एनटीपीसी
NTPC
A MAHARATAN COMPANY

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)
(Formerly National Thermal Power Corporation Ltd.)
केन्द्रीय कार्यालय/Corporate Centre

Ref: CC:ESE:9518:2016:GEN:7D

Date 02.06.2016

Director - IA (Thermal),
Ministry of Environment & Forests & Climate Change,
India Paryavaran Bhawan,
Jor Bagh, Aliganj,
NEW DELHI-110 003.

SUB: Sipat STPP, Stage-I (3x 660 MW) at Dist. Bilaspur in Chhattisgarh by NTPC Ltd. – Reconsideration of EC Amendment for permission of coal transportation in open wagons

MOEF Ref: J-13011/10/1996/IA.II (T) dated 08.09.2014 (EC accorded on 22.02.1999)

Dear Sir,

With reference to minutes of EAC meeting held on 31.03.2016, the pointwise clarifications to the issues raised therein are enclosed as Annexure-I.

It is requested to accord permission for transportation of coal in open wagons adopting the measures to counter any dust problem in line with action plan submitted to MOEF&CC.

Thanking you,

Yours faithfully,
For & on behalf of NTPC Limited,

(R. K. Baderia)
GM & HOD (Env. Engg.)

Encl: as above

अभियांत्रिका कार्यालय परिसर, प्लाट नं. ए–8ए, सैक्टर–24, पोस्ट बाक्स नं. 13, नोयडा (उ.प्र.) पिन–201301
ENGINEERING OFFICE COMPLEX, Plot No. A-8A, Sector-24, Post Box No. 13, NOIDA (U.P.) Pin-201301
टेलिफोन : 0120–2410801 से 2410820, 0120–2410333 (10 लाइने) फैक्स : 0120–2410136, 0120–2410137
Telephone : 0120-2410801 to 2410820, 0120-2410333 (10 Lines) Fax : 0120-2410136, 0120-2410137
पंजीकृत कार्यालय : एन. टी. पी. सी. भवन, स्कोप काम्पलैक्स, 7, इंस्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली – 110003
Regd. Office : NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodhi Road, New Delhi-110003

Annexure-I

Pointwise clarifications/replies on deliberations in EAC meeting held on 31.03.2016 regarding EC amendment for Transportation of Coal in Open Wagons

S. No.	Deliberations by EAC	Response/Action by NTPC
2.7.2 (a)	Noted that the EC condition for carrying coal in closed wagons had been stipulated as far back as in April 2002. NTPC however had been carrying coal all these years, and was continuing to carry coal even now, in open wagons. This was thus a violation of the EC condition of April 2002.	EC for Sipat STPP Stage-I was accorded by MOEF vide letter dated 22.02.1999 for a capacity of 4x500 MW later amended for a revised capacity of 3x660 MW vide letter dated 30.04.2002. After accord of EC dated 22.02.1999, NTPC approached MOEF vide letter dated 13.07.2000 seeking amendment in the condition under deliberation, citing various technical constraints in order to implement the same. Excerpts from MOEF's letter dated 19.07.2000 is as under. **Quote** "In this regard to amendment in condition No.2 (viii) regarding transport of coal from Korba coal fields in closed wagons, NTPC may like to indicate alternative(s) to closed wagons to avoid dust pollution. The purpose is to ensure that transportation of coal by Captive MGR should not result in emission of fugitive dust." **Unquote** In response to the above, NTPC vide letter dated 09.08.2000 again approached MOEF citing various technical constraints in implementation of closed wagons re-iterating non-availability of these wagons in India for loading/ unloading/ transport. NTPC also assured that no dust pollution during transportation shall take place due to large size of the coal (i.e. >250 mm).

		The copies of the communications mentioned above are enclosed at **Annexure-A** for ready reference. As no further clarification was sought by MOEF, the issue was considered closed. Further, as NTPC has ensured that there is no dust pollution due to coal transport in open wagon, the above mentioned condition is deemed to be complied in letter and spirit and there is no violation of any condition. Later The three units under Stage-I were commissioned on 01.10.2011, 25.05.2012 & 01.08.2012 respectively. Further, the EC for Sipat STPP Stage-II was accorded vide letter dated 08.06.2004, with no stipulations for transportation of coal in closed wagons. As the units under stage-II were commissioned prior to Stage-I (On 20.06.2008 & 01.01.2009 respectively) the MGR system was commissioned with open wagon system. When the trial of stage-I units started, the same coal transportation system was used with suitable mitigation measures. NTPC is operating 23 coal based power plants (including JV) with. In addition, 16 nos. coal based power projects (including JV) are under construction. It is pertinent to mention here that EC's of all these projects operating/ under construction stipulate coal transportation with open wagons/ closed conveyors only. To the best of information available with NTPC based on the data available on MOEF website, no thermal project other than NTPC Sipat STPP Stage-I has been stipulated with such a condition of coal transportation through closed wagons. Further, with NTPC's operational experience of

		more than four decades, it is observed that the system/ infrastructure for transportation of coal in closed wagons does not exist in India. In view of above and due to practical constraints of transportation of coal in closed wagons, the non-compliance of the said EC condition should not be treated as its violation.
2.7.2 (b)	Noted that NTPC had been asked (vide the Ministry's letter dated 08.9.2014) to submit the action plan referred to in para 2.7.1 (ii) above within one year (i.e. within Sep 2015), but NTPC had done so only in March 2016, thus again being in violation of the EC condition of Sep 2014. In addition, the action plan for carrying coal in a cleaner way, submitted by NTPC, lists out only standard measures, and does not refer to anything out of the ordinary.	The action plan contains the standard mitigation measures being used in all over India to mitigate fugitive emissions during coal transportation. NTPC has already implemented all measures as suggested in Action Plan and transported coal in cleaner way which ful-fill the purpose of EC condition letter dated 08.09.2014. However, NTPC approached MOEF in March, 2016.
2.7.3	The Committee was unable to appreciate why the condition of coal transportation in closed wagons had been stipulated in the 2002 EC, if according to NTPC, this was not the "general practice". The Committee was also unable to appreciate why the matter had not been taken up by NTPC with the MoEFCC in 2002 itself. The Committee was therefore of the view	The basis for stipulation of the condition of coal transportation in closed wagons by MoEF could not be traced in NTPC's record. In the year 1999-2000; the Minutes of Meeting of EAC were not published and the people involved in clearance process have since superannuated. Therefore it is difficult for NTPC to establish inclusion of such stipulation in EC. It may however be assumed that this condition was stipulated by EAC & MOEF as an endeavor to improve the coal transportation system. NTPC communicated to MOEF right after the accord of EC that this condition is not practical to implement and requested for amendment.

