

**MINUTES OF 5TH MEETING OF STATE LEVEL EXPERT APPRAISAL
COMMITTEE, ORISSA HELD ON 20 – 22ND JULY, 2009**

The 5TH meeting of State Level Expert Appraisal Committee, Orissa was held on 20 – 22 July, 2009 in the Conference Hall of Orissa State Pollution Control Board, Bhubaneswar at 11.00 AM. Dr. Gagan Bihari Nityananda Chainy, Chairman, SEAC Orissa chaired the meeting. The following members were present in the meeting.

1.	Dr. Gagan Bihari Nityananda Chainy	-	Chairman
2.	Professor (Dr.) Swoyam Prakash Rout	-	Member
3.	Dr. Harekrishna Nayak,	-	Member
4.	Dr. Moheshwar Patra,	-	Member
5.	Sri Sasanka Sekhar Pattnaik,	-	Member
6.	Dr. Surendra Nath Das,	-	Member
7.	Dr. R.C. Mohanty,	-	Member
8.	Prof. Kumar Das	-	Member
9.	Sri S. Das,	-	Secretary

The following issues were discussed and decided

1. The minutes of previous meeting was confirmed by the members.
2. The committee unanimously decided as following :
 - i) The meeting of SEAC, Orissa held on dt. 23.5.09, dt. 27.5.09 and dt. 30.6.09 for finalization of minutes of 1st meeting, draft TOR and other related issues may be taken as official meeting of SEAC and same can be named as 2nd, 3rd & 4th meeting of SEAC. This meeting can be named as 5th meeting of SEAC, Orissa instead of 3rd meeting.
 - ii) The Chairman/Secretary, SEAC, Orissa may request the Commissioner-cum-Secretary to Govt., Forest & Env. Deptt, Govt. of Orissa to fix sitting and conveyance fees for members of SEAC, Orissa at par with that of EAC, Govt. of India in MoEF.
 - iii) All the letter issued by SEAC, Orissa should be in SEAC, Orissa letter pad.
 - iv) Next meeting of the committee should be on 3rd August, 2009 for finalisation of the minutes of the meeting held on 20-22nd July, 2009.

CHAIRMAN, SEAC

SECRETARY, SEAC

3. Next meeting of the committee should be on 17-18th August, 2009 for consideration of proposals pending with the SEAC, Orissa.

Total 18 project proponents were invited for TOR and Environmental clearance deliberation. Out of these, 16 project proponents were presented before the committee and proponent of two proposals did not come for presentation. The proceedings and recommendations of the committee are detailed below agenda-wise.

ITEM NO. 1

PROPOSAL OF PATABEDA IRON ORE MINE OF M/S. MGM MINERALS LTD, INCREASE IN IRON ORE PRODUCTION FROM 0.16 MTPA TO 0.8 MTPA AT – PATABEDA, DIST SUNDARGARH.

The proponent made a presentation on the proposal for consideration of the SEAC. The proposal is for enhancement of production of iron ore from 0.16 MTPA to 0.8 MTPA. The TOR for this project were prescribed on Dt. 21.05.2008 by the Expert Appraisal Committee of MoEF, Govt. of India. The mine lease area is 28.397 hectare. Out of which 27.086 ha is DLC forest land and 1.311 ha is non forest land. The mine has obtained forest clearance for 23.581 ha and 3.505 ha is included in safety zone. The mining lease was first executed for 20 years with effect from 8th June 2006. Mining plan is approved for the production quantity of 0.8 MTPA. The public hearing was conducted on 22nd October 2008. No National Park/Sanctuary is located within 10 km of the mine lease. Mine working will be opencast mechanized involving drilling and blasting. Water requirement for the project is estimated as 100 m³/day. Out of which 30 m³/day is from ground water source and 70 m³/day is from surface water source. The mine has obtained permission for drawal of 30 m³/day ground water from CGWA. The groundwater table is at 580m AMSL. The ultimate working depth will be 643m AMSL. The mine working will not intersect groundwater table. Waste generation will be 332475m³ during plan period. The mine has earmarked 2.76 ha as OB dump area (Plan period). The mine has proposed garland drain, check dams and retaining wall to prevent wash out of loose material from dump area. Dump slope will be stabilized by putting vegetation. The issue raised during public hearing were also presented and discussed during the meeting.

Based on the informations, documents and clarifications provided, the SEAC recommends for grant of environmental *clearance* in favour of the project for a period of five years subject to the following stipulated conditions:

- i) The applicant (Project proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, Water Pollution, Noise Pollution and Land Pollution including solid waste management as mentioned by him in Form-1, Final EIA reports and Environment Management Plan (EMP) in compliance with the prescribed statutory norms and standards.
- ii) The applicant will take necessary steps for socio-economic development of the people of the area on need based assessment for providing employment, education, health care, drinking water and sanitation, road and communication facilities etc.
- iii) The applicant will comply to the points, concerns and issues raised by the people during public hearing on 22nd October, 2008 in accordance with the commitments made by him thereon.
- iv) The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.
- v) For post environmental clearance monitoring, the applicant will submit half-yearly compliance report in respect of the stipulated terms and conditions of Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa on 1st June and 1st December of each calendar year.
- vi) The core zone should be monitored intensively with no. of stations as prescribed by CPCB, Delhi and unit of pollutant level should be expressed as NAAQ of CPCB, Delhi. The detail methodology adopted for analysis of samples shall be clearly indicated.
- vii) The proponent shall submit ground tothing baseline data on flora & fauna and CSR activities already carried out within three months to the SEIAA, Orissa.
- viii) No two pits shall be simultaneously worked. After exhausting the first mine pit and before starting mining operations in the next pit, reclamation and plantation works in the exhausted pit shall be completed so as to ensure that reclamation, forest cover and vegetation should be visible during the first year of mining operations in the next pit. This process will follow till the last pit is exhausted. Adequate rehabilitation of mined pit shall be completed before any new ore body is worked.
- ix) Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.
- x) Zero waste mining concept shall be implemented either by putting up pelletisation plant or dispose of low grade ores/fines to prospective buyers.
- xi) The following shall be implemented viz. (a) dump run-off should be diverted into settling ponds until it is clear (b) adequate rain water harvesting and ground water recharging facilities should be developed in the core zone; (c) attempt should be made to achieve zero water balance.
- xii) Maintenance of roads through which transportation of ores are undertaken shall be carried out by the project proponent regularly at its own cost.

- xiii) Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records shall be submitted to the SEIAA, Orissa.
- xiv) Transportation of ore shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore / dust takes place.
- xv) Rain water harvesting shall be undertaken to recharge the ground water source.
- xvi) Monitoring of ground and surface water quality shall be regularly conducted and records should be maintained and data shall be submitted regularly to the SEIAA, Orissa.
- xvii) The proponent shall ensure that no silt originating due to mining activity is transported in the surface water course. Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.
- xviii) Trenches / garland drains shall be constructed at foot of dumps to arrest silt from being carried to water bodies. Adequate number of Check Dams shall be constructed across seasonal/perennial nallahs (if any) flowing through the ML area and silts be arrested. De-silting at regular intervals shall be carried out.
- xix) Provision shall be made for the housing of the labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- xx) Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health effects on exposure to mineral dust etc. shall be carried out. The Proponent shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness programme for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be conducted followed by follow up action wherever required. Occupational Health Centre shall be established near the mine site itself.
- xxi) Shelter belt i.e Wind Break of 15 m width and consisting of at least 5 tiers around lease facing the human habitation, school / agricultural fields **etc.** (if any in the vicinity), in the safety zone/ back-filled & reclaimed areas, around voids & roads shall be raised. Green belt development and selection of plant species shall be as per CPCB guidelines. Density of the trees has to be around 2500 plants per hectare. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. Help & guidance of local DFO may be sought in the matter. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the SEIAA, Orissa within six months.

- xxii) This Environmental clearance is subject to Forest clearance under the Forest (Conservation) Act, 1980.
- xxiii) The mining operations shall be restricted to above ground water table and it should not intersect the groundwater table.
- xxiv) The top soil shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years). The topsoil shall be used for land reclamation and plantation.
- xxv) The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and its phase-wise stabilization shall be carried out. Proper terracing of OB dump shall be carried out so that the overall slope shall not exceed 28^o Backfilling shall be done as per approved mining plan. Back-filling to start from 3rd year onwards of the mining operation & the entire quantity of waste generated shall be backfilled & liquidated within five years. There shall be no external over-burden dumps after the 6th year of the mining operation. The backfilled area shall be afforested. Back-filling has to be done in a manner that it is restored to the normal ground level. Monitoring & management of rehabilitated areas should continue till the vegetation is established & becomes self-generating. Compliance status to be reported to the appropriate authorities.
- xxvi) The funds earmarked for the environment protection measures shall be judiciously utilized. Under no circumstances this funds shall be diverted for other purposes. Year-wise expenditure for this fund should be reported to the SEIAA, Orissa.
- xxvi) The above mentioned stipulated conditions shall be complied in time bound manner. Failure to comply with any of the conditions mentioned above may result in withdrawal of this environmental clearance and attract action under the provisions of Environment Protection (EP) Act, 1986.

ITEM NO. 2

PROPOSAL OF M/S. BHUSAN ENERGY LIMITED TO SET UP 2X150 MW (CFBC) THERMAL POWER PLANT AT – MERAMANDALI, DIST – DHENKANAL, ORISSA

The proponent made a presentation on the proposal for consideration of the SEAC. The proposal is for grant of environmental clearance for setting up of 2x150 MW coal based thermal power project at Meramandali, District – Dhenkanal, Orissa. The TOR for this project was prescribed on 14.11.07 by EAC of MoEF, Govt. of India. There are no sanctuaries, National parks, Tiger reserve or Biosphere reserve existing within 10 km radius.

The proposed plant will be located inside the existing premises of integrated steel plant of M/s. Bhushan Steel Ltd. at Meramandali in the district of Dhenkanal.

