

FORM-I

(APPENDIX-I OF EIA NOTIFICATION, 2006)

Permission for Ash Disposal from Vindhyachal Super Thermal Power Station Stage-II (2X500MW) & Stage-III (2X500MW), of NTPC Limited into Gorbi Mine of NCL

(I) Basic Information

S. No.	Item	Details
1	Name of the Project:	<p>The proposal is for Permission for Ash Disposal from Vindhyachal Super Thermal Power Station (Stage- II & III) into abandoned pit of Gorbi Mine of NCL.</p> <p>During initial period, until commissioning of the permanent system, fly ash is proposed to be transported in closed bulkers by road.</p> <p>After commissioning of the permanent system, ash is proposed to be transported in slurry form through pieplines.</p>
2	S. No. in the Schedule	1(d)
3	Proposed capacity/ area length /tonnage to be handled/ command area/ lease area / number of wells to be drilled	<p>Existing capacity of Vindhyachal STPP is 4760 MW commissioned in five Stages – Stage-I (6x210 MW), Stage-II (2x500 MW), Stage-III (2x500 MW), Stage-IV (2x500 MW) and Stage-V (1x500 MW).</p> <p>However, ash from Stage-II: 2x500 MW and Stage-III: 2x500 MW only is proposed for filling up in Gorbi Mine.</p> <p>Environmental Clearance to all stages of Vindhyachal Super Thermal Power Project (VSTPP) has been accorded by MOEF&CC & all units are under commercial operation. EC for Stage-II(2x500 MW) and Stage-III (2x500 MW) were accorded by MOEF&CC vide letters dated 26.06.1990 and 19.07.2002.</p>
4	New/ Expansion/ Modernization	Project is already under operation for generation of 4760 MW under Stage-I, II, III, IV and Stage-V.
5	Existing Capacity/ Area	Existing capacity of Vindhyachal STPP is 4760

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		MW & capacity of Stage-II is 1000 MW & Stage-III is 1000 MW from which ash is proposed to disposed off in Gorbi Mine.
6	Category of the project	'A' category
7	Does it attract the General condition? If yes, please specify	Yes. The project is located near interstate boundary of U.P. and M.P. and Critically Polluted Area.
8	Does it attract the special condition? If yes , please specify	No
9	Location	VSTPS is located on North Western Bank of Rihand Reservoir in Singrauli district of MP at latitudes of 24°04'58" - 24°06'19" N and longitudes 82° 38'34" - 82°41'29" E respectively. The vicinity map of the project is shown in Exhibit-I . Co-ordinates of the Gorbi Mine are 24°13'04.0"N 82°35'18.8"E The vicinity map of the Gorbi Mine is shown in Exhibit-II . Both – the project and Gorbi mine are located in Singrauli district of MP.
	Plot / Survey/ Khasra No.	Vindhyanager
	Village	Waidhan
	Tehsil	Waidhan
	District	Singrauli
	State	Madhya Pradesh
10.	Nearest railway station / airport along with distance in kms.	Nearest Railway Station Shakti Nagar Railway Station (about 2 km. from project) Nearest Commercial Airport: Varanasi (about 220 Km. from project site).
11.	Nearest Town, city, District Head-quarters along with distance in km.	Nearest Town and District Headquarter: Waidhan (about 5 km)
12.	Village Panchayats, Zila Parishad, Municipal Corporation, Local body (complete postal addressed with telephone nos. to be given)	Village: Waidhan Tehsil: Waidhan, District: Singrauli State: Madhya Pradesh
13.	Name of the applicant	NTPC Limited,
14.	Registered Address	NTPC Bhawan, Core-7 Scope Complex, Lodhi Road, New Delhi – 110 003

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into abandoned Gorbi Mines of NCL.**

