 km to the north of Mangalore and 3 km to the east of the Arabian Sea, subject to the fulfilment of the following conditions:

1. This clearance is for the first stage consisting of two units of 210 MW each only. The final clearance for the full project (2420 MW) envisaged by National Thermal Corporation would be considered after examining the interim EIA report to be submitted in 6 months time and by National Thermal Power Corporation and Final Environmental Impact Assessment Report to be submitted to this Department in the next 18 months, National Thermal Power Corporation shall comply with additional conditions to be imposed thereafter.

2. Ash disposal: Out of the two alternatives suggested for ash disposal, the first alternative of providing ash pond in the nearby dry land area and reutilizes the effluent for recalculation alone is approved and shall be followed. The overflow from the ash pond is to be monitored regularly and treated to the specification prescribed by the Karnataka State Pollution Control Board. The pollution control measures proposed shall take into account the heavy monsoon expected in this area. The final disposal of the overflow from the ash pond shall be discharged into the sea through submarine pipeline at a point to be decided by NIC Goa after detailed survey and study so as to safeguard the marine eco system.

3. Pollution Control: The pollution control measures and conditions stipulated by the Karnataka State Pollution Control Board in their letter No. AIC/SA-74/IND-1805/AG-5/83/11956 dated 29th September 1988 shall be implemented to the satisfaction of the Board before going into production.

4. Coal handling: a) Thannirbhavi area where coal is proposed to be stored is very close to the coast and comes within the recreational protected area of 500 M. from the highest of the high tide level, National Thermal Power Corporation should take separate clearance from the Government of India or otherwise identify an alternate site and seek fresh clearance.

b) Since transportation of coal from Thannirbhavi to the project site by train causes dust pollution all along the way, an alternate coal handling system by providing a Jetty close to the plant site and transporting coal through a closed conveyor belt system shall be examined and adopted.

c) In view of multifuel is being considered involving use of huge quantities of Coal/LSHS/Furnace Oil and from the point of view of protecting the environment specially the western ghats from possible acid rain situation, close monitoring of air quality and rain water quality, soil quality shall be undertaken at pre-identified points in the western ghats along the prevailing wind directions. National Thermal Power Corporation should start its work from January 1990 in consultation with the Department.

5. Zoning and Prohibiting unplanned Development around the Unit; The Thermal power plant shall be surrounded by an exclusion zone of 1.6 KM and the Main Plant shall as far as possible be located on the leeward side of the exclusion zone with respect to the wind direction. Residential and commercial activity in this exclusion zone shall be strictly prohibited under the orders of the Housing and Urban Development Department by constituting an appropriate authority to

prevent such activities.

6. Land Use: Out of the 830 acres of land required for the plant it is seen that 42.79 acres of garden land is included. As far as possible efforts should be made to preserve the garden and also to minimise the use of prime agricultural lands for ash disposal.

7. Monitoring of Ground water: The soil in SH is laterite in nature and is highly pervious. Further the ash slurry discharged into the pond is likely to contain heavy metals also. In view of this a close monitoring of the underground water around and ash pond and down stream along the valley shall be continuously monitored. The location of sampling stations shall be done in consultation with Karnataka State Pollution Control Board.

8. Temperature of Cooling Waters: The proposal of direct discharge of cooling waters through an open channel is not agreed to, as it will not bring down the temperatures of the cooling waters to the standards prescribed by the Karnataka State Pollution Control Board. Hence to protect the rich marine eco system, National Thermal Power Corporation shall examine the possibility of installing cooling towers, to ensure that the cooling water shall not exceed 3°C above the ambient temperature.

9. Green belt area: In accordance with the stipulation of the Government of India, action to develop a Green belt area of with 500 metres around the Thermal power plant shall be undertaken immediately.

10. Mulki Dam: Proposed Mulki dam is the source of water for the Super Thermal Power Plant and the construction of the dam is going to submerge 261.59 acres of land out of which 55 acres is forest land. Necessary clearance from the department of Environment and Forests Government of India shall be obtained for the above forest land.

11. Rehabilitation: It has been indicated that about 2500 people has to be rehabilitated. This figure is likely to be altered" after the final EIA report is evaluated....The scale and norms of rehabilitation shall be as laid down by the State Government, Central Government and National Thermal Power Corporation shall comply with such norms.

12. National Thermal Power Corporation: Shall comply with the requirements of Factories Act, Boilers Act and EP Act for storage, handling and Transporting of Hazardous Substance Hazardous Wastes to the satisfaction of the implementing authorities of these Acts.

13. Monitoring; From the initial stages of the project, the Environmental Surveillance and Monitoring of ground water, ambient air, aquatic life and flora and fauna of this area, including the health Status of the population around the power Station location should be carried out and records maintained. This activity should continue in future also, the monitoring stations shall be identified in consultation with Karnataka State Pollution Control Board, Department of

Ecology and Environment. Government of Karnataka."

It requires to be noted that on the above Report ash disposal was considered from its proper perspective. To this, there was a query from the Ministry of Environment and Forests on 4-12-1990 as follows:

S. Maudgal, Government of India, Adviser Ministry of Environment & Forests,
New Delhi,

December 4, 1990

Dear Shri Swamy,

Kindly refer to your D.O.No. CEV-25 Mangalore dated 20th November 1990 addressed to Shri O.K. Biswas regarding environmental clearance for the Thermal Power Project at Nandikur.

2. You may be aware that during the last meeting of the Thermal power Appraisal Committee held on 21st November 1990 Shri Balakrishna Shetty of Dubai had expressed apprehensions about the location of the ash pond at Yelluru Village. Shri Shetty had stated that the land classification has been adopted on the basis of the 1935 General Survey whereas more than 50% of the proposed area is under agriculture today. He had therefore suggested two alternate sites for location of the ash pond. The site of Jantra has an area of about 800 acres and is about 8 Kms from the plant. The other site at Kadama has an area of about 600 acres and is at a distance of about 5 kms from the plant. The NTPC officials present during the meeting had agreed that their team will visit the area and explore possibilities for identification of a suitable site for location of the ash pond. A report would then be submitted to this Ministry.

3. As regards the ash utilisation, we would require a copy of the report of the working group mentioned in your letter. Further, clarifications may also be, obtained from Department of Power whether they will have any objection if only 20% ash is utilised as against 100% utilisation stipulated in their circular. It may also be mentioned that even 20% ash utilisation would reduce your land requirement for the ash pond.

4. In view of the above, we shall be able to process the proposal further only after the requisite clarifications are received.

Yours sincerely, Sd/- Shri C.N. Swamy, General Manager, NTPC, New Delhi.

That is replied to by the NTPC as follows:-

"Dear Dr. Maudgal,

Kindly refer your D.O. letter No. 25/8/85-En-2/IA-III dated 4-12-1990 regarding environmental clearance for Mangalore Project (2 x 210 MW). As agreed in the TAG meeting on 21-11-1990, a team of NTPC officials was deputed to visit the two alternate areas for disposal of ash at Jantra (Jantrigudde) and Kadma (Kolluru) along with Shri Balakrishna Shetty, while Sh. Shetty accompanied NTPC

officials for the visit to Janta and Kadma sites, he did not accompany the team to Yellur sit.

It has been observed that the sites suggested by sh. Shetty at Jantra and Kadma have an area of about 540 aces and 633 acres respectively. However, as these sites have a number of hillocks, the effective volume available for ash disposal will be considerably less. The Jantra and Kadma sites he located about 12 and 8 kms. away from the plant site respectively and not 8 and 5 kms. as brought out by Sh. Shetty.