	that before it could consider NTPC's present request for transportation of coal in open instead of closed wagons, it would be necessary to look at why this condition had been stipulated. The Committee therefore requested the Ministry to examine the earlier records so that some light could be shed on this. Member Secretary EAC was requested to inform the Committee of the outcome of such an examination when this agenda item was next taken up for EAC's consideration.	The chronological history of communications has already been given above.
2.7.4	Similarly, the Member Secretary, EAC was requested to examine the EAC minutes of 09.01.14, as well as the subsequent processing till the issue of EC amendment vide the Ministry's letter of 08.9.2014, so that it could be better understood why the EAC had recommended NTPC's request for transportation of coal in open wagons, but this recommendation was only for a limited period of one year. Member Secretary EAC was requested to inform the Committee of the outcome of such an examination when this agenda item was next taken up for EAC's consideration.	MOEF&CC to reply. However, NTPC while seeking amendment to the condition pertaining to transportation of coal in closed wagons had put various constraints for implementation of the condition in practical as follows: 1. Technological constraints for transportation of coal in closed wagons. 2. There is no technology available in India/ Indian railway for loading/ unloading of coal in closed wagons. Closed wagon would require manual loading and hence not feasible. 3. Coal transported by open wagon is of > 250 mm size and does not generate fugitive emissions. 4. It is general practice in India to transport the coal in open wagons with suitable measures for control of fugitive dust emissions. The same has been envisaged in

		Sipat STPP also. 5. Water is being sprayed on top layer of coal in open wagons to mitigate fugitive emissions, if any. It is therefore anticipated that EAC while recommending the transportation of coal in open wagons, considered the above mentioned constraints and facts.
2.7.5	The Committee requested NTPC to also check up its earlier records. The proposal was accordingly deferred till the earlier position became clearer.	NTPC has gone through all the available records related to this issue. The relevant documents related to Environmental Clearance and its further amendment are enclosed as Annexure-A for your ready reference.
2.7.6	Regarding the water spraying system on the open railway wagons carrying coal over a distance of about 40 km from the source to TPP of NTPC, the PP was advised that since water shortage in the area is acute, particularly in dry months and is just not available even for irrigation in adequate amounts, PP should study alternative methodologies/ technologies being utilised including abroad, to prevent coal dust blow from moving open wagons carrying coal, if any. The results of this study should be submitted within one year.	Sipat STPP is nearly a zero discharge power plant with optimum usage, re-use and recycling of water. The water thus used for sprinkling during loading/ unloading/ transportation of coal is treated effluent. Only small quantity of water is being used in mid-section of MGR for water spraying. NTPC will explore the alternative methodologies/ technologies being utilised in India and abroad, to prevent coal dust blow emanating from moving open wagons carrying coal and their feasibility will be ascertained with respect to Indian scenario.
2.7.7	Further, to study the impact due to coal transportation, the PP shall carry out ambient air quality monitoring as well as short & long term health survey of	Due to large size of the coal (>250 mm) and proper mitigation measures such as water spraying during loading/ unloading/ transportation there is no dust pollution due to fugitive emissions, if any, takes place along the way. However, NTPC as a responsible

	people in villages/habitation within one km on either side of the railway track stretching from source to TPP. Such studies should be carried out every six months, and the reports should thereafter be submitted to MoEF&CC.	corporate, has already initiated the process of undertaking these studies. Action has already been initiated for AAQ monitoring and health survey.
2.7.8	Detailed reply to the issues raised by the ERC in their letter dated 30.03.2016.	Most of the points raised by ERC are not relevant to Indian conditions and related to pollution from other mode of coal transportation (viz road, waterways, port transport etc.) in other countries (USA, Australia etc.). However, the point-wise reply to ERC queries is enclosed as **Annexure-B**.

Annexure-A

List of letters/communications relevant to issue of closed wagons and its amendment in Environmental Clearance of Sipat Stage-I (3x660 MW)

S.N.	Description of Documents	Ref. No.	Date	Remarks
1	Copy of Environmental Clearance for Sipat Stage-I (2000 MW)	J-13011/10/96-IA.II(T)	22.02.1999	EC for 2000 MW. Closed Wagon condition mentioned.
2	Letter from NTPC regarding adopting supercritical technology and change in configuration of stage-I (from 4x500 MW to 3x660 MW)	CC:ESE:9518:2000:GEN:05D	23.03.2000	A brief of supercritical technology and consequent changes envisaged were presented.
3	Copy of NTPC letter requesting various amendments in EC including change in capacity, transportation of coal in open wagons, change in coal characteristics	CC:ESE:9518:2000:GEN:05D	13.07.2000	Permission for change in coal characteristics and transportation of coal in open wagons in reply of EC letter.
4	Letter from MOEF seeking some additional information for change in Sulphur content and change in unit configuration.	J.13011/10/96-IA.II(T)	19.07.2000	MOEF also suggested NTPC to indicate alternatives(s) to closed wagons to avoid pollution. It also clarified that purpose of this condition is to ensure transportation of coal by captive MGR should not 5result in emission of f6ugitive dust.
5	Letter from NTPC submitting the required information MOEF and clarifications on closed wagons. NTPC also request to permit coal transportation by	CC:ESE:9518:2000:GEN:05D	09.08.2000	T7he letter mentions “It is to 8clarify that there is no technology for loading/unloading of coal in closed wagons. Generally the coal of (-) 250 mm size is transported in open

	open wagons with bottom discharge.			wagons to facilitate mechanical loading which would not result in fugitive emission."
6	Letter from MOEF regarding EC amendment for change in fuel composition and unit size of Stage-I (from 4x500 MW to 3x660 MW)	13011/10/96/IA.II(T)	30.04.2002	Capacity and unit size changed from 2000 MW (4x500 MW) to 1980 MW (3x660 MW).
7	Letter from NTPC regarding change in source of fuel and coal transportation in Open wagons	CC:ESE:9518:2013:GEN	22.05.2013	NTPC again requested to MOEF for permission of coal transportation in Open wagons. It was clarified that it is general practice in India to transport the coal in open wagons with suitable measures for control of fugitive dust emissions.
8	Letter from MOEF regarding EC amendment for change in source of fuel and coal transportation in Open wagons for one year	J-13011/10/1996/IA.II(T)	08.09.2014	Transportation of coal in open wagons with suitable measures for one year.

Remark: Copy above letters is enclosed for ready reference

Annexure-B

Pointwise Reply of ERC letter regarding NTPC Proposal put in EAC meeting on 31.03.2016.

ERC has referred to several reports downloaded from the Internet. Most of points raised in these reports are not relevant to present issue i.e. Coal transportation in open wagons as presented below.

A brief analysis of reports by ERC is as follows.