Bhushan Energy Ltd is a subsidiary of Bhushan Steel Ltd. The plant is located at a distance 18 km from Angul and 42 km from Dhenkanal.

The major drainage channel of the area is river Brahmani and its tributaries Singra Jhor, Lingra jhor, Tikira and Samakoi, Lingra jhor is passing close to the plant site.

The unit will require 296.8 acre land which will be leased out by Bhushan Steel Ltd to M/s. Bhushan Energy Ltd. Out of 296.8 acre, 75.1 acre will be used for power plant and 221.7 acres will be used for ash disposal and other facilities.

Water requirement is 1385 m³/hr and will be sourced from existing water reservoir of M/s. Bhushan Steel Ltd. The unit will use middlings of 1376000 TPA and char of 594000 TPA as fuel in the thermal power plant. Middlings will be sourced from coal washery and char from DRI plants of Bhushan Steel Ltd. If adequate middlings will not available then coal will be purchased from MCL. Public hearing was held on 31.10.08.

Based on the informations, documents and clarifications provided, the SEAC recommends for grant of environmental *clearance* in favour of the project for a period of five years subject to the following stipulated conditions

- i) The applicant (Project proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, Water Pollution, Noise Pollution and Land Pollution including solid waste management as mentioned by him in Form-1, Final EIA reports and Environment Management Plan (EMP) in compliance with the prescribed statutory norms and standards.
- ii) The applicant will take necessary steps for socio-economic development of the people of the area on need based assessment for providing employment, education, health care, drinking water and sanitation, road and communication facilities etc.
- iii) The applicant will comply to the points, concerns and issues raised by the people during public hearing on 31.10.2008 in accordance with the commitments made by him thereon.
- iv) The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.
- v) For post environmental clearance monitoring, the applicant will submit half-yearly compliance report in respect of the stipulated terms and conditions of Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa on 1st June and 1st December of each calendar year.
- vi) High efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm³.
- vii) The proponent shall treat the flue gas through Flue Gas De-sulphurisation (FGD), if SO₂ emission level exceed the prescribed norm.

- viii) Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.
- ix) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. 100% fly ash utilization shall be ensured as per fly ash notification of MoEF, Govt. of India. Unutilized fly ash and bottom ash shall be stored in the ash pond separately through high concentration slurry disposal method. Mercury levels along with other heavy metals (Pb, Cr, As etc.) should be monitored in the fly ash / bottom ash, leachates and effluents emanating from the ash pond.
- x) The ash pond should be constructed with impervious lining and ash pond embankment should be stone pitched.
- xi) The treated effluents conforming to the prescribed standards shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary. Arrangements shall be made so that effluents and storm water do not get mixed.
- xii) A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/plantation.
- xiii) Rainwater harvesting should be adopted. Central Groundwater Authority/ Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished to the SEIAA, Orissa.
- xiv) Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Details of these measures to be taken along with location plant layout shall be submitted to the SEIAA, Orissa.
- xv) Storage facilities for auxiliary liquid fuel such as LDO and/ HFO/LSHS shall be made in the plant area where risk is minimum. On site and off site Disaster Management Plans shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modifications required, if any shall be incorporated in the Disaster Management Plan (DMP). Sulphur content in the liquid fuel will not exceed 0.5%.
- xvi) Regular monitoring of ground water in and around the ash pond area shall be carried out, records maintained and half yearly reports shall be furnished to the SEIAA, Orissa.
- xvii) A green belt of adequate width and density preferably with local species along the periphery of the plant & alongside roads etc shall be raised so as to provide protection against particulates and noise. It must be ensured that at least 33% of the total land area shall be under permanent green cover. The project proponent shall ensure proper maintenance of green belt throughout the year & for this purpose they may engage professionals in this field for creation and maintenance of the green belt. An action plan for this purpose shall be prepared accordingly and submitted to the SEIAA, Orissa.
- xviii) First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
- xix) Noise levels emanating from turbines and air compressors shall be limited to 75 dBA. For people working in the high noise area, requisite personal protective equipments like earplugs/ear muffs etc. shall be provided. Workers

engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy/less noisy areas.

- xx) Regular monitoring of ground level concentration of SO₂, NO_x, SPM, RSPM and mercury shall be carried out in the impact zone and records to be maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be taken immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB, Orissa.
- xxi) Provision shall be made for housing of construction labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- xxii) A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.
- xxiii) Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to the appropriate authorities.
- xxiv) Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported.
- xxv) The above mentioned stipulated conditions shall be complied in time bound manner. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment Protection (EP) Act, 1986.

ITEM NO. 3

PROPOSAL OF DEOJHAR IRON ORE MINE OF M/S. TARINI MINERALS (P) LTD TO INCREASE IRON ORE PRODUCTION FROM 0.036 MTPA TO 1.5 MTPA AT – DEOJHAR, DIST – KEONJHAR.

The proponent made a presentation on the proposal for consideration of the SEAC. The proposal is for enhancement of production of iron ore from 0.036 MTPA to 1.5 MTPA. The TOR for this project were prescribed on Dtd. 25.6.08 by the Expert Appraisal Committee of MoEF, Govt. of India. The mine lease area is 34.365 hectare. Entire lease area is forest area. The mine has got forest clearance from MoEF Govt. of India for diversion of 34.365 hectare The lease deed for this mine was executed for a period of 20 years with effect from dated 5.9.1994. Mining plan is approved for maximum production of 1505665 TPA. The public hearing was conducted on 4th February,2009. No National Park/Sanctuary is located within 10 km of the mine lease area. Mine working will be opencast mechanized involving drilling and blasting. Water

requirement for the project is estimated to be 75 m³/day. The source of water is ground water. The mine has not submitted copy of permission for drawal of 75 m³/day ground water from concerned authority. The mine working will not intersect groundwater table. Waste generation will be 0.204 million m³ during plan period. The mine has earmarked 2.092 ha as OB dump area (Plan period). The mine has proposed garland drains, check dams and retaining walls to prevent wash out of loose material from dump area. Dump slope will be stabilized by putting vegetation. The issue raised during public hearing were also presented and discussed during the meeting.

Based on the informations, documents and clarifications provided, the SEAC recommends the project for grant of environmental clearance in favour of the project for a period of five years subject to the following stipulated conditions:

- i) The applicant (Project proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, Water Pollution, Noise Pollution and Land Pollution including solid waste management as mentioned by him in Form-1, Final EIA reports and Environment Management Plan (EMP) in compliance with the prescribed statutory norms and standards.
- ii) The applicant will take necessary steps for socio-economic development of the people of the area on need based assessment for providing employment, education, health care, drinking water and sanitation, road and communication facilities etc.
- iii) The applicant will comply to the points, concerns and issues raised by the people during public hearing on 4th February, 2009 in accordance with the commitments made by him thereon.
- iv) The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.
- v) For post environmental clearance monitoring, the applicant will submit half-yearly compliance report in respect of the stipulated terms and conditions of this Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa on 1st June and 1st December of each calendar year.
- vi) The core zone should be monitored intensively with no. of stations as prescribed by CPCB, Delhi and unit of pollutant level should be expressed as NAAQ of CPCB, Delhi. The detail methodology adopted for analysis of samples shall be clearly indicated.
- vii) The proponent shall submit ground tooting baseline data on flora & fauna and CSR activities already carried out within three months to the SEIAA, Orissa
- viii) No two pits shall be simultaneously worked. After exhausting the first mine pit and before starting mining operations in the next pit, reclamation and plantation works in the exhausted pit shall be completed so as to ensure that reclamation, forest cover and vegetation should be visible during the first year of mining operations in the next pit. This process will follow till the last pit is

exhausted. Adequate rehabilitation of mined pit shall be completed before any new ore body is worked.

- ix) Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.
- x) Zero waste mining concept shall be implemented either by putting up pelletisation plant or disposal of low grade ores/fines to prospective buyers.
- xi) The following shall be implemented viz. (a) dump run-off should be diverted into settling ponds until it is clear (b) adequate rain water harvesting and ground water recharging facilities should be developed in the core zone; (c) attempt should be made to achieve zero water balance.
- xii) Maintenance of roads through which transportation of ores are undertaken shall be carried out by the project proponent regularly at its own cost.
- xiii) Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records shall be submitted to the SEIAA, Orissa.
- xiv) Transportation of ore shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore / dust takes place.
- xv) Rain water harvesting shall be undertaken to recharge the ground water source.
- xvi) Monitoring of ground and surface water quality shall be regularly conducted and records should be maintained and data shall be submitted regularly to the SEIAA, Orissa.
- xvii) The proponent shall ensure that no silt originating due to mining activity is transported in the surface water course. Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo-textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.
- xviii) Trenches / garland drains shall be constructed at foot of dumps to arrest silt from being carried to water bodies. Adequate number of Check Dams shall be constructed across seasonal/perennial nallahs (if any) flowing through the ML area and silts be arrested. De-silting at regular intervals shall be carried out.
- xix) Provision shall be made for the housing the labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- xx) Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health effects on exposure to mineral dust etc. shall be carried out. The Proponent shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness programme for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be

conducted followed by follow up action wherever required. Occupational Health Centre shall be established near the mine site itself

- xxi) Shelter belt i.e Wind Break of 15 m width and consisting of at least 5 tiers around the lease facing the human habitation, school / agricultural fields etc. (if any in the vicinity), in the safety zone/ back-filled & reclaimed areas, around voids & roads shall be raised. Green belt development and selection of plant species shall be as per CPCB guidelines. Density of the trees has to be around 2500 plants per hectare. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. Help & guidance of local DFO may be sought in the matter. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the SEIAA, Orissa within six months.
- xxii) This Environmental clearance is subject to Forest clearance under the Forest (Conservation) Act, 1980.
- xxiii) The mining operations shall be restricted to above ground water table and it should not intersect the groundwater table.
- xxiv) The top soil shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years). The topsoil shall be used for land reclamation and plantation
- xxv) The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and its phase-wise stabilization shall be carried out. Proper terracing of OB dump shall be carried out so that the overall slope shall not exceed 28^o Backfilling shall be done as per approved mining plan. Back-filling to start from 3rd year onwards of the mining operation & the entire quantity of waste generated shall be backfilled & liquidated within five years. There shall be no external over-burden dumps after the 6th year of the mining operation. The backfilled area shall be afforested. Back-filling has to be done in a manner that it is restored to the normal ground level. Monitoring & management of rehabilitated areas should continue till the vegetation is established & becomes self-generating. Compliance status to be reported to the appropriate authorities.
- xxvi) The funds earmarked for the environment protection measures shall be judiciously utilized. Under no circumstances this funds shall be diverted for other purposes. Year-wise expenditure for this fund should be reported to the SEIAA, Orissa..
- xxvii) The above mentioned stipulated conditions shall be complied in time bound manner. Failure to comply with any of the conditions mentioned above may result in withdrawal of this environmental clearance and attract action under the provisions of Environment Protection (EP) Act, 1986.