The pipelines to convey ash to these proposed sites and the service road would have to traverse densely populated areas and agricultural fields. This would involve displacement of people and acquisition of prime agricultural land. Further, Mulki river has to be crossed to reach kadma. In case of Yellur, displacement of population and acquisition of prime agricultural land would be less for the corridor of pipeline and service road Further, in case the ash bund is constructed either at Kadma or Jantra there might be significant change in the drainage pattern of the area since the natural drainage of the existing hillocks will have to be diverted for construction of ash pond. In case of Jantra, diversion of existing metal road would also be necessary. These areas are at a higher level (40 to 80 M) compared to the project site. The ash pond areas are normally selected within a distance of 10 kms. from the plant site and relatively at the same level as of plant site or lower. This is to minimise the energy required for pumping the ash slurry. The additional pumping head of upto 80m will require additional energy and would be contrary to the national energy conservation policy. In addition, due to high pressure in pipeline ash leakage, if any, will be severe and more damaging. As such, the sites proposed by Sh. Shetty are not only unsuitable from techno-economic consideration but also environmentally inferior to existing area at Yellur. A comparative statement of the features of three sites along with the location map and photograph is enclosed for your kind perusal. Further in this regard, Deputy Commissioner, O.K., Mangalore, vide letter dated 27/11/1990 (copy enclosed) has confirmed that no suitable alternative uncultivable waste land is available in the vicinity of the project and the acquisition of land at Yellur is under process.

As regards copy of the report of the Working group on ash utilisation, the same should be available with the Secretary, Department of Environment (DDEn) and Shri Parabrahmam, Advisor, DOEn as the report has been circulated by Special Secretary, Department of Power (DOP) vide his letter No. DO 1059/SSM/90 dated 30-10-1990. NTPC had taken up the matter with Ministry of Energy stating that it would not be possible to utilise 100% ash in the immediate future. Further, it is understood that the matter of 100% ash utilisation was also taken up by Central Electricity Authority with DOP; and CEA seem to have opined that full utilisation of fly ash may not be possible in spite of best efforts in the near future. Based on above, it is understood that DOP while submitting the note for obtaining investment approval/DPR for thermal power projects has indicated ash

utilisation to the extent of 20% for the next decade.

Further in a meeting chaired by Secretary MOEF on 30-11-1990 where Department of Power was represented by joint Secretary Shri J.D. Mehtani, NTPC has reiterated its stand that at present only 10 to 15% of fly ash can be utilised. In fact, Adviser Department of Science and Technology pointed that even for utilising this quantum of fly ash ways and means are to be found out. A copy of minutes is enclosed for your information.

As regards the reduction in area for ash pond, it would not be advisable to reduce the area at present since alternate use for ash is yet to be established. It may be mentioned here that while constructing the ash pond, the starter bund is constructed initially for a period of five years. The life of the ash bund is enhanced by raising the ash dyke. In case the alternate use of fly ash picks up, the height to which the bund would be constructed at a later stage can be curtailed.

The construction of ash bund or pond could be used for reclamation of sea by making suitable ash dyke in the sea and disposing ash. This is a well established system prevalent all over the world and MOEF representative during the visit to Japan had paid visit to power station where reclamation of land by use of ash was in vogue. In fact by reclaiming sea, we get additional land for other public/ industrial purposes in addition to saving valuable land which otherwise would have to be acquired for construction of dyke and disposal of ash.

In view of above clarification, you are requested to process the environmental clearance for this project.

With regards,

Yours sincerely, Sd/- C.N. Swamy,"

Therefore, it could be seen that alternative sites proposed for location of ash pond at Jantra and Kadama could not be accepted and it had to be only at Yellur. In this regard, the objection of Balakrishna Shetty (petitioner in WP 24197/90) was specifically considered.

As regards utilisation of coal, in paragraph-26 of the statement of objections which we have already extracted above, it is stated that the yearly consumption of coal is 1,520,000 tons for Stage-I and the Mangalore Port can handle ships with load upto 30000 tons.

10. Now, we will come to Feasibility Report which, inter alia, states as follows:-

"1.2 PROJECT HIGHLIGHTS:

Land Requirement: 2452.8 acres

Coal Requirement: 1.52 Million Tonnes/Year

(6000 hrs of operation)

Commissioning Schedule:

Based on the government clearance and financing tie up and main plant award by 1990-91, both units shall be commissioned by 1994-95.

2.2 The tentative power generating capacity addition programme of 38,000 MW during the 8th Plan (1990-95) includes Mangalore STPP Stage-I (2x210 MW) to yield benefit in 1993-94 and 1994-95 by commissioning one unit of 210 MW each in these two years. The Mangalore STPP Stage-I (2x210 MW) as indicated in the 13th EPS was to be implemented by the Karnataka State Electricity Board for meeting the demand of the State of Karnataka whereas now it is expected that the same is proposed to be implemented as a central sector project for benefit to the States in the Southern power region.

3.1 SITE SELECTION

Location: The proposal is to set up the power station at Nandikur near Mangalore in the Karnataka State.

The proposed site is bound by Nadsal, Phalimar, Nandikur and Hejmady villages of Udupi Taluk of Dakshina Kannada District having Latitude of 13° 8" N and Longitude of 74° 47" E. It is about 35 kms. North of new Mangalore Port. The National Highway NH-17 is about 1 Km to the Western side of the plant area.

Township is located towards north of the plant area at a distance of 3 km and in the Eastern side of the National Highway NH-17. The land is almost free from habitation.

Prior to taking over of the project by NTPC, KPCL (Karnataka Power Corporation Ltd.) prepared the Feasibility Report of the project. KPCL investigated four alternative sites located at Tannirbhavi, Kunjatabailu, Suratkal and Nandikur (near Mulki).

Tannirbhavi site was rejected due to inadequate space availability for plant area and non-availability of ash disposal area in the vicinity. -The site Kunjatabailu has not been considered suitable from the environmental angle in view of the proximity to Mangalore City and Port.

The Suratkal site was ruled out due to higher cost for site development, foundation and problem in land acquisition as it requires large scale displacement of people (already displaced once).

In view of the above, KPCL finally recommended the site at Nandikur near Mulki river in Mangalore for the development of a thermal power station.

APPROACH TO SITE:

Nandikur is located at a distance of 35 kms. from Mangalore railway station. The proposed Mangalore Udupi coastal railway line is passing 2-3 km. east of the plant area and siding to the plant area would be drawn from this line. National Highway NH-17 is passing closely. The site can be approached from NH-17 by a

metalled road at present. Mangalore is connected by regular air services from Bombay and Mangalore.

The plant area will be connected through a broad gauge railway siding to the proposed Mangalore Udupi Coastal railway line which is passing 2-3 km east of the plant area and siding to the plant area would be drawn from this line.

AVAILABILITY OF LAND:

Suitable land for power plant, ash disposal and township is available involving minimum emplacement of people. Details of land requirement is as follows:

Plant area

975 acres

Ash disposal area

900 acres

Permanent township

200 acres

Construction township

50 acres

Labour colony

50 acres

Railway siding

25 acres

Corridor for ash slurry pipes

40 acres

Roads

20 acres

Pump House

10 acres

Intake canal area

10 acres

CW canal area

20 acres

Coal storage at port

70 acres

Make up water corridor

82 acres

Sweet water pump house

0.8 acres

TOTAL

2452.8 acres

SOIL INVESTIGATION:

For the proposed power plant site of Mangalore STPP, no geo-technical investigation has been carried out. However, based on various visits to site and observations of open cut pits at site upto depths of about 10-12 meter from the existing ground level for the hilly region of the power plant area, it has been observed that the underlying layer are medium stiff lateritic strata and do may not pose difficulty in excavation. Also the underlying strata material can become soft with ingress of water. Rock strata may be expected at greater depths.

In the absence of detailed geo-technical investigations and survey of the area be available presently it is not feasible to precisely predict the type of ground conditions and to assess the foundations for the major equipments and structures. From local observations it is preferable at this stage to consider the feasibility of piles which can vary in length from 10-20 mts. The strata being primarily of lateritic clay, it is envisaged that bearing component of the pile foundations will be quite large compared to the friction component. Therefore, it is felt that board piles would be preferable alternative as the type of foundations to be adopted for major equipments and structure loads. For minor foundations, shallow foundation with RCC can be adopted.