S.No.	Issues raised by ERC	Comments/Reply by NTPC
	Air pollution	
1	Approximate quantification of coal dust: In 2009, BNSF Railway publicly testified that a coal car can lose up to 645 pounds of coal dust during a 400-mile journey. *http://thinkprogress.org/climate/2014/02/10/3270701/coal-rail-lines-health/*	This is not a scientific report, but a news article published in Think Progress website. The study referred is related to general rail route of USA which is difficult to compare with Sipat MGR Rail route in absence of detailed scientific data. The dust emission from a coal wagon shall depend on the particle size of the coal. In Indian power stations, coarse coal (-250 mm) is brought from mines and crushed into fine powder at the power plant itself in closed environment. Hence the likelihood of the fugitive emissions is much lower. However, NTPC is using cleaner way of coal transportation by water spraying on top layer of coal which eliminate the fugitive emissions. Further spraying of water at point of loading, in route and at the point of unloading eliminates the risk of fugitive emissions.
2	Coal dust causes air pollution: Railroad locomotives, which rely on diesel fuel, emit nearly 1 million tons of nitrogen oxide	The issue under consideration is fugitive emissions of coal transportation rather than emissions from Diesel locomotives, which is same irrespective of the fact whether it is

	(NOx) and 52,000 tons of coarse and small particles (in the United States.) Coal dust blowing from coal trains contributes particulate matter to the air. *http://www.ucsusa.org/clean_energy/coalvswind/c02a.html#.VvkXNuJ95d*	transported in open wagon or closed wagon. For emissions of coal dust, please refer to reply at Para-1.
3	Diesel contributes to air pollution: Diesel emissions from coal transport can be a significant contribution to local air pollution *https://noharm.org/sites/default/files/lib/downloads/climate/Coal_Literature_Review_2.pdf*	This is a report from University of Illinois and Health care focusing on the health effects from use of Coal (Overall perspective) rather than transportation of Coal. This specifically states that the health effects from exposure to pollutants resulting from Coal transport is not included. In view of the above, it is not relevant in the present context of "Coal transportation in Open Wagon versus Closed Wagon". Further in the Background section of the report, it states that " Diesel Emissions from coal transport can be a significant contribution to local air pollution" which is not likely to reduce even if the coal is transported in Closed Wagon.
4	Dust & Vehicular Pollution: As well as the environmental and health impacts from blowing coal dust, there is also the air pollution from the vehicles themselves *http://www.greenpeace.org/new-zealand/Global/new-zealand/report/2007/1/enviro-impacts-of-coal.pdf*	Similar to Para -3 above, it is a Greenpeace briefing on overall perspective for use of coal, with a passing remark that "Trucks, rail and barges used to transport coal all affect air and water quality. As well as the environmental and health impacts from blowing coal dust, there is also the air pollution from the vehicles themselves". The comments of coal dust & its control are given in para 1 above.
	Water pollution	
5	Waterway Pollution: Marine scientists have expressed	This is a factsheet from clean Air Action Network on "The Case for covering &

	concern to the Queensland Government about the toxic impacts of coal dust washing into coastal waterways. In the USA, successful legal cases have prosecuted coal transportation companies for failing to prevent coal from entering waterways from uncovered coal wagons. *http://www.cleanairaction.net.au/coal_wagons_and_particle_pollution*	Washing Coal Trains". However, the report concludes as follows:- "In response to community campaigns for covering wagons, the coal industry and some government agencies advocate the cheaper alternative of veneering coal trains with substances Based on latex or organic material such as pineapple juice. There is no independent evidence that veneering delivers the result of lowered coal dust emissions from coal Wagons".
6	Study on coal cars pollution: "This study proves that coal trains are polluting the Columbia River Gorge National Scenic Area," "This study by Dr. Jaffe proves beyond a doubt that trains transporting coal in open rail cars are polluting our parks, scenic areas and waterways and are endangering the health of every community along the railroad tracks. It also proves that Burlington Northern's denial of its coal dust problem and its claims that spraying surfactant on coal cars eliminates the dust are nothing more than a smokescreen to avoid culpability for its pollution and the costs of fixing the problem."	This is a Newspaper article from Thailand, relating to open transport of Coal in barges, then on land & open storage of Coal, spread of coal dust due to wind and rain. The comments on coal dust & its control has already been covered under Para -1.
	<u>Health issues</u>	
7	Coal dust causing health disorders and river pollution: Villagers from seven tambons in Nakhon Luang district have complained of prolonged air and noise pollution from coal and	The refrred study is no way relevant to this proposal. ERC has cited the examples of pollution due to coal transportation by waterways of Thailand. The village referred is located nearby the water transport hub and large quantity of coal and flour

	flour transports for more than 10 years. They blame it for health problems endured by locals, and a river contaminated with fallen coal dust. *http://www.nationmultimedia.com/national/Ayutthaya-villagers-fighting-decade-old-coal-pollu-30280413.html*	transport is being handled by ships. However, in case of rail/MGR, pollution can be effectively controlled as mentioned in Para-I above.
8	Open coal transport, a cause for lung disorders in Dhanbad: MLA Raj Sinha took up the matter, sending a letter to chief minister Raghubar Das to draw his attention towards the plight of coal town residents, who are prone to various lung disorders like bronchitis, tuberculosis etc, because of the practice of transporting coal in open vehicles by BCCL. *http://www.telegraphindia.com/1151209/jsp/jharkhand/story_57361.jsp#.VvkXh-J95dg*	Again it is a newspaper article from Jharkhand relating to coal transportation in open road vehicles through densely populated areas. As the movement of vehicles on road involves more lateral and vertical jerks as compared to train movement, the spillage & dust pollution is likely to be higher. It is a practice in NTPC to use covered truck whenever coal transportation is done through road (e.g. Mouda STPP for one year). However, in case of rail/MGR, it is much less and can be effectively controlled as mentioned in Para-I above.
9	Coal dust causing respiratory illnesses and environmental hazards: Coal dust stirred up during the mining process, as well as released during coal transport, which can cause severe and potentially deadly respiratory problems. Exposure to particulate matter: It has been linked to a range of adverse health outcomes, including modest transient changes in the respiratory tract and impaired pulmonary	This is a WHO Report on exposure to Air Pollution, with no specific reference to coal transportation in Open Wagons. The current proposal of NTPC is not related to coal mining and vehicular pollution in urban area. This article shows the health impact due to outdoor pollution in Urban areas which constitute all sources (vehicular pollution, road side dust, combustion of fossil fuels, deliberate biomass burning, industries, coal mining, coal transportation, volatile organic compounds released from

	function, increased risk of symptoms requiring emergency room or hospital treatment, and increased risk of death from cardiovascular and respiratory diseases or lung cancer. Particulate matter is estimated to cause about 8% of deaths from lung cancer, 5% of deaths from cardiopulmonary disease and about 3% of deaths from respiratory infections. Transportation-related air pollution, which is a significant contributor to total urban air pollution, increases the risks of cardiopulmonary-related deaths and non-allergic respiratory disease. Some evidence supports an association of transportation-related air pollution with increased risks of lung cancer, myocardial infarction, increased inflammatory response and adverse pregnancy outcomes (e.g. premature birth and low birth weight). *http://www.who.int/ipcs/features/air_pollution.pdf*	trees, wind-blown soil, dust storms, sea spray etc.). This article is not specifically describing the health impacts due to coal transportation in open wagons by rail. NTPC as a corporate citizen, is implementing all measures to prevent fugitive dust emissions during transportation of coal. However NTPC has agreed to carry out six monthly health survey in nearby villages of MGR Route to assess the health impact, if any and plan accordingly.
	Recent action to stop coal dust pollution	
10	At MPT Goa: Following an order from the high court of Bombay at Goa allowing the unloading of a coal consignment at Mormugao Port Trust's (MPT) berths 10 and 11, Goa State Pollution Control Board (GSPCB)	This case is related to coal handling in commercial Port. In case of Sipat STPP water sprinkling is already being done during coal handling and the coal is being transported by rail only.