ITEM NO. 4**PROPOSAL OF UNCHABALI IRON & MANGANESE MINES OF SHRI PRABODH MOHANTY TO INCREASE IRON ORE PRODUCTION FROM 10057 TON/ANNUM TO 44,590 TON/ANNUM AND MANGANESE ORE PRODUCTION FROM 1050 TON/ANNUM TO 16,224 TPA AT – UNCHABALI, PO – NAYAGARH, DIST – KEONJHAR**

The proponent made a presentation on the proposal for consideration of the SEAC. The proposal is for enhancement of production of iron ore from 10057 TPA to 44,590 TPA and Manganese ore production from 1050 TPA to 16,224 TPA. The TOR for this project were prescribed on dtd. 4.9.08 by the Expert Appraisal Committee of MoEF, Govt. of India. The mine lease area is 9.63 hectare. Out of which 1.5 ha is forest land and 8.133 ha is non-forest land Mining lease was first executed for 20 years with effect from 7th January 1987 in favour of Late S.N. Mohanty and was valid up to 6th January 2007. Sri Prabodh Mohanty, legal heir of Late S.N.Mohanty has applied for renewal of the lease for an area of 8.133 ha excluding the forest area of 1.5 ha. Mining plan is approved for the production quantity applied for environmental clearance. The public hearing was conducted on 13th February 2009. No National Park/Sanctuary is located within 10 km of the mine lease area. Mine working will be opencast semi-mechanized involving drilling and blasting. Water requirement for the project is estimated to be 30 m³/day. The source of water is Baitarani River. The proponent has not submitted copy of permission for drawal of 30 m³/day River water from concerned authority. The groundwater table is at 480m AMSL. The ultimate working depth will be 580m AMSL. The mine working will not intersect groundwater table. Waste generation will be 94794 m³ during plan period The mine has earmarked 1.74 ha as OB dump area (Plan period). The mine has proposed garland drain, check dams and retaining wall to prevent wash out of loose material from dump area. Dump slope will be stabilized by putting vegetation. The issue raised during public hearing were also presented and discussed during the meeting.

Based on the informations, documents and clarifications provided, the SEAC recommends for grant of environmental clearance in favour of the project for a period of five years subject to the following stipulated conditions:

- i) The applicant (Project proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, Water Pollution, Noise Pollution and Land Pollution including solid waste management as mentioned by him in Form-1, Final EIA reports and Environment Management Plan (EMP) in compliance with the prescribed statutory norms and standards.

CHAIRMAN, SEAC

SECRETARY, SEAC

- ii) The applicant will take necessary steps for socio-economic development of the people of the area on need based assessment for providing employment, education, health care, drinking water and sanitation, road and communication facilities etc.
- iii) The applicant will comply to the points, concerns and issues raised by the people during public hearing on 13th February, 2009 in accordance with the commitments made by him thereon.
- iv) The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.
- v) For post environmental clearance monitoring, the applicant will submit half-yearly compliance report in respect of the stipulated terms and conditions of this Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa on 1st June and 1st December of each calendar year.
- vi) The core zone should be monitored intensively with no. of stations as prescribed by CPCB, Delhi and unit of pollutant level should be expressed as NAAQ of CPCB, Delhi. The detail methodology adopted for analysis of samples shall be clearly indicated.
- vii) The proponent shall submit ground tooting baseline data on flora & fauna and CSR activities already carried out within three months to the SEIAA, Orissa
- viii) No two pits shall be simultaneously worked. After exhausting the first mine pit and before starting mining operations in the next pit, reclamation and plantation works in the exhausted pit shall be completed so as to ensure that reclamation, forest cover and vegetation should be visible during the first year of mining operations in the next pit. This process will follow till the last pit is exhausted. Adequate rehabilitation of mined pit shall be completed before any new ore body is worked.
- ix) Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.
- x) Zero waste mining concept shall be implemented either by putting up pelletisation plant or disposal of low grade ores/fines to prospective buyers.
- xi) The following shall be implemented viz. (a) dump run-off should be diverted into settling ponds until it is clear (b) adequate rain water harvesting and ground water recharging facilities should be developed in the core zone; (c) attempt should be made to achieve zero water balance.
- xii) Maintenance of roads through which transportation of ores are undertaken shall be carried out by the project proponent regularly at its own cost.
- xiii) Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records shall be submitted to the SEIAA, Orissa.
- xiv) Transportation of ore shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore / dust takes place.
- xv) Rain water harvesting shall be undertaken to recharge the ground water source.

- xvi) Monitoring of ground and surface water quality shall be regularly conducted and records should be maintained and data shall be submitted regularly to the SEIAA, Orissa.
- xvii) The proponent shall ensure that no silt originating due to mining activity is transported in the surface water course. Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.
- xviii) Trenches / garland drains shall be constructed at foot of dumps to arrest silt from being carried to water bodies. Adequate number of Check Dams shall be constructed across seasonal/perennial nallahs (if any) flowing through the ML area and silts be arrested. De-silting at regular intervals shall be carried out.
- xix) Provision shall be made for the housing the labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- xx) Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health effects on exposure to mineral dust etc. shall be carried out. The Proponent shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness programme for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be conducted followed by follow up action wherever required. Occupational Health Centre shall be established near the mine site itself
- xxi) Shelter belt i.e Wind Break of 15 m width and consisting of at least 5 tiers around lease facing the human habitation, school / agricultural fields etc. (if any in the vicinity), in the safety zone/ back-filled & reclaimed areas, around voids & roads shall be raised. Green belt development and selection of plant species shall be as per CPCB guidelines. Density of the trees has to be around 2500 plants per hectare. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. Help & guidance of local DFO may be sought in the matter. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the SEIAA, Orissa within six months.
- xxii) The mining operations shall be restricted to above ground water table and it should not intersect the groundwater table.
- xxiii) The top soil shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 year). The topsoil shall be used for land reclamation and plantation.
- xxiv) The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and its phase-wise stabilization shall be carried out. Proper terracing of OB dump shall be carried out so that the overall slope shall not exceed 28° Backfilling shall be done as per approved mining plan. Back-filling to start from 3rd year onwards of the mining operation & the entire quantity of

waste generated shall be backfilled & liquidated within five years. There shall be no external over-burden dumps after the 6th year of the mining operation. The backfilled area shall be afforested. Back-filling has to be done in a manner that it is restored to the normal ground level. Monitoring & management of rehabilitated areas should continue till the vegetation is established & becomes self-generating. Compliance status to be reported to the appropriate authorities.

- xxv) The funds earmarked for the environment protection measures shall be judiciously utilized. Under no circumstances this funds shall be diverted for other purposes. Year-wise expenditure for this fund should be reported to the SEIAA, Orissa.
- xxvi) The above mentioned stipulated conditions shall be complied in time bound manner. Failure to comply with any of the conditions mentioned above may result in withdrawal of this environmental clearance and attract action under the provisions of Environment Protection (EP) Act, 1986.

ITEM NO. 5

M/S. SHREE GANESH SOPNGE (P) LTD, KUTUGAON, P.O. CHIPINDA, DIST-KEONJHAR, PROPOSAL OF INDUCTION FURNACE 60,000TPA, ROLLING MILL-50,000 TPA.

M/s. Shree Ganesh Sponge (P) Ltd, Kutugaon in the district of Keonjhar had applied for TOR for expansion of sponge iron plant for setting up induction furnace of capacity 60,000 TPA and rolling mill 50,000 TPA. The proponent intimated that they have modified the proposal for enhancement of sponge iron production capacity as well as installation of captive power plant of 8 MW in addition to the installation of induction furnace of capacity 60,000 TPA, rolling mill of capacity 50,000 TPA. Their modified proposal is coming under category-A project as per EIA notification, 2006. So they have applied a fresh to MoEF, Govt. of India and made presentation before EAC of MoEF, Govt. of India on 14.4.09 for issue of TOR for EIA study.

After detail deliberation, the SEAC decided to de-list the proposal and close the file.

ITEM NO. 6

PROPOSAL OF SIDHAMATH IRON & MANGANESE MINES OF M/S. DHARAMCHAN JAIN OVER AN AREA 29.241 HA. IN KEONJHAR

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006. For this

purpose, the proponent had submitted information in the prescribed format (Form-I) along with feasibility report.

The proposal is for production of Iron ore up-to 1.5 MTPA . The mine lease area is 29.241 ha. The applicant ganted ML over 637 Ac in Sidhamath R.F. of Keonjhar for Iron ore & Mn mine, by mining dept.Govt of Orissa vide Proceeding No.6175 dt.5.6.84 . Subsequently the lease area was revised to 28.485 ha vide dept of Steel and Mines Memo No.5546, dt.18.5.94 and subsequently the area recomputed to 29.421 ha vide letter No.10988, dt.23.8.84. Mine working will be opencast mechanized involving drilling and blasting. Water requirement is 50 KLD and source of water is ground water.