15.	Address for correspondence	Dr. Vijay Prakash, GM & HOD (Environmental Engineering) Engineering Office Complex, NTPC Limited, Plot No. A-8A, Sector – 24, Noida (U.P.) – 201301
	Name	Dr. Vijay Prakash
	Designation (Owner/Partner/CEO)	GM & HOD (Environmental Engineering)
	Address	Environmental Engineering Department Engg. Office Complex, NTPC Limited, Plot No. A-8A, Sector – 24, Noida (U.P.) – 201 301
	Pin Code	201301
	E-mail	vijayprakash@ntpc.co.in, environment.ntpc@gmail.com
	Telephone No.	0120-2416930
	Fax No.	0120-2410206
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a topo sheet.	Not applicable. The present proposal is for Permission for Ash Disposal from Vindhyachal Super Thermal Power Station (Stage II & III) into Gorbi Mine of NCL.
17.	Interlinked Projects	None
18.	Whether separate application of interlinked project has been submitted?	Not Applicable
19.	If yes, date of submission	Not Applicable
20.	If no, reason	Not Applicable
21.	Whether the proposal involves approval / clearance under: If yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980 (b) The Wildlife (Protection) Act, 1972 (c) The C.R.Z. Notification, 2011	Not applicable.
22.	Whether there is any Government Order/ Policy relevant / relating to the site?	To the best of our knowledge, no such order exists.
23.	Forest land involved (hectares)	Nil. However, a detailed survey of route for pipeline is under progress.
24.	Whether there is any litigation pending against the project and / or land in which the project is proposed to be set up? (a) Name of the Court (b) Case No. (c) Orders / directions of the Court, if any and its relevance with the proposed project.	Nil.

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(II) Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	The void proposed for ash back filling was earlier used for coal mining and has been lying abandoned since the completion of the mining activity. After ash filling the area shall be levelled and reclaimed with vegetation, which shall change the landuse from abandoned mining site to green area.
1.2	Clearance of existing land, vegetation and buildings?	No	This proposal does not require clearance of existing land, vegetation and buildings in the mine void area. However, clearance of natural vegetation may be required along the ash pipe line.
1.3	Creation of new land uses?	Yes	The void created due to opencast mining will be filled with the fly ash, covered with soil and vegetated with native plant species. This will help in restoring the topography and enhancing the local aesthetics. Thus the reclaimed land is put into productive use.
1.4	Pre-construction investigations e.g. boreholes, soil testing?	Yes	Borehole creation, soil testing, ground/surface water testing etc are part of the Environment studies and Geo-technical investigations.
1.5	Construction works.	Yes	Construction of structures related to ash disposal in mine voids and strengthening of roads may be required.
1.6	Demolition works.	No	There is no physical structure requiring demolition at the fly ash disposal site. No demolition work is therefore envisaged.
1.7	Temporary sites used for construction works housing of construction workers?	No	–
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	During initial period, until commissioning of the permanent system, fly ash is proposed to be transported in closed bulkers by road. After commissioning of the permanent system, ash is proposed to be transported in slurry form through pipelines.

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S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.9	Underground works including mining or tunnelling?	No	No underground work including mining or tunnelling is envisaged.
1.10	Reclamation works?	Yes	The proposed activity pertains to reclamation of mine voids by disposal of fly ash. The disposal site will ultimately be planted with indigenous plant species for biological reclamation and enhancing the vegetative cover in the area. The plant species will be selected in consultation with State Forest Department or other reputed institutes.
1.11	Dredging?	No	Not applicable
1.12	Offshore structures?	No	Not applicable
1.13	Production and manufacturing processes?	No	The proposed activity does not involve any additional production or manufacturing process. Fly ash is a by product generated at VSTPP due to burning of coal for stream production which is proposed to be disposed off in the abandoned Mine Void of Gorbi Mine.
1.14	Facilities for storage of goods or materials?	No	No additional facilities for storage of goods or materials are proposed to be created except during the short period of construction of the systems for transportation and disposal.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	The proposed activity pertains to the disposal of solid waste (ash) in the abandoned mines voids of Gorbi which are no longer in use. An Environment Impact Assessment study is proposed to be undertaken to suggest the methods for disposal of ash.
1.16	Facilities for long term housing of operational workers?	No	Various Residential and Non-residential Buildings within the township already established. No additional facilities are proposed.
1.17	New road, rail or sea traffic during construction or operation?	Yes	Approach road to disposal site is available. However, a peripheral road around the boundary of the void may be required to be built.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports,	No	-