	on Friday issued directions to MPT that coal and coke presently in the stockyard should not be transported, handled or shifted but properly covered with tarpaulin. Shraddha Ispat Pvt Ltd had approached the high court after GSBCP on September 24, stopped coal and coke handling operations at berths 10 and 11 saying measures taken are not adequate to control pollution. *http://timesofindia.indiatimes.com/city/goa/Dont-transport-coal-from-stockyard-Goa-State-Pollution-Control-Board-to-Mormugao-Port-Trust/articleshow/16596053.cms*	
11	At Mumbai: A victory for the city, the Mumbai Port Trust has decided to put an end to its coal handling operations in Sewri. TOI has campaigned against the port trust's handling of coal in a series of articles highlighting the extent to which the coal has devastated the environment and severely affected the health of those living around it. *http://timesofindia.indiatimes.com/city/mumbai/Mumbai-Port-Trust-to-stop-handling-coal-victory-for-anti-pollution-drive/articleshow/48840685.cms*	This is a news article from Times of India related to coal handling in ports located in mid of dense population of metro city of Mumbai. This is an entirely different situation as compared to Sipat STPP, where all preventive measures have been taken as described under Para-1.
12	**<u>Suggestion</u>** NTPC Sipat is already a nuisance in the region. Besides air and water pollutions, its ash ponds are known to have caused soil and ground water pollution. It	NTPC Sipat is being operated with full compliance of environmental norms. Being a pioneer of Super Critical Technology in India and transmission system of 765 kV

	should not be allowed any more leeway. No transportation of coal by open wagons should be allowed.	for the first time in India are the most unique attributes. Sipat project has 100 mtr wide peripheral green belt, submerged ash dykes and state-of-the-art technology for environment management. The following important measures have been taken to reduce the pollution from Sipat STPP Stage-I. a. Installation of Supercritical boilers resulting better efficiency and low carbon emissions in comparison to conventional boilers. b. Zero discharge plant ensures no water pollution from effluents. c. Ash ponds: submerged ash dykes ensures no fugitive emissions. Regular Ground water monitoring results show that all parameters are within permissible limits. Ash water recirculation system ensures the reuse of water. As mentioned earlier, the coal transportation in entire country is undertaken through open wagons only and stipulating the closed wagon in just one project will not help. Stipulations should be based on prevailing practice as well as technical constraints. In fact ERC in above points has informed that developed countries like USA, Australia is using open wagons for coal transportation.

ANNEXURE - I

No.J.13011/10/96-IA.II(T)
Government of India
Ministry of Environment and Forests

Paryavaran Bhavan
CGO Complex,
Lodi Road,
New Delhi-110003.

February 22, 1999.

Subject : **2000 MW Sipat Super Thermal Power Project Stage-I, Bilaspur District, Madhya Pradesh of M/s National Thermal Power Corporation Ltd. (NTPC) – Environmental Clearance reg.**

The undersigned is directed to refer to communications No.33/3/9518/F-appln-97 dated 15th May, 1997, No.33/3/9518-F/98-Env.Clea./9235 dated 25th May, 1998 and No.33/3/9518/F-98/9/235 dated 11th August, 1998 from M/s National Thermal Power Corporation Ltd. (NTPC) regarding the above mentioned project.

2. The proposal regarding setting up of 3000 MW Sipat Super Thermal Power Project at Sipat, Bilaspur District, Madhya Pradesh has been examined from environmental angle on the basis of information submitted by the proponents. Environmental clearance is, however, accorded for 2000 MW capacity as Stage-I subject to implementation of following terms and conditions –

i) All the conditions stipulated by the Madhya Pradesh State Pollution Control Board vide their letter No.3574/TS/MPPCB/97 dated 5th March, 1997 should be strictly implemented.

ii) Two stacks of height 275 mts with two flues in each stack and continuous monitoring facility should be installed. Exit velocity should be maintained at 23.42 mts/sec as the predictions have been based on the same.

iii) Electro-static Precipitator having efficiency of not less than 99.8% should be installed and it should be ensured that particulate emission would not exceed the prescribed limit of 100 ug/m3. Adequate space for Flue Gas Desulphurisation Plant should be provided in the plant layout for its installation if required in future.

iv) Closed Circuit Cooling Device with induced draft should be provided and it should be ensured that only minimum water is drawn for makeup purposes.

v) Noise level should be limited to 85 dBA and regular maintenance of equipments be undertaken. For people working in the area of generator halls and other high noise areas, ear pluggs should be provided.

vi) For controlling futitive dust, regular sprinkling of water in coal handling and other vulnerabale areas of the plant should be ensured.

vii) Afforestation should be undertaken covering an area of 215 acres and the programame should be implemented in a phased manner. A norm of 1500-2000 trees per ha should be followed. The afforestation plan should be submitted by 31st March, 1999.

viii) Coal should be used @ 10 MT/year for Stage-I with sulphur content not exceeding 0.24%. The coal should be transported from Korba Coalfields by Captive MGR in closed wagons to avoid dust pollution.

ix) As per the proposal submitted for Ash Utilisation, it should be ensured that fly ash is used in cement industry , brick making and in raising the ash dyke etc. Efforts should also be made in the area of mine filling, land development and agriculture etc. For brick making, about 50 acres of land with all infrastructure facilities should be earmarked. Full fly ash utilisation should be ensured at the end of 9th year from the date of commissioning of the project.

x) Ash Pond design should be on similar lines to the one adopted for Talcher Super Thermal Project, Orissa. In the non operative lagoon, the layer of earth/bottom ash should be spread over the ash disposal area so that fugitive dust could be controlled. In addition, for dust suppression Sprinklers should also be provided. Special care should be taken to avoid any inconvenience to residents of Kaudia Village which is near the ash disposal area.

xi) Alignment of the water pipeline route and MGR for coal transportation should be so chosen as to avoid acquisition of forest land.

xii) Keeping in view the location of Sonthi Pahar Reserved forest, additional Monitoring Station should be installed at the site to assess the ambient air quality. Monitoring should be initiated immediately to ascertain the project status and the scenario after commissioning of the project. A special study should be undertaken to ascertain impact of SO2 on the flora in the project impact zone particularly the forest patches

xiii) The impact on terrestrial ecology (flora and fauna) should be studied by properly estimating the number of trees to be felled in the project area and its impact on fauna. The felling of trees should be properly phased and project layout should be so designed as to ensure minimum felling.