Based on the information furnished and presentation made, the SEAC prescribed the following TORs for undertaking detailed EIA study

- i) Duly attested & certified Mining Plan approved by IBM has to be submitted along with the copy of current lease deed
- ii) The study area shall encompass 10 km radius from the mine lease boundary.
- iii) Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna. Site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.
- iv) Air quality modelling should be carried out for prediction of impact of the project and the existing mines in the vicinity on the air quality of the area focusing more in the villages within 3 kms from the mine. It should also take into account the impact of movement of vehicles for transportation of mineral, handling of minerals & OB including mining activity through volume source modeling. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map. The modelling should take into consideration the existing mines in the study area.
- v) Availability of requisite quantity of water and its source to be furnished along with water balance.
- vi) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.
- vii) Details of water bodies and drainage of ML area may be specified
- viii) The progressive reclamation plan, post mine land use and progressive greenbelt development plan shall be prepared in tabular form and submitted. Milestones for the above activity may be specified.
- ix) Location of National Parks, Sanctuaries, Biosphere Reserves, wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), and existence of rare and endangered flora and fauna if any, within 10 km of the

mine lease should be clearly indicated. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above under the Wildlife (Protection) Act, 1972 and copy may be furnished.

- x) A detailed biological study of the study area (core zone & buffer zone- 10 km radius of the mining lease area) shall be carried out. Details of flora & fauna, duly authenticated separately for core & buffer zone should be furnished based on field survey indicating the schedule of the fauna present; in case of any schedule-I fauna found in the study area, necessary plan for their conservation should be prepared in consultation with the State Forest & Wildlife Department & details furnished. Necessary cost details for executing the conservation measures should be furnished & incorporated as part of the project cost.
- xi) Occupational health impact and remedial measures thereof of the project may be studied.
- xii) Baseline data for health status survey for all the employees including labourers and the residents of the nearby villages within 5 km distance may be carried out..
- xiii) Socio economic impact due to project activity to be assessed and based on the study, developmental activity proposed to be undertaken by the project proponent to be specified. As far as possible quantitative dimension to be given. Study should include Corporate Social Responsibility (CSR) and it should be carried out as the entry point activity as trust building measures.
- xiv) Welfare of mine workers is the prime responsibility of the project proponent. Various activities such as regular health checkups, first-aid, shelter for rest and meals, drinking water etc. are to be taken up at the project cost. Nearby mine owners may form a society and funds for welfare of mineworkers may be created. Besides various Govt. schemes and other sources may be explored. This aspect has to be covered in the EMP.
- xv) Public hearing points likely to be raised and commitment of the project proponent on the same may be included.
- xvi) Plantation in at least 33% of the total area and its maintenance upto five years and regular follow up maintenance thereof has to be ensured; accordingly plan has to be submitted with EIA. [Plantation Scheme]. Total area for which afforestation has been proposed – plan stating how much plantation shall be taken up annually has to be submitted. Plantation of local species may be encouraged. Cost details of the afforestation/ plantation on backfilled reclaimed area to be furnished.
- xvii) Management of OB solid waste generated during mining has to be addressed through incorporation of a concrete plan for the same.
- xviii) Leachate study of the OB and Ore has to be conducted and addressed.
- xix) Depth of ground-water table and its recharging , run off management, rain water harvesting and treatment system for pumped out quarry water to be submitted.
- xx) Details of noise pollution control measures to be specified
- xxi) Coloured maps depicting land use of the region showing sensitive / fragile features and detailed lay-out of the site clearly showing green-belt (existing & planned) should be furnished.

- xxii) Satellite imagery of the location of mine should be submitted with demarcation of other proposed/in operation mines in nearby area. Location is also to be shown in Tehsil map procured from revenue department. This will be used as baseline information to compare the impact of mining in the area in future.
- xxiii) Details of air pollution control measures to be specified.
- xxiv) Details of safety measures to be adopted during blasting are to be specified
- xxv) Details of accessibility and nearby habitation may be specified.
- xxvi) Details of nearby operating mines with respect to type, capacity, pollution load to be specified.

ITEM NO. 7.

PROPOSAL OF BHUDARAJA IRON & MANGANESE MINE OVER AN AREA OF 42.985 HA. AT - BADAMPAHAR, DIST – MAYURBHANJ.

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006. For this purpose, the proponent had submitted information in the prescribed format (Form-I) along with feasibility report.

The proposal is for production of Iron ore 2,90,000TPA . The mine lease area is 42.895 ha. Out of total area, 8.14ha has broken up excluding safety zone 1.327 ha prior to 25th October 1980. Mine working will be opencast semi-mechanized involving drilling and blasting. Water requirement is 15 KLD and source is ground water.

Based on the information furnished and presentation made, the SEAC prescribed the following TORs for undertaking detailed EIA study

- i) Duly attested & certified Mining Plan approved by IBM has to be submitted along with the copy of current lease deed.
- ii) The study area shall encompass 10 km radius from the mine lease boundary.
- iii) Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna. Site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.
- iv) Air quality modelling should be carried out for prediction of impact of the project and the existing mines in the vicinity on the air quality of the area focusing more in the villages within 3 kms from the mine. It should also take into account the impact of movement of vehicles for transportation of mineral, handling of minerals & OB including mining activity through volume source

modeling. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map. The modelling should take into consideration the existing mines in the study area.

- v) Availability of requisite quantity of water and its source to be furnished along with water balance.
- vi) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.
- vii) Details of water bodies and drainage of ML area may be specified
- viii) The progressive reclamation plan, post mine land use and progressive greenbelt development plan shall be prepared in tabular form and submitted. Milestones for the above activity may be specified.
- ix) Location of National Parks, Sanctuaries, Biosphere Reserves, wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), and existence of rare and endangered flora and fauna if any, within 10 km of the mine lease should be clearly indicated. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above under the Wildlife (Protection) Act, 1972 and copy may be furnished.
- x) A detailed biological study of the study area (core zone & buffer zone- 10 km radius of the mining lease area) shall be carried out. Details of flora & fauna, duly authenticated separately for core & buffer zone should be furnished based on field survey indicating the schedule of the fauna present; in case of any schedule-I fauna found in the study area, necessary plan for their conservation should be prepared in consultation with the State Forest & Wildlife Department & details furnished. Necessary cost details for executing the conservation measures should be furnished & incorporated as part of the project cost.
- xi) Occupational health impact and remedial measures thereof of the project may be studied.
- xii) Baseline data for health status survey for all the employees including labourers and the residents of the nearby villages within 5 km distance may be carried out..
- xiii) Socio economic impact due to project activity to be assessed and based on the study, developmental activity proposed to be undertaken by the project proponent to be specified. As far as possible quantitative dimension to be given. Study should include Corporate Social Responsibility (CSR) and it should be carried out as the entry point activity as trust building measures.
- xiv) Welfare of mine workers is the prime responsibility of the project proponent. Various activities such as regular health checkups, first-aid, shelter for rest and meals, drinking water etc. are to be taken up at the project cost. Nearby mine owners may form a society and funds for welfare of mineworkers may be created. Besides various Govt. schemes and other sources may be explored. This aspect has to be covered in the EMP.
- xv) Public hearing points likely to be raised and commitment of the project proponent on the same may be included.

- xvi) Plantation in at least 33% of the total area and its maintenance upto five years and regular follow up maintenance thereof has to be ensured; accordingly plan has to be submitted with EIA. [Plantation Scheme]. Total area for which afforestation has been proposed – plan stating how much plantation shall be taken up annually has to be submitted. Plantation of local species may be encouraged.
- xvii) Management of OB solid waste generated during mining has to be addressed through incorporation of a concrete plan for the same.
- xviii) Leachate study of the OB and Ore has to be conducted and addressed.
- xix) Depth of ground-water table and its recharging , run off management, rain water harvesting and treatment system for pumped out quarry water to be submitted.
- xx) Details of noise pollution control measures to be specified
- xxi) Coloured maps depicting land use of the region showing sensitive / fragile features and detailed lay-out of the site clearly showing green-belt (existing & planned) should be furnished.
- xxii) Satellite imagery of the location of mine should be submitted with demarcation of other proposed/in operation mines in nearby area. Location is also to be shown in Tehsil map procured from revenue department. This will be used as baseline information to compare the impact of mining in the area in future.
- xxiii) Details of air pollution control measures to be specified.
- xxiv) Details of safety measures to be adopted during blasting are to be specified
- xxv) Details of accessibility and nearby habitation may be specified.
- xxvi) Details of nearby operating mines with respect to type, capacity, pollution load to be specified.

ITEM NO. 8

PROPOSAL OF NUAGAON IRON & MANGANESE MINES TO INCREASE IRON ORE PRODUCTION UPTO 4,00,000 TPA, MANGANESE ORE PRODUCTION UPTO 25,000 TPA WITH SCREENING PLANT 350 TPH AT – NUAGAON, DIST – SUNDERGARH.

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006. For this purpose, the proponent had submitted information in the prescribed format (Form-I) along with feasibility report.

The proposal is for production of Iron ore up-to 4,00,000 TPA, Manganese Ore production up to 25,000 TPA with screening plant 350 TPH. The mine lease area is 29.257 ha. There is no forest land in mining lease area. Mine working will be

opencast semi-mechanized involving drilling and blasting. Water requirement is 100 KLD and source will be ground water.