Since the detailed survey of the area and soil investigation results are not available at this stage, the FR quantities have been based on the above assumptions. In case the actual ground conditions/strata is found to be different from the one assumed, either during soil investigation or during the construction stage, type of foundations and quantities thereof will have to be reassessed. The ground water table as noted from the local wells shall be assumed at 10.0 meter level.

3.5. ENVIRONMENTAL ASPECTS:

The site mostly conforms to the environmental guidelines. It is located at a distance of about 3.0 kms, from the Arabian sea and sufficiently away from any major human settlement. Most of the land for the project is non-forested and is not a prime agricultural land.

REHABILITATION ASPECT:

The site hosts negligible habitation and only a marginal displacement of people is involved. A detailed Rehabilitation and Resettlement (R & R) Plan for the subsequently affected land oustees and displaced people will be prepared based on the detailed demographic and socio-economic census and State Government norms.

3.5.1. REGULATORY REQUIREMENTS:

i) Clearance from Department of Environment (DOEn) Government of India:-

A detailed environmental analysis for a Thermal power project of 2 x 210 MW has been submitted by Karnataka State Electricity Board to DOEn, However, as the capacity of the project has been increased to 2420 MW it has been decided to prepare a comprehensive EIA report based on 12 months data for submission to DOEn for environmental clearance. An interim EIA report based on 3 months data will also be submitted to DOEn. The conditions stipulated by the DOEn will be complied with.

ii) NOC from Karnataka State Pollution Control Board (KSPCB):

The No Objection Certificate (NOC) from KSPCB has been obtained by Karnataka State Electricity Board for a capacity of 2 x 210 MW. The standards prescribed by the Board will be complied with.

3.5.2. POLLUTION CONTROL MEASURES:

Adequate measures will be undertaken to mitigate environmental pollution due to solid, liquid and gaseous discharges from proposed power project.

i) Solid Waste: Ash will be the principal solid waste from the proposed project. The fly ash will be arrested in ESP and shall be disposed off in slurry form in ash disposal area. The ash slurry will be allowed to settle and clear water will be let out through sluice gate. The ash pond will be properly designed so that escape of ash into the spill off water is prevented. After making hydrographic survey, the overflow from ash pond will be discharged into Arabian Sea at a suitable location. The abandoned ash disposal areas will be reclaimed and landscaped in stages.

ii) Water Pollution: The proposed power project will utilise once through condenser cooling water system. The hot cooling waters will be discharged into the sea after carrying out hydrographic surveys.

The liquid discharges as waste water from the plant will be treated as necessary. The demineraliser wastes, boiler blow down and boiler cleaning wastes will be neutralised. The neutralised effluent along with clarifier wastes, plant drains, coal handling area waste and coal storage area run off will be directed to a seeling tank. After sedimentation, the effluent will be pumped to the ash dyke. Tertiary treatment if found necessary shall be employed to minimise the pollutants within the prescribed limits.

The sanitary wastes of the plant and township will be provided biological

treatment before discharge. All the waste water discharges will comply with standards of MINAS 1986/13:2490 (Part-1).

iii) Air Pollution: Electrostatic precipitators (ESP) with high efficiency will be installed to control particulates emissions from the plant. Emission of particulate matter from the stack will comply with the standards stipulated by CPCB in "Emission Regulations" Part-1 (COINDS/17/1983-84). Regular monitoring of stack emissions and ambient air quality will be done. Fugitive dust from coal stacking/handling area will be controlled by sprinkling water, Cyclones and foggy nozzles will be installed at the dust generating locations. A planned arboriculture will be done around the ash disposal area to reduce the fugitive dust emission, A tall stack of 220m height will be constructed for wider dispersion and dilution of sulphur dioxide. Space will be provided for flue gas desulphurisation. NOx will be controlled through efficient design of boiler.

iv) Noise: Adequate care will be taken while preparing design specifications- of the equipment to keep the noise level within permissible limits.

v) Afforestation: Extensive plantation in and around the plant area and township will be undertaken for environmental improvement."

It requires to be noted that there is no reserved forest land involved in this case. That is evident from the following communication from the Deputy Commissioner, Mangalore, to the Chief Construction Manager, NTPC, Padubidri, dated 18-7-1990:

"Apropos of the above correspondence it is ascertained from the Special Deputy Commissioner (R & MSTPPC) Mangalore that there is no "Reserved Forest" land in the Mangalore Super Thermal Power Project area."

As to the nature of the lands and the approximate number of houses on the sites in question in respect of the ash bund area at Yellur village, there is a report of the Special Land Acquisition Officer, MSTP Project, Mulki, O.K., which reads:

"Statement showing the approximate houses and land use patterns of the proposed Ash Bund Area Yellur Village.

Total extent of land as per 4(1) Notification: 888.59

Classification: Dry - 632-53 Wet - 223-66 Garden - 32-40 Total: 888.59 No. of houses available under Land Acquirable: 168."

Thus the conclusion is inescapable as rightly urged by the NTPC in their Statement of Objections, that there is no other land that could be considered. As to what is the experience of the NTPC with regard to location/establishment of such a project, is clearly seen from the following statement which gives the details of various Thermal Power Projects completed/undertaken by them:-

NTPC PROJECTS AT A GLANCE

a) Projects completed/under execution - Coal based

Name of the Project

Singrauli STPP

Korba STPP

Ramagundam STPP

Vindychal STPP

behind STPP

Farakka STPP

Kahalgoon STPP

NCTPP

Talcher STPP

Location

UP

MP

AP

MP

UP

WB

BIHAR

UP

ORISSA

Capacity & Completed Year

1x200

1x200

1x200

1x210

1x500

1x200

1x210

1x210

1x500

Feb. 82

Mar. 83

Nov.83

Oct.87

Mar.88

Jan. 86

under

under

under

1x200

1x200

1x200

1x210

1x500

1x200

execution

execution

execution

Nov. 82

Oct.83

May.84

July 88

July 89

Dec. 86

1x210 "

1x210 "

1x200

1x200

1x200

1x210

1x200
1x210 "
1x210 "
1x500 yet
Mar. 83
Mar 84
Dec. 84
Feb. 89
Aug. 87
1x210 "
1x210 "
to be started
1x200
1x500
1x500
1x210
1x500
1x500 "
1x500 Yet
1x500 "
Nov. 83
May.87
June 88
Dec. 89
work under
1x500 "
to be started
1x500 "
1x200
1x500

1x500

1x210

execution

1x500"

1x500 "

Feb. 84

Mar.88

Mar. 89

Mar. 90

1x500 -do-

1x500 "

1x500

1x500

1x500

1x210

1x500 -do-

Dec. 86

Mar. 89

Oct.89

Feb. 91

1x500

1x500 work under

Nov. 87

execution

1x500

2000 MW

2100 MW

2100 MW

2260 MW

1000 MW

2100 MW

1840 MW

1840 MW

3000 MW

Total extent of land acquired

4753

3642

10289

4833

6659

4208

acres

acres

acres

acres

(so far 4208 acres acquired is 4002 acres) Balance under execution.

b) Projects Completed/under execution - Gas based

Name of the Project

Anta Gas Project

Auriya Gas Project

Kawas Gas Project

Dadri Gas project

Location

Rajasthan

UP

Gujarat

UP

Capacity & completed year

1x88 - January 89

1 x112 - March 89

1 x 106 - Under execution

1x131 - Under execution

1x88 - March 89

1x 112 - July 89

1x106- "

1x131- "

1x88 - March 89

1 x 112 - August 89

1X106- "

1x131- "

1x149 - March 90

1 x 112 - Sept. 89

1X106- "

1x131- "

1 x 102 - Dec. 89

1X110- "

1x146.5- "

1 x 102 - June 90

1x110- "

1x146.3- "

413 MW

652 MW

644 MW

Stage - II under approval

Stage II under execution

Stage II under execution

c) Projects where infrastructural works under execution:

Name of the project

Kayamkulam STPP

Mangalore STPP

Yamunagar STPP

Godavari STPP

North Karanpura STPP

Location

Kerala

Karnataka

Haryana

AP

UP

Capacity

2420 (WT)

2420 (WT)

1050 (WT)

1200 (WT)

2000 (WT)

Scheduled year of completion

1994-95 (1st Stage)

94-95

94-95

94-95

94-95

d) Projects in pipe line:

Name of the project

Chandrapur (MP)

Munuguru (AP)

Gandahar (GUJARAT)

Godavari (AP)

Faridabad (HARIYANA)

Tripura (TRIPURA)

Capacity

2000

2000

2300

1200

1600

800

Note: 1. No settlement through court or outside courts were done for any of the projects.