xiv) Details of survey report on socio-economic impact of project affected families being carried out by Indian Institute of Technology, Kanpur should be submitted to the Ministry along with detailed rehabilitation plan by March, 1999. Option should be extended to the habitants of Kaudia Village for shifting to other suitable place, if they so desire. R&R should be undertaken in consultation with the State Government and affected population.

xv) All effluents generated in various plant activities should be collected in the Central Effluent Treatment Plant and treated to ensure adherence to specified standards of discharge before its release in Lilagarh river. The concept of zero discharge should be adopted to a maximum possible extent. The

xvi) Regular monitoring for SPM, SO2 and NOX around the power plant may be carried out and records maintained. A Monitoring Station should be established near Sonthi Pahar forest in NE direction of the power plant.

xvii) Full cooperation should be extended to the Scientists/Officers from the Regional Office of the Ministry at Bhopal/the CPCB/the SPCB who would be monitoring the compliance of environmental status. Complete set of impact assessment report and the Management Plans should be forwarded to the Regional Office for their use during monitoring.

3. The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.

4. In case of any deviation or alteration in the project proposed from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the conditions imposed and to add additional environmental protection measures required, if any.

5. The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, the Impact Assessment Notification of January, 1994 and its amendments.

(Nalini Bhat)
Additional Director

Shri B.B. Saha,
Assistant General Manager,
National Thermal Power Corporation Ltd.,
Plot No.A-8-A, Sector-24, Post Box No.13,
NOIDA (U.P.)-201 301.

Copy to :-

1. The Secretary, Ministry of Power, Shram Shakti Bhavan, Rafi Marg, New Delhi.
2. The Secretary (Environment), Government of Madhya Pradesh, Bhopal.
3. The Chairman, Central electricity Authority, Sewa Bhavan, R.K. Puram, New Delhi.
4. The Chairman, Madhya Pradesh Pollution Control Board, Bhopal.
5. The Chairman, Central Pollution Control Board, East Arjun Nagar, Delhi-110032.
6. Chief Conservator of Forests, Regional Office, Bhopal.
7. Guard file.

(Nalini Bhat)
Additional Director

CC:ESE:9518:2000:GEN:05D 23rd March, 2000

Dr. (Mrs.) Nalini Bhat,
Additional Director,
Ministry of Environment & Forests,
Paryavaran Bhawan,
CGO Complex, Lodi Road,
NEW DELHI - 110 003.

Sub: **Environmental clearance for Sipat STPP Stage-I - reg.**

Dear Madam,

This has reference to the letter No. J.13011/10/960IA,II (T) dated 14.1.2000 reinstating the clearance issued for Sipat STPP Stage-I (4x500 MW) in February, 1999.

As informed during discussions on the subject NTPC proposes to adopt super-critical parameters for the steam generators at Sipat project with a view to make the plant more environment friendly. Consequently, the configuration of units under Stage-I will have 3 units of 660 MW with super-critical parameters against 4 units of 500 MW with sub-critical parameters proposed earlier.

A brief on the super-critical technology proposed and consequent changes envisaged are presented as under.

a) **Super-critical Technology:**

Super-critical boilers have distinct advantage of higher efficiency and lesser environmental pollution as compared to sub-critical boilers. The steam generators shall operate at steam pressure of 250 kg/cm^2 (bar) ± 5 kg/cm^2 and steam temperature of 568 ^{0} C for main steam and 540 ^{0} C for reheat steam. As steam generator will be operating at higher pressure and temperature, the quantum of superior material used in pressure parts shall increase. The plant efficiency is improved by 2.5% compared to the conventional sub-critical boiler. Due to change in unit size from 500 MW to 660 MW the number of units now proposed is three against four envisaged earlier. However, larger units will occupy more space and hence there would be no change (reduction) in land requirement for the main plant area.

b) **Coal Requirement:**

Due to higher thermal efficiency, coal requirement is expected to reduce by about 2.5%. Against the annual requirement of 10 million ton estimated earlier, the requirement for 3x660 MW units would be of the order of 9.75 million tons reflecting in reduction of emissions of SO2, NOx and CO2 to the same extent.

c) **Land Requirement for Ash Disposal:**

About 1950 acres was envisaged earlier for the ultimate capacity of 3000 MW for the life of the plant. The land for ash disposal has now been reduced by about 350 acres, which includes approximately 335 acres private agricultural land, as indicated in the enclosed map. This reduction is partly due to reduced ash generation from super-critical boilers and partly due to adoption of ash design practices requiring lesser land. The cost of ash dyke development is however likely to be higher w.r.t. conventional upstream method of ash dyke raising.

d) **Water Balance Diagram/ Effluent Releases:**

The revised water balance diagram for 3x660 MW is **enclosed** for ready reference. As can be seen, there would be no significant change in the quantity of effluent that would be released as compared to that for 4x500 MW.

e) **Impact on Air Quality:**

The impact on air quality has been assessed using the USEPA approved ISC model. The maximum incremental GLC (24 hrly) computed for the 3x660 MW configuration for the relevant season is as presented below:

Season	Distance in m	Direction	Highest 24 hrly incremental GLC($\mu g/m^3$)		
			SO_2	NOx	SPM
Pre-monsoon	2500	SE	24.11	19.20	3.08

Related data presented in the EIA Report for 4x500 MW is as presented below:

Season	Distance in m	Direction	Highest 24 hrly incremental GLC($\mu g/m^3$)		
			SO_2	NOx	SPM
Pre-monsoon	2500	SE	25.41	25.43	5.07

It can be seen that maximum incremental GLC of SO2, NOx and SPM in case of 3x660 MW configuration is lower compared to 4x500 MW. The maximum incremental GLC of SO2 at Mopka village, (10 KM SW of Plant) and at Bilaspur town proper would be 7.4 $\mu g/m^3$ and 5.2 $\mu g/m^3$ respectively.

In view of the above, it may be seen that a change from the sub-critical 4x500 MW unit (Stage-I) to super-critical 3x660 MW units has advantages in terms of efficiency, reduced coal consumption, reduction in SO_2/ NO_x/ SPM emission and land requirement. It is, therefore, requested that permission for change in plant configuration from 4x500 MW units to 3x660 MW units (with super-critical parameters) may kindly be accorded at the earliest..

Thanking you,

Yours sincerely,

23/2/2011

(B. B. SAHA)
GM (ES)
O/C

DAKS
25/3

CC:ESE:9518:2000:GEN:05D 13.07.2000

Dr. Nalini Bhat,
Addl. Director,
Ministry of Environment & Forests,
Paryavaran Bhawan,
CGO Complex, Lodi Road,
NEW DELHI – 110 003.