Based on the information furnished and presentation made, the SEAC prescribed the following TORs for undertaking detailed EIA study

- i) Duly attested & certified Mining Plan approved by IBM has to be submitted along with the copy of current lease deed
- ii) The study area shall encompass 10 km radius from the mine lease boundary.
- iii) Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna. Site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.
- iv) Air quality modeling should be carried out for prediction of impact of the project and the existing mines in the vicinity on the air quality of the area focusing more in the villages within 3 kms from the mine. It should also take into account the impact of movement of vehicles for transportation of mineral, handling of minerals & OB including mining activity through volume source modeling. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map. The modeling should take into consideration the existing mines in the study area.
- v) Availability of requisite quantity of water and its source to be furnished along with water balance.
- vi) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.
- vii) Details of water bodies and drainage of ML area may be specified
- viii) The progressive reclamation plan, post mine land use and progressive greenbelt development plan shall be prepared in tabular form and submitted. Milestones for the above activity may be specified.
- ix) Location of National Parks, Sanctuaries, Biosphere Reserves, wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), and existence of rare and endangered flora and fauna if any, within 10 km of the mine lease should be clearly indicated. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above under the Wildlife (Protection) Act, 1972 and copy may be furnished.
- x) A detailed biological study of the study area (core zone & buffer zone- 10 km radius of the mining lease area) shall be carried out. Details of flora & fauna, duly authenticated separately for core & buffer zone should be furnished based on field survey indicating the schedule of the fauna present; in case of any schedule-I fauna found in the study area, necessary plan for their conservation should be prepared in consultation with the State Forest & Wildlife Department & details furnished. Necessary cost details for executing the conservation measures should be furnished & incorporated as part of the project cost.

- xi) Occupational health impact and remedial measures thereof of the project may be studied.
- xii) Baseline data for health status survey for all the employees including labourers and the residents of the nearby villages within 5 km distance may be carried out..
- xiii) Socio economic impact due to project activity to be assessed and based on the study, developmental activity proposed to be undertaken by the project proponent to be specified. As far as possible quantitative dimension to be given. Study should include Corporate Social Responsibility (CSR) and it should be carried out as the entry point activity as trust building measures.
- xiv) Welfare of mine workers is the prime responsibility of the project proponent. Various activities such as regular health checkups, first-aid, shelter for rest and meals, drinking water etc. are to be taken up at the project cost. Nearby mine owners may form a society and funds for welfare of mineworkers may be created. Besides various Govt. schemes and other sources may be explored. This aspect has to be covered in the EMP.
- xv) Public hearing points likely to be raised and commitment of the project proponent on the same may be included.
- xvi) Plantation in at least 33% of the total area and its maintenance upto five years and regular follow up maintenance thereof has to be ensured; accordingly plan has to be submitted with EIA. [Plantation Scheme]. Total area for which afforestation has been proposed – plan stating how much plantation shall be taken up annually has to be submitted. Plantation of local species may be encouraged.
- xvii). Management of OB solid waste generated during mining has to be addressed through incorporation of a concrete plan for the same.
- xviii). Leachate study of the OB and Ore has to be conducted and addressed.
- xix) Depth of ground-water table and its recharging , run off management, rain water harvesting and treatment system for pumped out quarry water to be submitted.
- xx). Details of noise pollution control measures to be specified
- xxi). Colored maps depicting land use of the region showing sensitive / fragile features and detailed lay-out of the site clearly showing green-belt (existing & planned) should be furnished.
- xxii) Satellite imagery of the location of mine should be submitted with demarcation of other proposed/in operation mines in nearby area. Location is also to be shown in Tehsil map procured from revenue department. This will be used as baseline information to compare the impact of mining in the area in future.
- xxiii). Details of air pollution control measures to be specified.
- xxiv). Details of safety measures to be adopted during blasting are to be specified
- xv) Details of accessibility and nearby habitation may be specified.
- xvi) Details of nearby operating mines with respect to type, capacity, pollution load to be specified.

ITEM NO. 9**PROPOSAL OF M/S. NAVA BHARAT VENTURES LTD. FOR 64(1X64) MW THERMAL POWER PLANT WITHIN THE PREMISES OF EXISTING PLANT AT – KHARAGPRASAD, DIST – DHENKANAL**

The proposal was considered by the SEAC to prescribed the Terms of Reference (TORs). For the purpose, the proponent had submitted information in the prescribed format (Form-I) along with pre-feasibility report.

The proposal is for setting up of a 64 MW coal based captive power plant as an expansion of the existing 94 MW power plant to be located at Kharagprasad village, Dhenkanal District, Orissa. CFBC boilers will be provided. Coal requirement is estimated to be 1656 TPD. Water requirement is estimated as 7273 m³/day, which will be met from Brahmani River. The total cost of the project will be Rs. 253.44 crores. Coal requirement may be met from MCL coalfields.

Based on the information furnished and presentation made, the SEAC prescribed the following TOR for undertaking detailed EIA study.

- i. Compliance status of the stipulated conditions of Environmental Clearance for the existing power project shall be provided.
- ii. The plant site details as well as ash pond to be depicted in topo sheet may be provided.
- iii. The study area should cover an area of 10 km radius around the proposed site.
- iv. Land use of the study area as well as the project area shall be given.
- v. Location of any National Park, Sanctuary, Elephant / Tiger Reserve (existing as well as proposed), migratory routes, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden.
- vi. Land requirement for the project to be optimized. Item wise break up of land requirement and its availability to be furnished. The norms prescribed by CEA should be kept in view. It should also include land to be acquired, if any, for coal transportation system as well as for laying of pipeline. It may clearly be confirmed that the land is free of all encumbrances. The issues relating to land acquisition and R&R should be clearly discussed in the EIA report.
- vii. Topography of the area should be given clearly indicating whether the site requires any filling. If so, details of filling, quantity of fill material required, its source, transportation etc. should be given.
- viii. Impact of the project on drainage of the area and its surroundings should be indicated.
- ix. Details of the Geo technical and hydrological studies should be provided.

- x. Information regarding surface hydrology and water regime and impact of the same, if any due to the project should be provided.
- xi. One season site-specific meteorological data shall be provided.
- xii. One complete season AAQ data (except monsoon) to be given along with the dates of monitoring. The parameters to be covered shall include SPM, RSPM, SO₂, NO_x, Hg. The location of the monitoring stations should be so decided so as to take into consideration the pre-dominant downwind direction, population zone and sensitive receptors including reserved forests. There should be at least one monitoring station in the upwind direction. There should be at least one monitoring station in the pre dominant downwind direction at a location where maximum ground level concentration is likely to occur.
- xiii. Impact of the project on the AAQ of the area should be provided along with details of the model used and the input data used for modeling. The air quality contours may be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The wind roses should also be shown on this map.
- xiv. Fuel analysis to be provided (sulphur, ash content and heavy metals including Pb, Cr, As and Hg). Details of auxillary fuel, if any including its quantity, quality, storage etc should also be given.
- xv. Quantity of fuel required, its source and transportation. A confirmed fuel linkage should be provided.
- xvi. Source of water and its availability. Commitment regarding availability of requisite quantity of water from the competent authority may be provided.
- xvii. Details of rainwater harvesting and how it will be used in the plant may be provided.
- xviii. Examine the feasibility of zero discharge. In case of any proposed discharge, its quantity, quality and point of discharge, users downstream etc. should be provided.
- xix. Optimization of Cycles of Concentration (COC) for water conservation shall be made. Other water conservation measures proposed in the project should also be given. Quantity of water requirement for the project should be optimized.
- xx. Details of water balance taking into account reuse and re-circulation of effluents should be provided.
- xxi. Details of greenbelt i.e. land with not less than 1500 trees per ha giving details of species, width of plantation, planning schedule etc. should be provided
- xxii. Details of evacuation of ash alongwith detailed plan of ash utilisation / management should be provided.
- xxiii. Details regarding ash pond impermeability including soil analysis report and whether it would be lined, if so details of the lining etc.
- xxiv. Detailed R&R plan/compensation package in consonance with the National / State R&R Policy for the project affected people including that due to fuel transportation system/pipeline, if any, shall be prepared taking into account the socio economic status of the area, homestead oustees, land oustees,

- landless labourers. An action plan with budgetary provisions shall be submitted.
- xxv. Details of activities to be taken up under CSR for this project with budgetary allocation should be submitted.
 - xxvi. Details of flora and fauna duly authenticated should be provided. In case of any scheduled fauna, conservation plan should be provided.
 - xxvii. Details regarding infrastructure facilities such as sanitation, fuel, restroom, medical facilities, safety during construction phase etc. to be provided to the workers during construction as well as operation phase.
 - xxviii. Public hearing points raised and commitment of the project proponent on the same, an action plan to address the issues raised during public hearing and the necessary allocation of funds for the same should be provided.
 - xxix. Measures of socio economic development to the local community proposed to be provided by project proponent may be provided. As far as possible, quantitative dimension to be given. Impact of the project on local infrastructure of the area such as road network and whether any additional infrastructure would need to be constructed and the agency responsible for the same with time frame may be indicated.
 - xxx. EMP to mitigate the adverse impacts due to the project along with item wise cost of its implementation to be provided.
 - xxxi. Risk assessment including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point in time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be provided.

ITEM NO. 10**PROPOSAL OF NAIBAGA & KATUPALI IRON ORE AND MN. MINES OVER AN AREA OF 48.117 HA. AT – NAIBAGA, DIST – KEONJHAR.**

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006. For this purpose, the proponent had submitted information in the prescribed format (Form-I) along with feasibility report.

The proposal is for production of Iron ore up-to 6,00,000 TPA, Manganese Ore production up to 25,000 TPA. The total mine lease area is 48.117 ha. Out of total mining lease area 30.258 ha is forest land. MoEF, Govt. of India accorded forest clearance for diversion of 26.89 ha in the year 2007. Mine working will be opencast mechanized involving drilling and blasting. Water requirement is 30 KLD which will be obtained from ground water source.