2, Precautions like installations of Electrostatic precipitator with efficiency of 99.9%, construction of high chimney, treatment of waste water before discharge to waterbody, Planting of lakhs of trees, were undertaken in all projects to prevent environmental pollution.

These are the documents relied on by Mr. Holla which we consider to be of great value in deciding the location of the Thermal Power Project and the Ash Pond in question.

11. Now we will refer to the documents relied on by Mr. U.L. Narayana Rao appearing for the NTPC in WP 6262/1991. In the Statement of Objections filed to this Writ Petition it is stated as follows:

"The NTPC has set up various Super Thermal Power Projects and continue to construct many more in different parts of the Country and it is now setting up one such super thermal power project in Dakshina Kannada District of Karnataka State primarily for the benefit of the people of the State of Karnataka. The list of projects already completed and are under various stages of construction is enclosed as Annexure-R1. The Stage-I of the said project has a capacity of 420 MW with ultimate capacity of 2420 MW. In view of the paucity of power supply in the Southern region and dismal situation with acute power shortages it has been decided to set up the project in question at Nandikur in Udupi Taluk of Dakshina Kannada District. It is submitted that the site selection for this project has been done by the expert team after carrying out the detailed techno-economic studies and minimum displacement of families including elaborate environmental studies. In this connection it is submitted that about 2200 acres of private lands are sought to be acquired out of which about 73% are dry lands.

The subject project was conceived by Karnataka State and Karnataka Power Corporation Ltd. had undertaken the preliminary investigation. Due to reasons best known to the Karnataka State it was decided to get the same executed under the Central Sector. Accordingly the Government of Karnataka requested the Energy Ministry, Government of India to undertake the project in question. The Government of India entrusted the project to NTPC. As per the Central Government directives NTPC established an office near project and started

creation of infrastructural facilities in "May 1989 which are essential to start the main construction work after the clearance of the Cabinet Committee on Economic Affairs (CCEA). As the availability of lands for undertaking the major project activities is much essential the land acquisition activities were started as soon as the site office was established. The request for acquisition of lands to meet the project commissioning schedule was submitted by NTPC to the Revenue Department, Government of Karnataka. In response to such request Deputy Commissioner of Dakshina Kannada had recommended for invoking Section 17 of the Land Acquisition Act 1894 in view of the urgency. The project under question is already recommended by the Public Investment Board (PIB) to Central Government to clear this project in its meeting on this project on 29-11-1990. Cabinet Committee on Economic Affairs has to issue a formal letter of clearance. The proceedings of the PIB recommendation is enclosed as Annexure-R2. Dr. Chokkalingam of Annamalai University had carried out Environment Impact Analysis study and submitted a report recommending this project for implementation. Based on this report the Karnataka State Pollution Control has issued "No Objection Certificate". Copy of NOC is enclosed as Annexure R3. The Department of Environment and Ecology, Government of Karnataka has also given its environmental clearance. A copy of the said is enclosed as Annexure R-3-1."

In the Report of Dr. Chokkalingam, it is stated thus:-

"Environmental Impact Statement (EIS) has been prepared for the proposed Multi Fuel Thermal Power Plant at Nandikur. The proposed power plant site is located at about 35.0 km North of Mangalore near Padubidri on the National Highway No. 17 (Marigatore to Udupi Sector), This site can be categorised as a coastal site as it is situated at about 3 km east of the Arabian Sea in the location described above. The nearest railhead is at Mangalore Junction. The nearest Airport is Mangalore Airport at Bajpe. The nearest sea port is the New Mangalore Port at Panambur.

There is an urgent necessity for the proposed thermal power plant at Nandikur considering the power shortage situation in Karnataka, and considering especially the fast industrial development along the west coast of Karnataka, Nandikur is the only available site on the West Coast of Karnataka, which is suitable for establishing a Thermal Power Plant. The site has a few advantages (Please see item 1,4.12 in the questionnaire, and page 2.1 to 2,3 and 2.8 of this volume).

The proposed Thermal Power Station at Nandikur will be designed as a Multi-Fuel Thermal Power Station which can operate on coal or LSHS. It is proposed to put up the initial units for an electric generation capacity of 2 x 210 MW (coal-fired). The ultimate capacity envisaged would be 1920 MW or 1260 MW to be achieved in 3 stages.

Coal linkage has been established with Talcher coalfields. For the transport of Coal, rail-cum-sea route has been chosen for the first stage. Coal will be

transported from Paradip Port to New Mangalore Port by sea-route (about 2800 km) and from New Mangalore Port to the Nandikur Power Plant site by rail through Mangalore-Karwar Konkan Railway line proposed for construction by the Railway Department. The proposed new railway line would pass through the neighbourhood of Nandikur.

The land requirement will be about 778 hectares (1923 acres) for installing the power station and ash disposal facility, considering the proposed expansions during stages II and III.

Two alternatives are being considered for ash disposal system, namely, (i) to construct Ash Ponds in the nearby dryland area, and reutilizes the effluent for re-circulation, and (ii) to transport the ash-slurry to a coastal point and discharge it into an Ash Dyke system wherefrom the effluent will be discharged into the sea. If alternative-2 is approved, the land requirement will be limited to 335.6 hectares (829 acres).

The Government of Karnataka have granted clearance for land acquisition for the proposed Nandikur Thermal Power Plant, and they have recommended that the proposed power plant will be very essential, in consideration of the inadequacy of the availability of electric power in Karnataka.

The total number of persons affected by the land acquisition scheme would be about 2500 (if Inland Ash Disposal Alternative is chosen). This will reduce to 1200 if the alternative-2 (Discharging Ash Slurry into the sea, through the appropriately-designed Ash Dykes) is approved.

The Nandikur site is the only location on the West Coast of Karnataka, wherein the Dry Land and Wasteland put together forms a major proportion in comparison to the Wet land to be acquired for the power plant and its facilities.

Rehabilitation scheme will be implemented in accordance with the orders of the Government of Karnataka, for the benefit of the persons affected by land acquisition for the project.

Regarding water requirement, about 64,000 m³/hour of sea water will be drawn from the nearby Arabian Sea, for the purpose of condenser cooling water requirement, for the first 2 x 210 MW (coal-fired) units.

Effluents from the condenser cooling system will be transported back into the sea, through an open channel system which will be appropriately designed for bringing down the temperature difference between the sea water temperature and that of the cooling water effluent to be in the order of 8 degrees celcius or less.

A portion of effluents from the condenser cooling system will be used for Ash Disposal in the form of slurry.

Total raw water requirement will be about 390.0 cubic metres/hour. This quantity of water will be drawn from an Impounding Reservoir to be constructed on Mulki

River at a location 15.0 km East of the Nandikur Thermal Power Plant site.

The sanitary waste waters from the power plant area and the colony area will be reutilised for ground water recharge.

Fly Ash reutilization schemes will be implemented by the KPCL. Environmental Monitoring will be undertaken by the KPCL during Stage-I of the project, in respect of air quality, water quality in Mulki River Estuary, Ground water Quality in the neighbourhood of the power plant, and Water quality studies and Bio-Assay studies in the sea water. Thermal dispersal studies will also be undertaken. Coordination will be established with research institutions/universities who are doing similar environmental monitoring studies. An Environmental Management Cell will be formed by the KPCL, to monitor the pollution levels. This Cell will be headed by a Chief Engineer.