Sub: Sulphur in Coal and coal transportation

Dear Madam,

It may please be recalled that environmental clearance for Sipat STPP Stage-I was accorded by MOEF vide letter dtd. 22.2.1999 based on the comprehensive Environmental Impact Assessment (EIA) Report for 3000 MW capacity carried out by M/s Envirotech Consultants Pvt. Ltd., New Delhi. Subsequently and upon a decision to adopt super-critical parameters for steam generator at Sipat STPP by NTPC and in response to conditions of MOEF letter dtd. 14.1.2000 reinstating the clearance issued for Sipat STPP Stage-I (4x500 MW), NTPC furnished details pertaining to advantages of super-critical technology, coal requirement, land requirement for disposal, water balance for effluent release and **impact on air quality** specifically at Mopka village and Bilaspur town. Further, vide our letter No. CC:ESE:9518:2000:GEN:05D dated 23rd March, 2000, a request for change of configuration from sub-critical 4x500 MW Units to super-critical 3x660 MW units was also made. The matter was further discussed with you personally.

It is reiterated that the super-critical technology has the advantages of improved plant efficiency by about 1.9% and consequent lesser emissions over conventional sub-critical technology. The water requirement would however be of the same order as mentioned for 4x500 MW configuration with conventional technique.

The layout of the plant has been critically reviewed and optimised. The total requirement of land thus gets reduced by 350 acres which includes 335 acres of private land. The total requirement now envisaged would of the order of 4365 acres against the earlier projected requirement of 4850 acres.

Regarding the sulphur content in coal, reference is invited to item 2 (viii) of clearance letter dtd. February 22, 1999

Quote:

Coal should be used at 10 MT per year for Stage-I with sulphur content not exceeding 0.24%.

Unquote

The impact on air quality for the comprehensive Environmental Impact Assessment (EIA) Study (3000 MW) and subsequently for 3x660 MW was based on firing coal with a sulphur content of 0.24%. Though M/s Coal India Ltd., Ministry of Coal had indicated that coal supply to Sipat STPP shall be made from Korba coalfields, specific mine block was not finalized at the time of EIA study and therefore in line with general coal quality parameters, Korba Coalfields , a sulphur content of 0.24% was considered.

It has now been confirmed that coal supply for Sipat STPP would be from Dipka (Extention) mine block of Korba coelfields, the sulphur content of which is likely to range from 0.4% (worst coal) through 0.45% (designed coal) to 0.6% (best coal) as against 0.24%. The air quality predictions have been revised accordingly with the above sulphur content and the predictions for sulphur content varying from 0.24% to 0.6% is tabulated below:

PREDICTED INCREMENTAL GROUND LEVEL CONCENTRATIONS – SIPAT STPP (3X660 MW)

Sulphur in Coal (%)	Season	Distance (km)	Direction	Highest 24 hrly incremental GLC ($\mu g/m^3$)	Highest seasonal incremental GLC ($\mu g/m^3$)
0.24%	Pre-monsoon	2.5	SE	24.11	**4.55**
0.4%	-do-	2.5	SE	49.30	**8.79**
0.45%	-do-	2.5	SE	50.38	**8.99**
0.6%	-do-	2.5	SE	58.90	**10.55**

Considering the maximum level of 9.8 $\mu g/m^3$ SO2 (pre-monsoon) in ambient air as recorded during the EIA Study, the **maximum glc of SO2** in ambient air due to operation of **3x660 MW** units would be of the **order of 59.1, 60.6 and 68.7 $\mu g/m^3$** during the pre-monsoon season at 2.5 km in the SE direction which, is well within the regulatory limits of 120 $\mu g/m^3$.

It is pertinent to mention here that the predictions are for the worst case scenario with the assumption that all the SO2 emitted gets deposited, and effects due to down wash etc. have not been considered in the model. This is extremely unlikely and in normal circumstances, the maximum incremental glc (24 Hourly) are expected to be lower. Further, it may be mentioned here that the maximum seasonal incremental concentrations as indicated in the table range between **4.55** to **10.55 $\mu g/m^3$** in the pre-monsoon season and well within the regulatory limits of **80 $\mu g/m^3$** (Annual).

An exercise was also undertaken to establish incremental levels of GLC (24 Hourly) in ambient air at (I) Sonthipahar (ii) Mopka and (iii) Bilaspur town while operating 3x660 MW units firing coal with sulphur content ranging from **0.4 – 0.6%.** These specific location were considered as doubts have been expressed on adverse impact on these locations due to operation of Sipat STPP by several local populace.

The maximum incremental sulphur dioxide at these locations have been presented in the following Table.

PREDICTED 24 HOURLY INCREMENTAL GLC AT SPECIAL LOCATIONS

Sulphur in Coal (%)	Sonthi Pahar (7 km) ($\mu g/m^3$)	Mopka (10 km) ($\mu g/m^3$)	Bilaspur (15 km) ($\mu g/m^3$)
0.24%	17.8	7.4	5.2
0.40%	36.39	15.13	10.62
0.45%	37.19	15.46	10.86
0.60%	43.68	18.16	12.76

It may be seen that the predicted values for 0.4, 0.45 and 0.6% sulphur are well within the ambient air quality standards and that the operation of the plant will not affect the air quality significantly. Further, space provision has been made in the layout for retrofitting FGD if warranted in future.

As per representations made against the project the sulphur content range from 0.5 – 0.8%. Based on coal quality of linked mine, it is unlikely that sulphur content could reach 0.8%. An exercise was however undertaken to calculate the maximum incremental glc of SO2 in the ambient with 0.8% sulphur. From the modelling results it is estimated that maximum glc of SO2 would be of the order of 78.5 µg/m3 and within the stiupulated levels of 120 µg/m3. As mentioned, the predictions are over-estimates and the actual levels are expected to be lower compared to the predicted values.

Your kind attention is further invited to item 2 (viii) of clearance letter dtd. February 22, 1999

Quote:

The coal should be transported from Korba coalfields by captive MGR in closed wagons to avoid dust pollution".

Unquote

Since there is no technology available for loading coal in closed wagons, coal is transported in open wagons world-wide. Closed wagons would require manual loading and it would not be feasible to transport the coal throughput of 10 million tonnes per annum using closed wagons.

In view of the above, it is requested that the permission/ amendment for the following may please be accorded:

a) Permission to **use coal with sulphur content ranging from 0.4 % to 0.6%**
b) Permission to transport coal by **open bottom discharge** type wagons.
c) Consent for change of **configuration** from 4x500 MW units to **3x660 MW** unit.

Thanking you,

Yours faithfully,

18/7/2007

(B.B.SAHA)
GM (ES)

No.J.13011/10/96-IA.II(T)
Government of India
Ministry of Environment and Forests

Paryavaran Bhavan
CGO Complex, Lodi Road,
New Delhi-110003.

July 19, 2000.