Based on the information furnished and presentation made, the SEAC prescribed the following TORs for undertaking detailed EIA study

- i) Duly attested & certified Mining Plan approved by IBM has to be submitted along with the copy of current lease deed
- ii) The study area shall encompass 10 km radius from the mine lease boundary.
- iii) Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna. Site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.
- iv) Air quality modelling should be carried out for prediction of impact of the project and the existing mines in the vicinity on the air quality of the area focusing more in the villages within 3 kms from the mine. It should also take into account the impact of movement of vehicles for transportation of mineral, handling of minerals & OB including mining activity through volume source modeling. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map. The modelling should take into consideration the existing mines in the study area.
- v) Availability of requisite quantity of water and its source to be furnished along with water balance.
- vi) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.
- vii) Details of water bodies and drainage of ML area may be specified

- viii) The progressive reclamation plan, post mine land use and progressive greenbelt development plan shall be prepared in tabular form and submitted. Milestones for the above activity may be specified.
- ix) Location of National Parks, Sanctuaries, Biosphere Reserves, wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), and existence of rare and endangered flora and fauna if any, within 10 km of the mine lease should be clearly indicated. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above under the Wildlife (Protection) Act, 1972 and copy may be furnished.
- x) A detailed biological study of the study area (core zone & buffer zone- 10 km radius of the mining lease area) shall be carried out. Details of flora & fauna, duly authenticated separately for core & buffer zone should be furnished based on field survey indicating the schedule of the fauna present; in case of any schedule-I fauna found in the study area, necessary plan for their conservation should be prepared in consultation with the State Forest & Wildlife Department & details furnished. Necessary cost details for executing the conservation measures should be furnished & incorporated as part of the project cost.
- xi) Occupational health impact and remedial measures thereof of the project may be studied.
- xii) Baseline data for health status survey for all the employees including labourers and the residents of the nearby villages within 5 km distance may be carried out..
- xiii) Socio economic impact due to project activity to be assessed and based on the study, developmental activity proposed to be undertaken by the project proponent to be specified. As far as possible quantitative dimension to be given. Study should include Corporate Social Responsibility (CSR) and it should be carried out as the entry point activity as trust building measures.
- xiv) Welfare of mine workers is the prime responsibility of the project proponent. Various activities such as regular health checkups, first-aid, shelter for rest and meals, drinking water etc. are to be taken up at the project cost. Nearby mine owners may form a society and funds for welfare of mineworkers may be created. Besides various Govt. schemes and other sources may be explored. This aspect has to be covered in the EMP.
- xv) Public hearing points likely to be raised and commitment of the project proponent on the same may be included.
- xvi) Plantation in at least 33% of the total area and its maintenance upto five years and regular follow up maintenance thereof has to be ensured; accordingly plan has to be submitted with EIA. [Plantation Scheme]. Total area for which afforestation has been proposed – plan stating how much plantation shall be taken up annually has to be submitted. Plantation of local species may be encouraged.
- xvii) Management of OB solid waste generated during mining has to be addressed through incorporation of a concrete plan for the same.
- xviii) Leachate study of the OB and Ore has to be conducted and addressed.
- xix) Depth of ground-water table and its recharging , run off management, rain water harvesting and treatment system for pumped out quarry water to be submitted.

- xx) Details of noise pollution control measures to be specified
- xxi) Coloured maps depicting land use of the region showing sensitive / fragile features and detailed lay-out of the site clearly showing green-belt (existing & planned) should be furnished.
- xxii) Satellite imagery of the location of mine should be submitted with demarcation of other proposed/in operation mines in nearby area. Location is also to be shown in Tehsil map procured from revenue department. This will be used as baseline information to compare the impact of mining in the area in future.
- xxiii)** Details of air pollution control measures to be specified.
- xxiv) Details of safety measures to be adopted during blasting are to be specified
- xxv) Details of accessibility and nearby habitation may be specified.
- xxvi) Details of nearby operating mines with respect to type, capacity, pollution load to be specified.

ITEM NO. 11**PROPOSAL OF JDL LIME STONE AND DOLOMITE MINES OVER AN LEASE HOLD AREA OF 39.42 HA. AT – DHARAURA, RAJGANGPUR, DIST - SUNDARGARH**

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006. For this purpose, the proponent had submitted information in the prescribed format (Form-I) along with feasibility report.

The proposal is for production of dolomite 0.0382 TPA and Limestone 0.0115 TPA. The total mine lease area is 39.42 ha. There is no forest land in mining lease area. Mine working will be opencast manual involving drilling and blasting. Water requirement is 16 KLD and source is ground water.

Based on the information furnished and presentation made, the SEAC prescribed the following TORs for undertaking detailed EIA study

- i) Duly attested & certified Mining Plan approved by IBM has to be submitted along with the copy of current lease deed
- ii) The study area shall encompass 10 km radius from the mine lease boundary.
- iii) Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna. Site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.
- iv) Air quality modeling should be carried out for prediction of impact of the project and the existing mines in the vicinity on the air quality of the area focusing more in the villages within 3 kms from the mine. It should also take into account the impact of movement of vehicles for transportation of mineral, handling of minerals & OB including mining activity through volume source modeling. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map. The modeling should take into consideration the existing mines in the study area.
- v) Availability of requisite quantity of water and its source to be furnished along with water balance.
- vi) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.
- vii) Details of water bodies and drainage of ML area may be specified

- viii) The progressive reclamation plan, post mine land use and progressive greenbelt development plan shall be prepared in tabular form and submitted. Milestones for the above activity may be specified.
- ix) Location of National Parks, Sanctuaries, Biosphere Reserves, wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), and existence of rare and endangered flora and fauna if any, within 10 km of the mine lease should be clearly indicated. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above under the Wildlife (Protection) Act, 1972 and copy may be furnished.
- x) A detailed biological study of the study area (core zone & buffer zone- 10 km radius of the mining lease area) shall be carried out. Details of flora & fauna, duly authenticated separately for core & buffer zone should be furnished based on field survey indicating the schedule of the fauna present; in case of any schedule-I fauna found in the study area, necessary plan for their conservation should be prepared in consultation with the State Forest & Wildlife Department & details furnished. Necessary cost details for executing the conservation measures should be furnished & incorporated as part of the project cost.
- xi) Occupational health impact and remedial measures thereof of the project may be studied.
- xii) Baseline data for health status survey for all the employees including labourers and the residents of the nearby villages within 5 km distance may be carried out..
- xiii) Socio economic impact due to project activity to be assessed and based on the study, developmental activity proposed to be undertaken by the project proponent to be specified. As far as possible quantitative dimension to be given. Study should include Corporate Social Responsibility (CSR) and it should be carried out as the entry point activity as trust building measures.
- xiv) Welfare of mine workers is the prime responsibility of the project proponent. Various activities such as regular health checkups, first-aid, shelter for rest and meals, drinking water etc. are to be taken up at the project cost. Nearby mine owners may form a society and funds for welfare of mineworkers may be created. Besides various Govt. schemes and other sources may be explored. This aspect has to be covered in the EMP.
- xv) Public hearing points likely to be raised and commitment of the project proponent on the same may be included.
- xvi) Plantation in at least 33% of the total area and its maintenance upto five years and regular follow up maintenance thereof has to be ensured; accordingly plan has to be submitted with EIA. [Plantation Scheme]. Total area for which afforestation has been proposed – plan stating how much plantation shall be taken up annually has to be submitted. Plantation of local species may be encouraged.
- xvii) Management of OB solid waste generated during mining has to be addressed through incorporation of a concrete plan for the same.
- xviii) Leachate study of the OB and Ore has to be conducted and addressed.
- xix) Depth of ground-water table and its recharging , run off management, rain water harvesting and treatment system for pumped out quarry water to be submitted.

- xx) Details of noise pollution control measures to be specified
- xxi) Coloured maps depicting land use of the region showing sensitive / fragile features and detailed lay-out of the site clearly showing green-belt (existing & planned) should be furnished.
- xxii) Satellite imagery of the location of mine should be submitted with demarcation of other proposed/in operation mines in nearby area. Location is also to be shown in Tehsil map procured from revenue department. This will be used as baseline information to compare the impact of mining in the area in future.
- xxiii)** Details of air pollution control measures to be specified.
- xxiv) Details of safety measures to be adopted during blasting are to be specified
- xxv) Details of accessibility and nearby habitation may be specified.
- xxvi) Details of nearby operating mines with respect to type, capacity, and pollution load to be specified.
- xxvii) Clarification with respect to land use break up should be given as figure mentioned in approved mining plan is not matches with the figure given in the Form – I.

ITEM NO. 12

PROPOSAL OF SAGASAH I IRON ORE MINES OF M/S. NATIONAL ENTERPRISES AT – SAGASAH I, DIST – SUNDARGARH

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006. For this purpose, the proponent had submitted information in the prescribed format (Form-I) along with feasibility report. The proposal is for production of 32320 TPA of iron ore. The mine lease area is 44.144 ha. It was observed that the documents submitted by the proponent alongwith the application lacked requisite details. No details were available about the site. The document titled project report submitted in lieu of the pre-feasibility report was also unacceptable for want of requisite information/details. The presentation made and the documents submitted also lacked consistency. The proponent also unable to produce copy of mining lease before the SEAC. In view of the same, the SEAC recommended to reject the proposal in its present form.

ITEM NO. 13**PROPOSAL OF ADAGHAT IRON ORE MINES OVER AN AREA 15.07 HA, VILLAGE – ADAGHAT, DIST – SUNDARGARH**

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006. For this purpose, the proponent had submitted information in the prescribed format (Form-I) along with feasibility report.

The proposal is for production of 36000 TPA of iron ore. The mine lease area is 15.074 ha. which is non forest land. It was observed that the documents submitted by the proponent alongwith the application lacked requisite details. No details were available about the site. The document titled project report submitted in lieu of the pre-feasibility report was also unacceptable for want of requisite information/details. The presentation made and the documents submitted also lacked consistency. The proponent also was unable to produce copy of mining lease before the SEAC. In view of the same, the SEAC recommended to reject the proposal in its present form.