Air Pollution Monitoring will be undertaken during Stage-I of the project, and meteorological parameters will be measured at Nandikur location, on a continuous basis, in order to gather field-data which would be useful for evolving an Air Pollutant Dispersion Model applicable to the Nandikur Site.

Land use pattern in the area within 25 km radius around the proposed Nandikur Power Plant site has been studied in depth. It is concluded that the cultivable land acquired for the power plant corresponds to a very small percentage of the total area available for cultivation."

As a matter of fact, this Report exclusively deals with justification for the establishment of this project at Nandikur village, as follows:

"2.1 Location, Layout and Topography:

The proposed site at Nandikur is located at about 35.0 km from Mangalore City, 22.0 km from New Mangalore Port, and 2.0 m km from the National Highway No. 17 (Mangalore-Karwar Sector of the National Highway) and about 3.0 km east of the Arabian Sea.

A layout map of the site is presented in Figure-E1. The site has a total area of about 778.0 hectares (1923.0 acres) which is adequate for installing the power generation station and ash disposal facility, considering the ultimate electric generation capacity of 6 x 210 MW (or alternatively 2 x 210 MW plus 2 x 500 MW plus 1 x 500 MW). The initial installation will be for a capacity of 2 x 210 MW. The total requirement of land will be limited to 335.6 hectares (829.0 Acres) if Ash Disposal into the sea through Ash Dykes is approved.

The site can be categorised as a coastal site as the distance between the site and the Arabian Sea is about 3 km. The site has an insignificant amount of cultivated land and negligible extent of habitation. The site is sufficiently away from any major human settlement and far away from city limits. Vegetation is scarce or thin in the surroundings. The site has an undulating ground level with a contour level ranging from 19.0 metres to 35.0 metres above Mean Sea Level, in the

power plant area. A terraced system of grading, therefore, is proposed to minimise the extent of granting and to reduce site development cost to the extent possible.

The site is presently approachable by Cart-Road branching off from the National Highway No. 17 near Padubidri. The nearest railway station to the proposed site is Mangalore Junction, connecting Hassan Junction (on the Metre Gauge Line) on the East, and Shoranur Junction on the South (on the Broad Gauge Line). The distance between the Mangalore Railway Station and the site is about 35.0 km. The nearest Airport is the Mangalore Airport. The nearest Port is the new Mangalore Port. Figure-E2 indicates the location of the site with reference to Mangalore on the South and Udupi on the North.

2.2. Land Use Pattern: As already stated, it is a gently undulating terrain with scarce vegetation. Rocky outcrops on hillocks exist. Dry weather prevails in the area for more than 9 months in a year. Cultivable land is in very small proportion to dry and waste lands. Paddy cultivation is done in small and isolated pockets of land, and one crop per year is the practice. Coconut plantation and paddy cultivation in Valley-like areas between the hillocks, is practiced in small scales considering the 5.0 kilometre radius around the proposed site at Nandikur.

In the proposed area, there is no endangered species of wild life; no animal or plant of rare species; no place of cultural, historic and other tourist interest; there are no monuments, big buildings or temples of importance within 25.0 km from proposed site.

2.3. Soil Profile: The top soil is sandy gravel, mixed with organic matter, Laterite is available at depths varying from 3.0 metres to 7.0 metres from ground level. Hard rock is available at 10.0 metres.

2.4. Meteorology and Air Quality: The climate at Nandikur is tropical. Mangalore is the nearest point where a meteorological observatory is located. Therefore, meteorological data available for Mangalore can be considered applicable to the Nandikur location.

The ambient air temperature varies between 20.8°C and 33.0°C. The Relative Humidity ranges between 24.0% to 95.0%. The average annual rainfall is about 2500.0 mm. Of this, 90.0% of rainfall occurs during South-West monsoon in the months of June to September.

The wind speed averages around 2.7 m/sec (9.7 kmph). The maximum wind velocity has varied around 37.8 m/sec (136.0 kmph). The meteorological data for Nandikur location is furnished in Table.EI. The Wind Rose Diagram is given in Fig. E3. The proposed Thermal Power Station is to be located at the above said Nandikur site. The first stage will be 2 x 210 MW coal-fired units.

3.0 DESCRIPTION OF THE PROJECT:

3.1. Infrastructure: The proposed Thermal power project will be located at

Nandikur, about 35.0 kilometres North of Mangalore. The area lies in the Udupi Taluk, South Kanara District. The following advantages can be claimed in the case of the Nandikur site for the proposed installation of 2 x 21.0 MW Units:

- a) Availability of adequate land for locating the power station with provision for future expansion upto an ultimate capacity of 6 x 210 MW (or alternatively 1920 MW as described earlier).
- b) Suitability of land from topography and geological aspects.
- c) Easily accessible location with respect to the port and mode of transport of coal to site.
- d) Availability of adequate supply of water to meet condenser cooling water and fresh water requirements.
- e) Facilities for ash disposal.
- f) Facility for transportation of power station equipment and construction materials to site.
- g) Proximity to major load centres in the power system. h) Environmental aspects.

3.2 Basic Station Requirements: The estimated requirements of land, fuel and water for the proposed installation of 2 x 210MW are given in Tables E.2 & E.10. Land requirement will be 336.0 hectares (829.0 acres) for the power station, 443.0 hectare (1094.0 acre) for the disposal of ash on to land, for the ultimate stage of the project, and 27.0 hectares (66.1 acres) for constructing colony to staff.

Coal requirement for the 2 x 210 MW units during Stage-I will be 1.5 million tonnes per year.

Annual requirement of fuel-oil (LSHS), if the power station is operated with fuel oil, will be 0.7 million tonnes per year.

Sea water will be drawn from the Arabian Sea located at about 3.0 km from the power station, and the quantity required for cooling purposes will be 64.000 m³/hour, assuming Once-Through system.

Fresh Water for boiler make-up, colony requirement and miscellaneous services will be 9410 m³/day (392.08 m³/hour).

3.2.1 Fuel and its characteristics: The steam generator of the power plant will be designed for burning 100% coal or 100% oil separately or in any combination of these two fuels with light diesel oil for initial light up and flame stabilisation. The characteristics of the fuel used and that of fly ash are stated in Table E3.

3.3 PLANT AND WATER USE:

3.3.1 Fresh Water: For the proposed Thermal Power station at Nandikur, raw

water will be drawn from Impounding Reservoir to be constructed on Mulki River, upstream of the existing Bola weir. The distance between the Intake point and the power plant will be in the order of 15.0 km. The raw water will be transported through pipes from the source to the power plant.

The quantity requirement of raw water, for the various purposes, inclusive of water supply to the power plant and the staff quarters colony is shown in Table E4.

3.3.2 Cooling Water: Cooling water will be drawn from the Arabian Sea, at a distance of about 4.0 kms from the power plant at Nandikur. The requirement of sea water, for cooling purposes, for the 2 x 210 MW units is estimated to be 64000 m³/hour.

Rate of the water from the outlet of the CW system used for ash handling system will be decided during finalised designs.

3.4 Fresh Water Analysis: The details on constituents of water sample collected from Mulki river is presented in Table E5.

3.5 Sea Water Analysis: The constituents of sea water are presented in Table E6.

3.6 Fuel Handling System:

3.6.1 Coal: The entire system of handling sea-borne coal at Nandikur can be broadly divided into the following:

- a) Unloading coal from ships to coal jetty.
- b) Transporting coal from coal jetty to power station.
- c) Stacking and reclaiming coal at power station.
- d) Feeding coal to boiler bunkers.

Coal will be transported from Paradip Port by ships of 35000 DWT capacity. Ships will have their own paragraph cranes mounted to unload coal from ships. Coal will be transported in wagons to the power plant site at Nandikur along the newly proposed Mangalore-Karwar Broad Gauge Konkan Railway line. On its way is located the proposed coal-stocking yard at Kunjathabailu/Tannirbhavi in the neighbourhood of the New Mangalore Port. The coal will be received at the Crusher Point in the power plant and stacked as per requirement to ensure continued operation of the pulveriser unit.