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S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
	airports etc?		
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	-
1.20	New or diverted transmission lines or pipelines?	No	-
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	-
1.22	Stream crossings?	No	-
1.23	Abstraction or transfers of water from ground or surface waters?	No	No additional water is proposed to be abstracted for disposal of ash into mine voids.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	The existing drainage pattern will not get changed. However, the void, a water body at present, will be ultimately filled up and reclaimed with vegetation.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	During initial period, until commissioning of the permanent system, fly ash is proposed to be transported in closed bulkers by road. After commissioning of the permanent system, ash is proposed to be transported in slurry form through pipelines.
1.26	Long-term dismantling, decommissioning, or restoration works?	Yes	The proposed activity shall lead to long-term restoration of abandoned mine voids with filling of ash and biological reclamation after the voids are completely filled up.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	Yes	No decommissioning activities are ongoing/ proposed. However, after the voids are completely filled up, the entire site will be suitably graded, covered with soil and planted with the native plant species for bio-reclamation and enhancement of local aesthetics. This will have positive impact on the local environment and ecology.
1.28	Influx of people to an area in either temporarily or permanently?	No	As the proposal only relates to disposal of fly ash in abandoned Gorbi mine of NCL, no major influx of people is envisaged.

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S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.29	Introduction of alien species?	No	Native plants along with some ornamental plants have been planted in plant area and township and local species shall be planted after the voids will be filled completely.
1.30	Loss of native species or genetic diversity?	No	-
1.31	Any other actions?	No	-

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S. No.	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	No	The proposed activity involves reclamation of mine voids left behind after open cast mining of coal. The void created due to opencast mining will be filled with the fly ash generated from VSTPP covered with soil and vegetated with native plant species. This will help is restoring the topography and enhancing the local aesthetics. Thus it covers the development of mine void left behind due to mining of coal.
2.2	Water (expected source & competing users) unit: KLD	No	As the proposal is for Permission for Ash Disposal from Vindhychal Super Thermal Power Station Stage- II (2X500MW) & III (2X500MW), into abandoned Gorbi Mine of NCL.
2.3	Minerals (MT)	No	Not applicable As the proposal is for Permission for Ash Disposal from Vindhychal Super Thermal Power Station Stage- II (2X500MW) & III (2X500MW), into abandoned Gorbi Mine of NCL.
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	No	Not applicable
2.5	Forests and timber (source – MT)	No	Nil
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel	No	Not applicable

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	(MT), energy (MW)		
2.7	Any other natural resources (use appropriate standard units)	No	-

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	-
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Not applicable as proposal is for permission of ash disposal in to mine voids
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	The project has already provided job opportunities to people and improved infrastructure facilities in the area. Proposed activity for restoring the topography of mine void and tree plantation shall enhance the local aesthetics.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	-
3.5	Any other causes	No	-

4. Production of solid wastes during construction or operation or decommissioning (MT/month)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	The proposed activity shall not generate such wastes except for small amounts of construction waste during laying of the pipeline, which will be disposed of properly. On the other hand, this activity shall lead

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S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
			to gainful utilization of fly ash generated from Vindhaychal STPP into reclamation of the abandoned mine voids NCL. The mine void will be biologically reclaimed after it is completely filled with ash.
4.2	Municipal waste (domestic and or commercial wastes)	No	No additional municipal waste will get generated due to disposal of ash from VSTPP into the mine voids. The municipal solid wastes generated at VSTPP are already being handled and disposed-off in environmentally safe manner.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	No additional hazardous waste will be generated due to the proposed activity. The hazardous wastes generated at VSTPP are already being handled and disposed of in environmentally safe manner.
4.4	Other industrial process wastes	No	-
4.5	Surplus product	No	-
4.6	Sewage sludge or other sludge from effluent treatment	No	No additional sewage sludge or other sludge are envisaged to be generated due to proposed activity. The sewage & effluent sludges generated at VSTPP are already being handled and disposed-off in environmentally safe manner.
4.7	Construction or demolition wastes	No	-
4.8	Redundant machinery or equipment	No	-
4.9	Contaminated soils or other materials	No	-
4.10	Agricultural wastes	No	-
4.11	Other solid wastes	No	-

5. Release of pollutants or any hazardous, toxic or noxious substances to air (kg/hr)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	No	No additional emissions from stationery sources are envisaged to be generated due to proposed activity.
5.2	Emissions from production processes	No	No additional emissions from stationery sources are envisaged to be generated due to proposed activity.