ITEM NO. 14**M/S. FALCON REAL ESTATE PVT. LTD., AT-PATIA, BHUBANESWAR, ORISSA**

The proponent made a presentation on the proposal for consideration of the SEAC. The proposed development is a Building Project having multiple floors. The project consists of S + 7 Storied. Total Plot Area: 1.858 acre (7522,51 sq.m). Ground Floor Coverage is 3760.00 sqm i.e. 49.98%. Total built up area is 21411 sq.m. Total plot area is 8096.65 sq.m. Total open space is 3762.51 sqm. Exclusive green area is 1704.51 sqm.. Service area is 149.00 sqm. Maximum height of the Building is 24m. FAR is 2.0. Total no of Units is 112, Convenient shops is 121.0 sqm. Community center is 352.00 sqm. Swimming Pool is 106.00 sqm. The building is completely residential in nature. Bhubaneswar Development Authority has approved the building plan vide letter No.1972/bpd t.17.02.09. The total water requirement is 87 KLD. Source of water is Ground water. Around 76.5 KLD of waste water will be generated which will be treated in Sewage Treatment Plant (STP) with 2 KLD treatment loss. Part of treated water will be re-used for dual flushing 25.2 KLD, green belt and landscaping 20 KLD, 12 KLD for dust suppression, car washing 6 KLD and remaining

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SECRETARY, SEAC

11.3 KLD treated effluent will be discharged to near by drain. Total solid waste generation will be 224 Kg per day. The power requirement is 1600 KW. Total cost of the project is Rs.19.65 crores.

Based on the informations, documents and clarifications provided, the SEAC recommends for grant of environmental clearance in favour of the Project for a period of five years subject to the following stipulated conditions.

I. GENERAL.

- i). The applicant (Project proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, Water Pollution, Noise Pollution and Land Pollution including solid waste management as mentioned by him in Form-1, Form-1A, and Environment Management Plan (EMP) in compliance with the prescribed statutory norms and standards.
- ii) The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.
- iii) For post environmental clearance monitoring, the applicant will submit half-yearly compliance report in respect of the stipulated terms and conditions of this Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa, on 1st June and 1st December of each calendar year.
- iv) The applicant (project proponent) will adopt the prescribed norms, and standards provided in the National Building Code of India, 2005 specially relating to :
 - a) Fire protection and life safety of occupants of the buildings.
 - b) Safety of personnels during construction, operation and demolition of buildings.
 - c) Lighting and natural ventilation of building.
 - d) Safety from electrical fire, shock and lightening of the buildings.
 - e) Air-conditions, heating and mechanical ventilation of the buildings
 - f) Acoustics and noise control of the buildings
 - g) Installations of lifts and escalators in the buildings
 - h) Water supply, drainage and sanitation including solid waste management of the buildings.
 - i) Landscaping of surrounding areas of the buildings

II. CONSTRUCTION PHASE.

- (i) Provision shall be made for the housing of construction labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (ii) A First Aid Room will be provided in the project both during construction and operation of the project.

- (iii) All the topsoil excavated during construction activities should be stored for use in horticulture/landscape development within the project site.
- (iv) Disposal of muck during construction phase should not create any adverse effect on the neighbouring communities and will be disposed off taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
- (v) Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.
- (vi) Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the dump sites for such material must be secured so that they should not leach into the ground water.
- (vii) Any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approvals of the Orissa Pollution Control Board.
- (viii) The diesel generator sets to be used during construction phase should be low sulphur diesel type and should conform to Environment (Protection) Rules 1986 prescribed for air and noise emission standards.
- (ix) The diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from Chief Controller of Explosives shall be taken.
- (x) Vehicles used for bringing construction materials to the site should be in good condition and should have a pollution check certificate and conform to applicable air and noise emission standards and should be operated only during non-peak hours.
- (xi) Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/ OPCB.
- (xii) Fly ash should be used as building material in the construction as per the provisions of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003. The above condition is applicable as the project site is located within the 100 Km of Thermal Power Stations.
- (xiii) Ready mixed concrete must be used in building construction.
- (xiv) Storm water control and its re-use should be as per CGWB and BIS standards for various applications.

- (xv) Water demand during construction should be optimized by adopting best practices without compromising quality.
- (xvi) Permission to draw ground water shall be obtained from the competent Authority prior to construction/operation of the project.
- (xvii) Separation of grey and black water should be done by the use of dual plumbing line. Grey and black water should be treated separately.
- (xviii) Fixtures for showers, toilet flushing and drinking water should be of low flow type either by use of aerators or pressure reducing devices or sensor based control.
- (xix) Use of glass may be reduced upto 40% of total outer wall area to reduce the energy consumption and load on air-conditioning. If necessary, high quality double glass with special reflective coating may be used in the windows.
- (xx) Roof should meet the prescribed requirement as per Energy Conservation Building Code by using appropriate thermal insulation material.
- (xxi) Opaque wall should meet prescriptive requirement as per Energy Conservation Building Code.
- (xxii) The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of fire fighting equipments, etc. as per National Building Code of India, 2005 including protection measures from lightening etc.
- (xxiii) Regular supervision of the above and other measures for monitoring should be in place although the construction phase to avoid disturbance to the surroundings.

III. OPERATION PHASE.

- i) The installation of the Sewage Treatment Plant (STP) should be certified by a competent agency and a report in this regard should be submitted to the SEIAA, Orissa before the project is commissioned for operation. Treated effluent from STP shall be recycled/reused to the maximum extent possible. Treatment of 100% grey water by decentralized treatment should be done. Discharge of unused treated effluent shall conform to the norms and standards of the Orissa State Pollution Control Board. Necessary measures should be taken to mitigate the odour problem from STP.
- ii) The solid waste generated should be properly collected and segregated. Wet garbage should be composted and dry / inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material.
- iii) Diesel power generating sets proposed as source of back up power for lifts, elevators and common area illumination during operation phase should be of enclosed type and conform to Environment Protection

(EP) rules 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Low sulphur diesel should be used. The location of the DG sets may be decided in consultation with Orissa State Pollution Control Board.

- iv) Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.
- v) Plantation of trees shall be done as per approved layout plan.
- vi) Weep holes in the compound walls shall be provided to ensure natural drainage of rain water in the catchment area during the monsoon period.
- vii) Rain water harvesting for roof run-off and surface run-off, as plan submitted should be implemented. Before recharging the surface run off, pre-treatment must be done to remove suspended matter, oil and grease. The bore-well for rainwater recharging should be kept at least 5 mts. above the highest ground water table.
- viii) The ground water level and its quality should be monitored regularly in consultation with Central Ground Water Authority.
- ix) Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized and no public space should be utilized for this purpose.
- x) A Report on the energy conservation measures confirming to energy conservation norms finalized by Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology, R & U Factors etc and submit to the SEIAA, Orissa in three months time.
- xi) Energy conservation measures like installation of CFLs/TFLs for lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination. Use of solar panels may be done to the maximum extent possible.
- xii) The building blocks should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.
- xiii) The proponent shall furnish detailed information on domestic E-waste which includes obsolete personal computers (PC) etc. and dispose the e-waste as per CPCB, Delhi / MoEF, Govt. of India guidelines. A detail proposal to this effect shall be submitted to the authority.

- xiv) The funds earmarked for the environment protection measures shall be judiciously utilized. Under no circumstances this funds shall be diverted for other purposes. Year-wise expenditure for this fund should be reported to the SEIAA, Orissa.
- xv) The above mentioned stipulated conditions shall be complied in time bound manner. Failure to comply with any of the conditions mentioned above may result in withdrawal of this environmental clearance and attract action under the provisions of Environment Protection (EP) Act, 1986.

ITEM NO. 15

CONSTRUCTION OF IT SEZ WITH INTEGRATED TOWNSHIP 'INFOVALLEY' AT JATNI TEHSIL, KHURDA DISTRICT, NEAR BHUBANESWAR, ORISSA BY M/S.ORISSA INDUSTRIAL INFRASTRUCTURE DEVELOPMENT CORPORATION.

The proponent made a presentation on the proposal for consideration of the SEAC. The project involves construction of IT SEZ with Integrated Township on a plot area 20.23 ha. (500 acres). The total built-up area is 20,81,029 sq.m. The project will provide a direct employment to 80,000 people and indirect employment to 3,20,000 people. The total water requirement is 17.42 MLD (fresh water requirement is 10.12 MLD). The capacity of STP proposed is 9.00 MLD. Treated waste water to be used for flushing of toilets - 2.86 MLD, horticulture- 4.45 MLD, AC cooling- 4.41 MLD. Total solid waste generation will be 57 MT/day. The power requirement is 196.08 MW. The total parking spaces proposed are for 25918 cars. Total cost of the project is Rs. 2336.88 Crores.

The project falls under category 'B1' under item 8(b)- Township and Area Development projects and requires an environmental Impact Assessment study, the total built up area of the project is more than 1,500,000 sq.m. The proposal was considered in the 68th EAC meeting of MoEF, Govt. of India held during 19th-20th November 2008. The EAC finalized the TOR for EIA Study. The terms of reference issued to the project proponent by MoEF Govt. of India vide letter No.F.No.21-372/2008-IA.III, December 2008.

Based on the informations, documents and clarifications provided, the SEAC recommends the project for grant of environmental clearance in favour of *the project* for a period of five years subject to the following stipulated conditions.

I. GENERAL.

- i). The applicant (Project proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, Water Pollution, Noise Pollution and Land Pollution including solid waste management as mentioned by him in Form-1, Form-1A, and Environment Management Plan (EMP) in compliance with the prescribed statutory norms and standards.
- ii) The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.
- iii). For post environmental clearance monitoring, the applicant will submit half-yearly compliance report in respect of the stipulated terms and conditions of this Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa on 1st June and 1st December of each calendar year.
- iv), The applicant (project proponent) will adopt the prescribed norms, and standards provided in the National Building Code of India, 2005 specially relating to :
 - a). Fire protection and life safety of occupants of the buildings.
 - b). Safety of personnel during construction, operation and demolition of buildings.
 - c) Lighting and natural ventilation of building.
 - d). Safety from electrical fire, shock and lightening of the buildings.
 - e). Air-conditions, heating and mechanical ventilation of the buildings.
 - f) Acoustics and noise control of the buildings
 - g). Installations of lifts and escalators in the buildings
 - h). Water supply, drainage and sanitation including solid waste management of the buildings.
 - i). Landscaping of surrounding areas of the buildings

II. CONSTRUCTION PHASE.

- i) Provision shall be made for the housing of construction labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- ii) A First Aid Room will be provided in the project both during construction and operation of the project.
- iii) All the topsoil excavated during construction activities should be stored for use in horticulture/landscape development within the project site.