3.6.2 Fuel Oil: Fuel Oil will normally be used only for start up and flame stabilisation at low loads, and light diesel oil for ignition. Fuel oil and light diesel oil required for the plant is proposed to be brought to power station by rail. However, in case adequate coal is not available, oil will be used as fuel, LSHS, in particular. The requirement of oil will be 2720 inner per day. Fuel oil will be brought by rail, in this case, from Cochin to Mangalore, by the existing Broad Gauge Railway. From Mangalore, it will be brought to the power plant site, by

rail, in the proposed new line between Mangalore and Karwar, as described above.

3.7 Heat Dissipation System: The main heat rejection is in the (sic). Once-Through cooling water system will be used for the (sic) of heat from the steam and sea water will be used as (sic) water.

3.8 Management of liquid and Solid Wastes:

3.8.1 Bottom ash removal system: Bottom ash resulting from the combustion of coal in the boiler falls into two water impounded troughs. From each trough wet bottom ash will be fed to its respective clinker grinder by means of the chain-operated scrapper feeder. The clinker grinder crushes the clinkers of bottom ash to a very small size and feeds the same to a channel, below. High pressure water jets in the channel will sluice the bottom ash into slurry sump from where slurry pumps will convey the ash slurry to the disposal area.

3.8.2 Fly ash removal System: Fly ash collected in the different hoppers viz., economies air-heater, electrostatic precipitator and stack hoppers located in the flue gas path will fall into the respective mixing boxes through motor-operated air lock valves (rotary feeders). These valves will enable ash to fall down into the mixing box at a regulated rate as and when ash is formed in the ash hopper. Fly ash mixes with the low pressure water supplied through nozzles in the annular ring inside the mixing boxes and overflows into the slurry channels below the mixing boxes. At selected intervals all along the slurry channel, high pressure water will be supplied through jet-nozzles to aid slurry transport upto the ash slurry pumps. Suitable provision will be made for dry fly ash collection considering the commercial utilisation of dry fly ash. The total fly ash will be of the order of 1600 tonnes per day on an average for all the 2 x 200 MW units. In all, about 443.0 hectares of land will be acquired for dumping the bottom ash and fly ash, in Ash Dykes. The dry fly ash will be used for manufacture of Pozzolona cement bricks and concrete blocks and for formation of roads. An Ash Dyke of approximate height of 7.0 metres will be constructed to allow the fly ash to be deposited by sedimentation. The volume created in the Ash Dyke will be sufficient for a period of 25 years.

3.9 Flue gas handling: For efficient handling of the flue gas, a multitude stack (common to the 2 x 210 MW Units) will be constructed. The stack height will be 275.0 metres.

4. ENVIRONMENTAL EFFECTS OF PLANT OPERATION: 4.1 THERMAL DISCHARGE

4.1.1 From Flue Gases: The flue gas temperature from the proposed unit will be 140°C at the exit-point of the stack. The inner diameter of the individual flue of multitude stack will be 3.95 metres and the common stack diameter will be suitably designed. The flue gas exit velocity will be 25.0 m/sec as the minimum. The heat emission rate from the top of the chimney will be 1356×10^6 J/Nm³/sec. Actual flue gas quantity at 100% steam generator load for coal-firing is assumed to be 350 m³/sec.

4.1.2 From Coolers Water: A once-through system or circulating water is adopted for the proposed project. It is expected that about 64000 m³ of cooling water per hour at a temperature of approximately 36.6°C (about 5°C more than the sea water temperature) will be led into the sea again after using a portion of the cooling water effluent for converting Ash into slurry, and discharging it into Ash Dykes built in the sea-shore. Re-cycling of the decanted water from Ash-Pond will be attempted, in case of land disposal. The water travelling from seal-well to out-fall structure travels in an open channel over a length of about 3.0 km. during which period the temperature is expected to come down.

When the hot cooling water mixes with the Multi River backwaters or with sea water, depending upon the alternative chosen, the temperature differential comes down to 5°C at the outfall structure, and no impact of this temperature will be felt in the receiving waters between the point of discharge and surrounding zone. Therefore, no adverse effects on the aquatic life is anticipated.

4.2 LIQUID EFFLUENTS

4.2.1 Effluent from water treatment plant: Effluent from the regeneration of the cation resin units in the treatment plant will be generally acidic in nature and that from the anion resin units will be alkaline in nature. The waste water from the water treatment plant would be neutralised, before disposal, in a neutralised chamber. The neutralised effluent is expected to have suspended solids less than 5 ppm, and PH in the range of 7.5 to 8. The neutralised effluents will be discharged into the storm water drainage system of the plant. The storm water drains will be finally discharged into the Mulki River (backwaters of the Arabian Sea). The quantity of effluent generated due to regeneration will be of the order of 200 m³/day. It can also be re-used.

4.2.2 Overflow from Ash Ponds: The 2 x 210 MW units will generate about 3000 m³ of ash slurry per hour. Generally, no treatment is given to this waste water except for the removal of suspended solids in lagoons. Ash ponds covering an area of 443.0 hectares will be acquired for dumping, the fly ash, if alternative 1 is approved. Dyke walls of suitable height will be provided to accommodate ash for 25 years. Minimum National Standards (MINAS) for Thermal Power Plants laid down by Central Board for the Prevention and Control of Water Pollution (CBPCWP) for Ash pond effluents is produced in Table E7, Efforts will be made to satisfy these standards.

The overflow from the Ash ponds are ultimately led out into the recycling network. However, another alternative is also included in the choice viz., to transport the ash slurry in closed pipe lines under pressure and discharge it to the Ash Dykes constructed at the Arabian Sea. The location map is shown in Figure E4.

To limit the suspended solids, the fly ash pond is divided into two compartments. First compartment will have 80% storage capacity. With this two-stage settling facility, the solids carried by the overflow from second compartment will be

within permissible limits. The effluent from the second compartment of this pond will be pumped to the recirculation system in Alternatives 1 or pumped into the sea in Alternative 2.

4.2.3 Chlorine in Cooling water: In the condenser cooling water, residual chlorine of about 0.5 ppm is normally maintained at the condenser outlet. This value would not result in any chemical pollution of sea water and also this meets the minimum National standards for Thermal Power Plant issued by CBPCWP.

4.2.4 Leaching from coal yard and Run-off from Coal handling area; Water collected into drains around coal stocking yard may contain certain percentage of suspended solids and phonetic compounds. The pH is expected to be about 6.0.

It is proposed to provide drains around the coal yard and collect this discharge into one pond (designed for a detention period of 3.5 days) from where the same will be pumped into the ash slurry line.

4.2.5 Boiler Blow Down: The boiler blow down water pH will be in the range of 9.5 to 10.3 and the temperature of water will be approximately 100°C. The boiler blow down is proposed to be led into ash slurry trench. The quantity of boiler blow down water for each 210 MW unit is 4.0 m³/hour. This quantity of water then mixed with large quantity of ash slurry which is about 1500 m³/hour per unit brings the pH range between 7.5 and 8.0 and the temperature to ambient conditions.

4.2.6 Oil water mixture from fuel oil systems: The oil water mixture from the drain stretch in the oil unloading area and from the fuel oil tank farm/pump house area are first led into corrugated plate oil/water separator. The water separated from oil in the oil/water separator will be led into storm water drain finally leading to the sea. The oil from the oil/water separator will be led back to the fuel oil tank.

4.2.7 Sewage from the various buildings in the plant: Sewage from the various buildings in the power plant area will be led into separate septic tanks. The effluent from septic tank will be disposed in soil by providing dispersion trenches. There will be no ground water pollution because of the leaching of the treated effluent from the septic tank. Sludge will be removed occasionally and will be disposed off as landfill at suitable places.

4.3 Air Pollution: The air pollutants emitted from the proposed Nandikur Thermal Plant will consist of:

Suspended Particulate Matter, Sulphur dioxide (SO₂), Oxides of Nitrogen (NO_x), and coal dust particles due to storage/handling of coal (the dispersion of which is limited to the plant area only).