Subject : **2000 MW Sipat Super Thermal Power Project Stage-I, Bilaspur District, Madhya Pradesh of M/s National Thermal Power Corporation Ltd. (NTPC).**

Reference is invited to letter No.CC:ESE:9518:2000:GEN:05D dated 13th July, 2000 from National Thermal Power Corporation Ltd. (NTPC) requesting for permission to use coal with sulphur content ranging from 0.4% to 0.6% and change of configuration from 4x500 units to 3x660 MW units for Sipat Thermal Power project. For deciding on these two issues, NTPC may like to submit the following details for consideration.

- Complete analysis of coal from the linked Mine to ascertain sulphur content, volatile matter, calorific value etc.
- Quantity of coal proposed to be used per unit per day.
- Plant characteristic data to indicate stack height, internal diameter, exit velocity and temperature, emissions (in gm/sec) etc.
- Input meteorological data used for predicting incremental GLC values.
- Isopleths for various concentrations.
- Concentrations of GLC values expected near sensitive areas such as forests, settlements around the project site, etc.

Due to changes in the sulphur content and configuration, predictions are required to be cross checked for which a self contained document (in duplicate) on revised air quality analysis should be submitted.

In regard to amendment in condition No.2(viii) regarding transport of coal from Korba Coalfields in closed wagons, NTPC may like to indicate alternative(s) to closed wagons to avoid dust pollution. The purpose is to ensure that transportation of coal by Captive MGR should not result in emission of fugitive dust.

(Nalini Bhat)
Additional Director

Shri T. Sankaralingam,
ED (Engineering),
National Thermal Power Corporation Ltd.,
Plot No.A-8-A, Sector-24, Post Box No.13,
NOIDA (U.P.)-201 301.

CC:ESE:9518:2000:GEN:05D

Dated: 09.08.2000

Sub: **Sipat Super Thermal Power Project Stage-I (2000 MW).**

Dear Dr. Nalini,

I wish to invite your kind attention to your letter no. J.13011/10/96-IA.II (T) dated. July 19, 2000 in connection with permission to use coal with sulphur content ranging from 0.4 to 0.6% and change in configuration from 4x500 MW to 3x660 MW for Sipat STPP. As desired, the details pertaining to the following aspects of the project in **two sets**, are enclosed for further necessary action:

i) Analysis of coal
ii) Quantity of coal proposed to be used (3x660 MW)
iii) Plant characteristics
iv) Meteorological Data
v) Isopleths
vi) Impacts near sensitive areas of Sipat STPP

With regard to the stipulation on transportation of coal from Korba coalfields in closed wagons {item 2(viii) of the clearance letter dtd. 22.2.2000}, it is to clarify that there is no technology for loading/ unloading of coal in closed wagons. Generally the coal of (-) 250 mm size is transported in open wagons to facilitate mechanical loading which would not result in fugitive dust emission. I, therefore, request you to kindly permit coal transportation by conventional open wagons with bottom discharge for Sipat STPP.

Should you require any other information, we would furnish the same to facilitate decision on use of coal with sulphur content ranging from 0.4 to 0.6% and configuration change from 4x500 MW to 3x660 MW.

With regards,

Yours sincerely,

9/8/2000

(M.H. RAO)

Encl: As above.

Dr. (Mrs.) Nalini Bhat,
Addl. Director
Ministry of Environment & Forests,
Paryavaran Bhawan,
CGO Complex, Lodi Road,
NEW DELHI-110 003.

No.13011/10/96-IA.II(T)
Government of India/Bharat Sarkar
Ministry of Environment and Forests

Paryavaran Bhavan,
C.G.O. Complex, Lodi Road,
New Delhi-110003.

April 30, 2002.

Subject : 3x660 MW Sipat (Stage-I) Thermal Power Project near Bilaspur, Chhatisgarh of M/s National Thermal Power Corporation Limited - Change of fuel composition and unit size reg.

This has reference to letter No.CC:ESE::9518:2000:05D dated 23rd March, 18th October, 2000, dated 17th July, 2001 and No.CC:9518:2002:GEN:05D dated 27th March, 2002 from M/s National Thermal Power Corporation Limited for permission to (a) change the configuration from 4x500 MW to 3x660 MW and (b) use of coal with varying sulphur content for their proposed Sipat Thermal Power Project (Stage-I), Bilaspur, Chhatisgarh.

2. It has been noted that

- Super critical technology, which is 1.8% more efficient than conventional pulverized boilers, is envisaged for 660 MW Unit;
- Due to change in technology, coal consumption will be reduced from 10 MT to 9.8 MT for Stage-I;
- Coal linkage has been firmed up from Dipika Mine Block (Korba area) which will have a maximum sulphur content of 0.36%;
- Maximum predicted SO_2 values near Sonthi Pahar area will be 27.7 ug/m^3 with wind frequency of 5.29% during monsoon;
- A total area of 4382.44 acres, which also includes switchyard, is proposed to be acquired for ultimate stage of the project with station capacity of 3000 MW.

3. Keeping in view the above, Ministry has no objection to the proposed changes in unit size from 500 MW to 660 MW and use of coal with maximum sulphur content of 0.36% subject to the following.

i) Use of coal from Dipika Mines should be limited to 9.82 MT for Stage-I with sulphur content not exceeding 0.36%.

ii) Since maximum concentration for SO_2 near Sonthi Pahar is likely to be close to permissible levels for sensitive area, continuous monitoring and analysis of Ambient Air Quality in the region should be undertaken during planning, construction and operational phase of the project.

iii) In the event of 98 percentile values for SO_2 exceeding prescribed permissible limits for sensitive areas, NTPC should make provision for retrofitting of desulphurisation unit for which space is to be provided in the project layout plan.

iv) Even though entire area of 4382.44 acres is proposed to be acquired for ultimate station capacity of 3000 MW, no work on Stage-II of the project with 660 MW unit should be undertaken without environmental clearance.

v) As lining of ash pond is not envisaged in the design of the projcct due to the soil profile of the region, no earth should be removed from the proposed ash disposal area for any project activity or construction of ash dyke.

vi) All the conditions stipulated vide Ministry's letter of even number dated 22nd February, 1999 should be strictly implemented.

(Nalini Bhat)
Director

Shri M.H. Rao,
DGM (Env. Engg.),
National Thermal Power Corporation Limited,
Plot No.A-8A, Sector-24,, Post Box No.13,
NOIDA (U.P.)-201 301.

Copy for information to

1. Secretary, Ministry of Power, Shram Shakti Bhavan, Rafi Marg, New Delhi.
2. Chairman, Central Electricityy Authority, Sewa Bhavan, R.K. Puram, New Delhi.
3. Chief Conservator of Forests, Regional Office, Western Region, Ministry of Environment and Forests, E-3/240, Arera Colony, Bhopal-462 016.

(Nalini Bhat)
Director

एनटीपीसी
NTPC

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)
(Formerly National Thermal Power Corporation Ltd.)

केन्द्रीय कार्यालय/Corporate Centre

CC:ESE:9518:2013:GEN

Date: 22.05.2013

Director, IA-Thermal
Ministry of Environment and Forests
Paryavaran Bhawan
C.G.O. Complex, Lodi Road
New Delhi – 110 003

Sub.: Change in Source of Fuel for Sipat STPP, Stage-I (3x660 MW)

Ref.: File No. J-13011/10/96-IA.II (T).