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5.3	Emissions from materials handling including storage or transport	Yes	<p>During initial period, until commissioning of the permanent system, fly ash is proposed to be transported in closed bulkers by road.</p> <p>After commissioning of the permanent system, ash is proposed to be transported in slurry form.</p> <p>During both of the above phases, due care shall be taken to prevent the emissions/ discharges of ash from the transportation system.</p>
5.4	Emissions from construction activities including plant and equipment	No	No major construction activities are envisaged.
5.5	Dust or odour from handling of materials including construction materials, sewage and waste	No	No dust or odour from handling of materials is expected.
5.6	Emissions from incineration of waste	No	-
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	-
5.8	Emissions from any other sources	No	-

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	The proposal is for disposal of ash from VSTPP Stage-II and Stage-III, into the abandoned mine voids of Gorbi mine. Noise from vehicles, pumps <i>etc.</i> shall be generated which will be controlled well within the permissible limits.
6.2	From industrial or similar processes	No	
6.3	From construction or demolition	Yes	No major construction or demolition work is envisaged. The generation of noise/ vibration will be controlled within permissible limits.
6.4	From blasting or piling	No	The ash disposal into the mine void does not involve blasting or drilling.
6.5	From construction or operational traffic	Yes	Noise, vibration & heat get generated in course of operation of vehicles. These will be maintained within acceptable limits.
6.6	From lighting or cooling systems	No	-
6.7	From any other sources	No	-

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7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	No hazardous substance as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and Batteries (Management & Handling) Rules are likely to be generated during the process of disposal of ash in the mine quarry. The hazardous solid wastes generated at VSTPP are already being handled and disposed-off in accordance to the statutory requirement and environmentally safe manner.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	Yes	No sewage is proposed to be generated from the proposed activity. The decanted water from the mine voids, if any, will be recycled back into the plant and will be reused for making slurry.
7.3	By deposition of pollutants emitted to air into the land or into water	No	Release of pollutants mainly dust will be kept within permissible limit by maintaining uniform water cover over ash disposal area and water sprinkling, development of plant barrier and vegetation on the ash dump surfaces after the void is fully filled up
7.4	From any other sources	No	-
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	-

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	No	-
8.2	From any other causes	No	-
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	Yes	The mine is falling within the seismically active Zone-III. The natural disasters are not likely to affect the project due to flooding and landslides as the disposal sites will have barrier all around them. For conveying system, proper operation and maintenance procedure will be followed and

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			necessary corrective and preventive measures will be taken to avoid such occurrences, if any.
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9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting. Facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) housing development extractive industries supply industries other	Yes	The proposal pertains to Permission for Ash Disposal from VSTPP Stage-II and Stage-III into abandoned Gorbi mine of NCL. Disposal of ash in abandoned mine voids will nullify the requirement of equivalent land, and hence land acquisition, for ash disposal which shall have positive impact on people associated with the land in the area.
9.2	Lead to after-use of the site, which could have an impact on the environment	Yes	The mine voids after being fully filled up with ash will be suitably vegetated with local species of plant species. This will improve the aesthetics and ecological values of the area in long run.
9.3	Set a precedent for later developments	Yes	The experience gained due to disposal of ash in the mine pits will be helpful in future to take decision on dealing with the issue of ash disposal in the mine voids.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	

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(III) Environmental Sensitivity:

Vicinity Map is enclosed at Exhibit-I.

S. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1.	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	Nil
2.	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	No	Rihand Reservoir is located adjacent to the Vindhyachal project.
3.	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	-
4.	Inland, coastal, marine or underground waters	Yes	VSTPS is located near Rihand reservoir.
5.	State, National boundaries	Yes	The project is located adjacent to the border of UP & MP.
6.	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	No	Nil
7.	Defence installations	No	Nil
8.	Densely populated or built-up area	No	Nil
9.	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	No	Nil
10.	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Yes	Rihand Reservoir is located adjacent to the Vindhyachal project.
11.	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Yes	Singrauli Area has been declared as critically polluted area by CPCB.
12.	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	No	Adequate care will be taken during design and construction to resist the natural disaster.

(IV) Proposed Terms of Reference for EIA Studies: Not Applicable

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I hereby give an undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any, to the project will be revoked at our risk and cost.



(Dr. Vijay Prakash)
GM & HOD (Env. Engg.)
Engineering Office Complex,
NTPC Limited,
A-8A, Sec-24, Noida
Date:

Place: NOIDA

Vicinity Map of Vindhyachal STPP



VICINITY MAP OF GORBI MINES OF NCL

EXHIBIT-II