4.3.1 Suspended Particulate Matter: The Indian Emission Regulations (July 1984) stipulated for Thermal Power Stations, prescribe limits for particulates matter emissions as below:

XXXXX

4.3.2 Sulphur Dioxide: The minimum stack height to be maintained for keeping the sulphur dioxide level in the ambient air within the air quality standards is stated below:

XXXXX

The recommended stack height of 275.0 metres will be adopted to limit the concentration of sulphur dioxide within limits. The estimated composition of flue-gas at each stack is shown in Table E9.

4.3.3 Nitrogen Oxides: All the leading steam generator vendors have developed and are offering advanced type burners ensuring low NOx emission within the limits prescribed by the United States EPA. Therefore no additional equipment is required to control NOx emission.

4.3.4 Coal dust particles due to storage/handling of coal: For coal dust control, water spraying arrangement will be provided to spray water into coal stack. Sprinklers will be provided around the stock-pile to suppress dust generation, and to wet the coal by compacting, to keep dust nuisance to minimum.

4.4 Background Air Quality: The background ambient air quality prevailing in the neighbourhood of the proposed Thermal Power Station at Nandikur site has been measured. A detailed presentation on the prevailing Air Quality is given in Volume-2 of this report.

4.5 Impacts of Relocation/Resettlement: It is proposed to acquire 2250.87 acres of land at Nandikur, Palimaru, Inna, Yellur etc. The classification of lands proposed for acquisition are as follows:

Government dry land: 124.96 acres Private dry land 1172.84 acres Coconut Plantation 76.57 acres Wet land 762.29 acres Kharab (Waste) Land 114.21 acres TOTAL 2250.87 acres Lands have to be acquired in a few villages namely, Nandikur, Inna, Patimaru, Yellur, Nitte Kanthavara etc. for the proposed Thermal Project at Nandikur. There are 457 brick-built houses, inclusive of 22 hours affected in the submersion area due to the proposed construction of Dam on Mulki River. The number of persons affected will be about 2500. The main occupation of the villagers is agriculture and agricultural labour work.

If disposal of ash into the sea through Ash Dykes is approved as per Alternative-2, the number of persons affected will be reduced to 1200.

Since most of the land being acquired are dry lands, and the number of persons affected is less, in comparison to the total area being acquired, there will not be much difficulty in implementing the rehabilitation and resettlement scheme for them.

It is suggested that a suitable employment may be provided to one eligible person in each of the displaced family, in accordance with the guidelines of the

State Government during the execution of the project, in addition to payment of cash compensation as per land acquisition proceedings. A detailed resettlement and rehabilitation scheme may be finalised during project implementation stage. The orders issued by the Government of Karnataka, in respect of rehabilitation and resettlement of persons displaced in such projects, may be generously interpreted to offer employment opportunities, in addition to cash-compensation.

4.6 Changes to local economic and social structures: It is suggested that recruitment to all the unskilled labour force and skilled labour force may be made, depending on the availability, from among the local population, during the execution of the project. The project will generate lot of employment to local population during construction and operation of the plant. This is bound to improve the economic condition of the people living in and around the power station area. The new power plant will support several small scale industries and service facilities, thus creating more job prospects to the local people indirectly.

4.7 Occupational safety and health; There is no cause for anxiety regarding the health status of the workers engaged in the proposed thermal plant. The probable atmospheric pollutants emitted inside the plant premises will be limited within the ambient air pollutant standards prescribed by the Government of India for in plant situations. Pollutants, especially that of fly ash in the form of dust particulate matters, will be kept under control by ensuring adequate provisions and safeguards at the inception stage itself. Improvements will be carried out, as and when necessary, in respect of actual practice. Efficient operation of pollution control equipments, especially that of ESP, will be ensured. Fugitive emissions will be effectively controlled, by installing dust removal systems in the various dust-emitting units.

To guard against occupational hazards, safety measures as stipulated under Karnataka Factories Act will be adhered to.

The following precautionary measures will be practiced to protect the environment, thereby protecting the health of the workers in the work-atmosphere:

- i) Coal will be watered through sprinklers in the open coal yard, and moist coal will be conveyed through conveyors.
- ii) Crushing will be carried out in an enclosed shed.
- iii) Overhead crushed-coal conveyor belts are covered with metal sheet covers,
- iv) Pulverising process is close-circuited with the boiler furnaces, to prevent emission.
- v) ESPs are provided for each unit for effective removal of fly ash.

4.8 Noise pollution: All equipment in the power plant will be designed and operated to have the total noise level not exceeding 85 to 90 db. This will meet the requirement of occupational safety and health administration standards. The

permissible noise levels are furnished below:

xxxxx

4.9 Impacts on Aesthetics and Tourism: There are no places of tourist attractions or important monuments close to the proposed power station site at Nandikur and the proposed route of transmission lines.

4.10 Monitoring and Surveillance Systems: Emission regulations of July 1984 stipulate, for Thermal Power Stations, the recommended limits for the emission of Particulate Matter and minimum stack heights to be maintained for keeping the Sulphur Dioxide levels in the ambient air at downwind locations within the air quality standards.

The standards prescribed for treated effluents, in the case of wastewater, will be possible to achieve by installing suitable treatment system for the wastewater, in order to satisfy the standards prescribed by the State Control Board and also to satisfy the Minimum Standards prescribed by Central Board for Prevention and Control of Water Pollution, Government of India.

4.10.1 Air Quality Monitoring Programme: The primary purpose of air quality monitoring is the acquisition of data for comparison with the prescribed standards, and thereby ensuring that the quality of ambient air in the neighbourhood of the power plant is maintained within the permissible levels for the purpose of protecting Public Health and Public Welfare in the area.

4.10.2 Water Pollution and Wastewater Monitoring Programme:

The monitoring schedule for wastewaters generated from various sources in the power plant, to be analysed for various parameters is shown below:

xxxxx

Experienced and qualified persons will be employed for carrying out the air pollution survey, taking care of the sample collection, sample analysis and data interpretation aspects.

5.0 Landscape Architecture: In order to ensure greenary around the power plant, trees would be planted in the surroundings in order to give an aesthetic appearance from the landscape and architectural viewpoints. Routine gardening of these trees will give an added advantage of keeping the ash-filled area free from dry fly-ash, so that re-suspension of fly-ash can be prevented, even under the worst wind conditions. Trees will be planted in the colony area, and gardens, and will be maintained.

6.00 ENVIRONMENTAL GUIDELINES FOR DEVELOPMENT OF INDUSTRIES IN COASTAL AREA

As per the guidelines given by the Department of Environment, Government of India, all structures of the power plant will be located beyond 500.0 metres from the sea water at the maximum high tide, in order to maintain the ecology of sea-

coast. The Karnataka Power Corporation Limited will approach the Committee on Conservation of Sea Shores appointed by the Environment Control Department...for approval for putting up any structures in the 500 metre zone.

7.0 ECONOMICS OF POLLUTION CONTROL

7.1 Budget Allotment: The detailed project cost estimate covers the cost of pollution control and monitoring equipments envisaged for the project which includes cost of ESP, Ash disposal system, High Volume Samplers, Sulphur Dioxide Monitor, NO_x - analyser, State Monitoring Apparatus, Smoke Density Monitor, flue gas oxygen analyser, flue gas combustibles analyser, Flue gas Carbondioxide analyser, sewage disposal system etc. the other equipment and instruments available in the power plant laboratory will also be used for the Environmental Monitoring Scheme.

The O & M cost of the project calculated at 2.5% of the total project cost includes monitoring cost for environmental aspects also. In the total O & H Cost, the annual monitoring cost for environmental aspects will be of the order of Rs. 50 lakhs.

As the meteorological observatory at Mangalore is at a distance of about 20 kilometres from the proposed power plant site at Nandikur, it becomes necessary to measure meteorological parameters at Nandikur itself, probably by creating the necessary infrastructure in the Staff Colony area, in order that meteorological parameters so measured at Nandikur, can be correlated with the air quality data gathered in the neighbourhood of the power plant. Such an effort will be useful to generate the necessary documentation, for future guidance, at the time of planning for further expansion of the Nandikur Thermal Power Plant during Stages II & III.