Dear Madam,

As you may kindly be aware, NTPC is operating Sipat Super Thermal Power Project (Stage-I: 3x660 MW; Stage-II: 2x500 MW; Total Capacity: 2980 MW) in Bialspur district of Chhattisgarh. Environmental clearance for Sipat STPP was accorded by MOEF vide letter no. J-13011/10/96-IA.II (T) dated 22.02.1999 for a capacity of 2000 MW (4x500 MW). However, due to changes in configuration of the project from 4x500 MW to 3x660 MW, an amendment to environmental clearance was issued by MOEF vide letter no. J-13011/10/96-IA.II (T) dated 30.04.2002. Copies of letters dated 22.02.1999 and 30.04.2002 are enclosed at Annexure-I and II respectively.

Environmental clearance letter dated 22.02.1999 stipulates that

> viii) Coal should be used @ 10 MT/year for Stage-I with sulphur content not exceeding 0.24%. The coal should be transported from Korba coalfields by captive MGR in closed wagons to avoid dust pollution.

Environmental clearance letter dated 30.04.2002 stipulates that

> Coal linkage has been firmed up from Dipika mine block (Korba area) which will have a maximum sulphur content of 0.36%

South Eastern Coalfields Limited (SECL) have expressed constraints in supplying the coal to Sipat STPP, Stage-I from Dipika mine only and agree to supply coal from operating mines of SECL. While signing Memorandum of Understanding with NTPC for supply of coal to Sipat STPP (copy enclosed at Annexure-III) , SECL have mentioned that,

> **There shall not be any source specific commitment of supply.** However, in case of Sipat Stage-I (Unit-I only), as per the condition incorporated in MOEF clearance letter dated 22.02.1999 read with

30.04.2002, supplies would be made from Dipika mine block of Korba coalfields till purchaser submits an amendment in MOEF clearance in this regard.

It is pertinent to mention here that the sulphur content of coal from operating mines of SECL varies from 0.27% to 0.40%, which is similar to the sulphur content specified in environmental clearance letter dated 30.04.2002.

Further, coal transportation has been envisaged in BOBRN/ BOXN wagons of NTPC/ Indian railways, which are open wagons. It is a general practice in India to transport coal in open wagons with suitable measures for control of fugitive dust emissions. The same has been envisaged in Sipat STPP also.

In view of the above it is requested that the condition regarding coal linkage may kindly be amended as follows:

> Coal shall be sourced from operating mines of SECL which will have a maximum sulphur content of 0.40%. The coal should be transported from coalfields by captive MGR in open wagons with suitable measures to avoid dust pollution.

An amendment in this regard may kindly be issued to facilitate signing of long term coal supply agreement with SECL.

Thanking you.

Yours faithfully

22.05.13

(R.K. Baderia)
HOD (Environmental Engineering)

Encls: as above.

J-13011/10/1996 -IA.II (T)
Government of India
Ministry of Environment, Forests and Climate Change

3rd Floor, Vayu Block,
Indira Paryavaran Bhawan, Jor Bagh Road,
Aliganj, New Delhi-110003

Dated: 8th September, 2014.

To

M/s NTPC Ltd.
Engineering Office Complex,
Plot No. A-8A, Sector-24,
Post Box No. 13,
Noida (U.P.) – 201301

Ph: 0120-2410333; Fax: 0120-2410136/2410137

Sub: **3x660 MW (Stage-I) Sipat Super Thermal Power Project at District Bilaspur in Chhattisgarh by M/s NTPC Ltd. - reg. amendment in EC for change of source of coal.**

Sir,

This has reference to your letters dated 22.05.2013 and 29.11.2013 on the above subject. It is noted that EC was accorded by MoEF for 2000 MW (4x500) on 22.02.1999 and subsequent amendment dated 30.04.2002 for change of fuel composition and unit size (3x660 MW).

2. The matter was placed before the Expert Appraisal Committee (Thermal Power) in its 8th Meeting held during January 9-10, 2014. In acceptance of the recommendation of the Expert Appraisal Committee (Thermal Power) and in view of the information/clarification furnished by you, with respect to the above mentioned power project, the Ministry accords amendment in the said EC for sourcing coal from operating mines of SECL with a maximum sulphur content of 0.4% instead of sourcing from Dipika mines with sulphur content not exceeding 0.36% and transportation of coal by open wagons with suitable measures instead of closed wagons, depending on the availability. However, permission for transportation of coal by open wagons is accorded **only for one year** with the stipulation that within one year, NTPC will come out with a plan of carrying coal in a cleaner way.

3. Further, the following conditions are stipulated in addition to the conditions of the EC dated 22.02.1999 and its amendment dated 30.04.2002.

(i) *The transportation of coal shall be by Rail only.*

(ii) Harnessing solar power within the premises of the plant particularly at available roof tops shall be undertaken and status of implementation shall be submitted periodically to the Regional Office of the Ministry.

(iii) A long term study on radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.

(iv) Mercury emissions from stack shall also be monitored on periodic basis.

(v) Fugitive emissions shall be controlled to prevent impact on agricultural or non-agricultural land.

(vi) No ground water shall be extracted for use in operation of the power plant even in lean season. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up / operation of the power plant.

(vii) Monitoring of surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.

(viii) Minimum required environmental flow suggested by the Competent Authority of the State Govt. shall be maintained in the Channel/ Rivers (as applicable) even in lean season.

(ix) Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.

(x) Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.

(xi) CSR schemes should address Public Hearing issues and shall be undertaken based on need based assessment in and around the villages within 5.0 km of the site and in constant consultation with the village Panchayat and the District Administration. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. Vocational training programme for possible self employment and jobs shall be imparted to identify villagers free of cost.

(xii) For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.

(xiii) An Environmental Cell comprising of at least one expert in environmental science/ engineering, ecology, occupational health and social science, shall be created preferably at the project site itself and shall be headed by an officer of appropriate superiority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would

be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.

(xiv) The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.

(xv) The environment statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.

4. All other conditions mentioned in this Ministry's letter of even no. dated 22.02.1999 and its amendment dated 30.04.2002 shall remain the same, as applicable.

5. This issues with the approval of the Competent Authority.

(Dr. Saroj)
Scientist 'F'

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
4. The Secretary, Department of Environment, Government of Madhya Pradesh, Bhopal.
5. The Chairman, Madhya Pradesh Pollution Control Board, E-5, Arera Colony, Paryavaran Parisar, Bhopal-462016, Madhya Pradesh.
6. The Chief Conservator of Forests, Regional Office (WZ), E-5, Kendriya Paryavaran Bhawan, Arera Colony, Ravishankar Nagar, Bhopal - 462016.
7. The Collector, District Bilaspur, M.P.
8. Guard file.

(Dr. Saroj)
Scientist 'F'