7.2 Scheme for Water Quality Measurements:

Environmental Monitoring Scheme, to be undertaken by the Karnataka Power Corporation Ltd. immediately after the power plant at Nandikur is commissioned at Stage-1, would include the measurement of water quality parameters in the backwaters of Mulki river, along the stretch between the point at which the Ash Pond effluent enters the Mulki River, upto the Estuary point near the Arabian Sea. All the routine parameters of water quality measurement will be included, in addition to introducing the measurement of Heavy Metals concentration in Mulki River water along the stretch described above. For this purpose the background levels will be gathered by resorting to weekly samples during the construction stage of the project, during which period, the samples will be sent to the Karnataka Engineering Research Station at Krishnarajasagar for the analysis of sophisticated water quality parameters requiring conventional and sophisticated instrumentation facility. Parameters such as temperature, pH, D.O. conductivity etc. will be measured by the KPCL Staff- However, the entire analysis can be done in Nandikur Power Plant Laboratory itself, by creating the necessary infrastructure facilities during Stage-1 of the project.

A similar scheme will be followed for the measurement of sea water quality parameters by collecting water samples at the location in the Arabian Sea to which the Ash Dyke effluent will be discharged, in case the Alternative-2 is approved for ash disposal. This data will be useful later on for assessing the impact of wastewater/Ash Dyke effluent into the natural bodies of water.

The water quality data gathered along the Mulki River, and similar data gathered in the Arabian Sea will be used for assessing the impact of wastewater/ash-dump effluents on the aquatic life inclusive of marine oysters, coral reefs, if any, shrimp and other fish, crabs, phytoplankton and zoo-plankton, from the view point of thermal pollution dispersal aspects in the sea water, and dispersal of heavy metals concentrations in the river back waters/sea-water. Assessment of water by biological indicators in the natural waters will be carried out, in a planned programme, in coordination with the nearest teaching institution. Assistance and theoretical guidance will be availed in this relevance, from the appropriate Research Institutions/ Universities.

EMERGENCY PLANNING:

Disaster planning for meeting any emergency/accident situation will be included in the infrastructure. Fire-fighting service unit will form a part of the Thermal Power Plant Campus at Nandikur so that the same Fire Fighting Unit can attend to emergencies at the plant/colony/adjoining areas."

Dealing with ash disposal, it gives two alternatives. The second alternative for ash disposal in Arabian Sea which is thought of, is detailed as follows:-

"Alternative-2: Ash disposal in Arabian Sea:

a) The following alternative methods of dumping of ash slurry into the sea are possible:

i) by dumping the ash slurry directly into the sea (relatively nearer to shoreline) without construction of any dykes.

ii) By dumping ash slurry deep inside the sea (about 5 km from shoreline) by taking pipelines upto that point

iii) By dumping ash slurry in the Arabian Sea and containing the ash by constructing dykes around the ash disposal area.

b) The alternative of dumping the ash slurry directly into the sea without any retaining dykes would be technically unacceptable to pollution control authorities. Also discharging about 40 million tonnes of ash directly into the sea would not be acceptable to the Fisheries Authorities and Port Trust. Even in the Power Station where this practice is in vogue, which was installed more than two decades ago, measures are being taken to identify inland areas to dump the ash slurry. Thus this alternative was ruled out on technical grounds.

c) Dumping of ash slurry well inside the sea (about 5 km from shoreline) will also

not meet the approval of various authorities as outlined above.

d) It is therefore considered that the only viable alternative of dumping ash slurry in the sea is to contain the ash slurry by constructing ash dykes so that discharge of pollutants is controlled within acceptable limits.

e) It is proposed to take an area of 1.5 km into the sea and 3.0 km along the sea shore and construct a rectangular dyke. The shoreline is proposed to be used on one side to minimise the dyke cost.

f) The rectangular area surrounded by dykes will be provided with a weir at the top of dyke to enable clear water to flow out into the sea. Ash slurry is pumped from the power house and slurry pipelines are run on the ash dyke. Ash from the ash slurry will settle down when the slurry is pumped into the pond. Thus the clear sea water will overflow through the weir that is provided.

g) The height of the dyke from sea bed will vary from 10 metres to 14 metres depending upon depths available and the maximum tide level of about 1.5 m above chart datum (obtained from the Admiralty chart). Considering this and the required ash dump height of 9 metres, the dyke height in the extreme side of the disposal area works out to about 14 metres (i.e., about 3 to 4 metres above sea water level).

h) It is expected that the sea water overflowing through the weir will not contain any objectionable solid particles although there are no mandatory guidelines in regard to this.

i) Similar type of ash disposal into the sea by constructing the ash dykes is in existence for Tuticorin T.P.S. for Sikka T.P.S., ash dykes have also been constructed in the sea. The unit is expected to be commissioned shortly. It may not be noted that both at Tuticorin and Sikka, the sea is quiet and shallow whereas near Mangalore it is rough as well as deeper. Considering the wave heights prevalent in the off-shore environs of Mangalore, it will be necessary to provide suitably designed rubble-around embankments (i.e., dykes) comprising of armour layer, secondary layers and an internal core, of preferably sized stones so that the structure is safe against the action of waves."

Therefore, every aspect of the matter had been dealt with. Then again while considering the representation of the petitioner Balakrishna Shetty, the Environmental Appraisal Committee felt that the clearance may be subject to the following conditions:-

"The Committee felt that project could be considered for clearance subject to the following conditions:-

Conditions stipulated by State Government will be met.

Study for seepage of sea water as mentioned above will be carried out.

A green belt will be developed around the power plant.

It should be ensured that use of agricultural land is kept at the minimum and, to the extent possible, barrenis used for ash pond and other activities. The aspects relating to displacement of population and compensation should also be looked into."

As is rightly urged in the Statement of Objections, if there has been clearance from Government of India, Planning Commission, Central Electricity Authority, Karnataka State Pollution Control Board, Department of Ecology and Environment (Government of Karnataka), Administrative Ministry in the Department of Power (Government of India), Ministry of Finance and Public Investment Board, what remains is only the clearance by the Cabinet Committee on Economic Affairs which is stated to be formal. We are unable to see how the petitioners could complain of any environment pollution and non-application of mind. We have already extracted the observations of Ranganath Misra, J., as he then was, in Rural Litigation and Entitlement Kendra and Others Vs. State of Uttar Pradesh and Others, . We will only reiterate that a balance between preservation of ecology and utilisation of modern technology has been arrived at by an Expert Body on the basis of appropriate advices. Therefore, it is no use for the petitioners to contend that unless there is clearance of the Project, the lands could not be acquired. We have already seen how this is a time-bound programme. The matter cannot brook delay at all as it would cause to the Public Exchequer and the Nation serious financial implications. No doubt the petitioners may have a say in view of Dahanu Taluka Environment Protection Group and Another Vs. Bombay Suburban Electricity Supply Company Ltd. and Others, ; but they cannot assume that they alone are interested in safeguarding the environment and that the Authorities are oblivious to this. In such cases we should only remind ourselves what the Supreme Court said in AIR 1997 SC 1109 in para-60 which reads thus:-

"60. It is only when Courts are appraised of gross violation of fundamental rights by a group or a class action or when basic human rights are invaded or when there are complaints of such acts as shock the judicial conscience that the Courts, especially this Court, should leave aside procedural shacklete and hear such petitions and extend its jurisdiction under all available provisions for remedying the hardships and miseries of the needy, the underdog and the neglected. I will be second to none in extending help when such help is required. But this does not mean that the doors of this Court are always open for anyone to walk in. It is necessary to have some self-imposed restraint on public interest litigations."

Examined in the light of the above, we find there is no violation of any Fundamental Right.

12. In the result, these Writ Petitions fail and are dismissed. No costs.