- iv) Disposal of muck during construction phase should not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
- v) Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.
- vi) Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the dump sites for such material must be secured so that they should not leach into the ground water.
- vii) Any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approvals of the Orissa Pollution Control Board.
- viii) The diesel generator sets to be used during construction phase should be low sulphur diesel type and should conform to Environment (Protection) Rules 1986 prescribed for air and noise emission standards.
- ix) The diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from Chief Controller of Explosives shall be taken.
- x) Vehicles used for bringing construction materials to the site should be in good condition and should have a pollution check certificate and conform to applicable air and noise emission standards and should be operated only during non-peak hours.
- xi) Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/ OPCB.
- xii) Fly ash should be used as building material in the construction as per the provisions of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003. The above condition is applicable as the project site is located within the 100 Km of Thermal Power Stations.
- xiii) Ready mixed concrete must be used in building construction.
- xiv) Storm water control and its re-use should be as per CGWB and BIS standards for various applications.
- xv) Water demand during construction should be optimised by adopting best practices without compromising quality.
- xvi) Permission to draw ground water shall be obtained from the competent Authority prior to construction/operation of the project.

- xvii) Separation of grey and black water should be done by the use of dual plumbing line. Grey and black water should be treated separately.
- xviii) Fixtures for showers, toilet flushing and drinking water should be of low flow type either by use of aerators or pressure reducing devices or sensor based control.
- xix) Use of glass may be reduced upto 40% of total outer wall area to reduce the energy consumption and load on air-conditioning. If necessary, high quality double glass with special reflective coating may be used in the Windows.
- xx) Roof should meet the prescribed requirement as per Energy Conservation Building Code by using appropriate thermal insulation material.
- xxi) Opaque wall should meet prescriptive requirement as per Energy Conservation Building Code.
- xxii) The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of fire fighting equipments, etc. as per National Building Code of India, 2005 including protection measures from lightening etc.
- xxiii) Regular supervision of the above and other measures for monitoring should be in place althrough the construction phase to avoid disturbance to the surroundings.

III. OPERATION PHASE.

- i) The installation of the Sewage Treatment Plant (STP) should be certified by a competent agency and a report in this regard should be submitted to the SEIAA, Orissa before the project is commissioned for operation. Treated effluent from STP shall be recycled/reused to the maximum extent possible. Treatment of 100% grey water by decentralized treatment should be done. Discharge of unused treated effluent shall conform to the norms and standards of the Orissa State Pollution Control Board. Necessary measures should be taken to mitigate the odour problem from STP.
- ii) The solid waste generated should be properly collected and segregated. Wet garbage should be composted and dry / inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material.
- iii) Diesel power generating sets proposed as source of back up power for lifts, elevators and common area illumination during operation phase should be of enclosed type and conform to Environment Protection (EP) rules 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Low sulphur diesel should be used. The location of the DG sets may be decided in consultation with Orissa State Pollution Control Board.
- iv) Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at

the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.

- v) **The project proponent clarified that part of existing project area is jungle Kisam land which will be developed as green belt. If the status of land is forest land, then Forest Clearance from MoEF, Govt. of India is required. Development of green belt in the proposed jungle kisam land with full cost detail etc. to be submitted to the MoEF, Govt. of India for seeking forest clearance under Forest Conservation Act, 1980.**
- vi) Weep holes in the compound walls shall be provided to ensure natural drainage of rain water in the catchment area during the monsoon period.
- vii) Rain water harvesting for roof run- off and surface run- off, as plan submitted should be implemented. Before recharging the surface run off, pre-treatment must be done to remove suspended matter, oil and grease. The bore-well for rainwater recharging should be kept at least 5 mts. above the highest ground water table.
- viii) The ground water level and its quality should be monitored regularly in consultation with Central Ground Water Authority.
- ix) Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized and no public space should be utilized for this purpose.
- ix) A Report on the energy conservation measures confirming to energy conservation norms finalized by Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology, R & U Factors etc and submit to the SEIAA, Orissa in three months time.
- x) Energy conservation measures like installation of CFLs/TFLs for lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination. Use of solar panels may be done to the maximum extent possible.
- xi) The building blocks should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.
- xii) The proponent shall furnish detailed information on domestic E-waste which includes obsolete personal computers (PC) etc. and dispose the e-waste as per CPCB, Delhi / MoEF, Govt. of India guidelines. A detailed proposal to this effect shall be submitted to the authority.
- xiii) The funds earmarked for the environment protection measures shall be judiciously utilized. Under no circumstances this funds shall be diverted for other purposes. Yearwise expenditure for this fund should be reported to the SEIAA, Orissa.
- xiv) The above mentioned stipulated conditions shall be complied in time bound manner. Failure to comply with any of the conditions mentioned

above may result in withdrawal of this environmental clearance and attract action under the provisions of Environment Protection (EP) Act, 1986.

ITEM NO. 16

PROPOSAL OF LAIDAPADA IRON & MN. MINE OF M/S. UTKAL MINING & SALES (P) LTD, AT – LAIDAPADA, DIST – KEONJHAR

The project proponent did not attend the meeting. The committee decided to defer the decision.

ITEM NO. 17

EXPANSION PROPOSAL OF CEMENT GRINDING MILL OF KAPILASH CEMENT WORKS OF M/S. OCL INDIA LTD, AT – BISWALI, TANGI, DIST – CUTTACK

The proposal was considered by the SEAC to determine Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of EIA notification, 2006. For this purpose the proponent had submitted information in the prescribed format (Form-I) along with feasibility report.

M/s OCL India Ltd., have proposed to enhance the Cement Grinding capacity of Kapilas Cement Works from existing 0.9 MTPA to 1.35 MTPA by utilizing additional capacity in existing Grinding Unit at village Biswali, P.O: Barunia, Dist- Cuttack, Orissa. The project proponent plans to manufacture 100% port land slag cement (PSC) to suit the market needs for which the clinker will be supplied by the OCL India Ltd., Rajgangpur Plant, Dist: Sundargarh, Orissa. All the standalone cement grinding units are listed at Sl. No. 3(b) under category 'B' project as per EIA notification, 2006 and appraised at the SEAC. The project proponent informed the followings.

- The increase in production shall be achieved taking the flexibility of slag addition in cement quality specified in BIS specification in to advantages & by corresponding changes in fineness of cement mix

products without compromising the quality of the respective grade of cement produced.

- No new machinery or equipment will be installed.
- No additional construction activity except small colony in plant area have been proposed to carry out as because the existing facility is adequate to meet the extra load by upgrading the ancillary facilities.
- No additional power is required, specific power consumption will be reduced.
- No additional staking, packaging, product storage facilities are required.
- No additional land will be required for the proposed expansion
- Raw material requirement will be

Sl. No.	Raw material	Existing (MTPA)	Proposed (MTPA)
1.	Clinker	0.360	0.7425
2.	Gypsum	0.027	0.0405
3.	Slag	0.513	0.5670
4	Coal (TPD)	80	90

- Total water requirement after expansion will be 600 m³/day and source of water is ground water. Permission has been obtained from CGWA.

The proponent during presentation requested to consider this capacity enhancement under Category-B2 project and exempt from EIA/EMP and grant Environmental Clearance for the enhanced capacity i.e. 1.35 MTPA by only changing the component mix and fineness reduction. The SEAC decided to take decision on the proposal in the next meeting after receiving the following from the proponent.

1. Pollution control measures adopted in the existing unit and its performance.
2. Adequacy of existing pollution control devices to bear the additional pollution load proposed expansion.
3. Detailed pollution load calculation to justify there is no increase in pollution load due to the proposed expansion.
4. Detailed water balance, effluent treatment system for existing as well as proposed expansion.

5. Copy of permission for drawl of water from the concerned authority.
6. Detailed CSR activities carried out for the existing plant and proposed CSR activities.
7. Action taken for rain water harvesting and ground water recharge.
8. Since there is increase in working hours, consumption of energy will also increase. The industry has to justify for no additional power requirement.
9. The industry will use 600 m³ of ground water per day although, surface water is available nearby. They have to submit a detail proposal for use of surface water.
10. Percentage of phospo gypsum and mineral gypsum used in cement making.
11. Cost estimation for social and peripheral development.
12. Detailed employment provided in the existing plant (Local and outsider).
13. Present status of green belt development in the plant. Fund earmarked for proposed green belt development. .

ITEM NO. 18

PROPOSAL OF M/S. ESSAR POWER LTD FOR 60 (2X30) MW THERMAL POWER PLANT AT – DUBUNA, JODA TEHSIL, DIST – KEONJHAR

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006. For this purpose, the proponent had submitted information in the prescribed format (Form-I) along-with feasibility report.

The proposal is for 2x30 MW coal based captive thermal power project at Puranadihi and Dubuna in the district of Keonjhar, Orissa. It is for captive use of Essar Steel Orissa Ltd beneficiation plant adjacent to thermal power plant. Land requirement is 53 Acres. Water requirement is 255.8 m³/hr which will be sourced from Baitarani River. The proponent will use Indian Coal and the requirement will be 1400 MT/day. Total cost of project is Rs. 253 crores.

Based on the information furnished and presentation made, the SEAC prescribed the following TORs for undertaking detailed EIA study.

1. Land earmarked for bottom ash and fly ash disposal may be specified. Measures for controlling environmental damages, if any, due to storage of dry bottom ash or fly ash before disposal of 100% use in ancillary industries may be spelt out.
2. Project site details should be depicted in the topo sheet showing plant site, ash pond area etc.
3. The study area should cover an area of 10 km radius around the proposed site.
4. Land use of the study area as well as the project area shall be given.
5. Location of National Parks, Sanctuaries, Biosphere Reserves, wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), and existence of rare and endangered flora and fauna if any, within 10 km of the project site should be clearly indicated. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above under the Wildlife (Protection) Act, 1972 and copy may be furnished.
- 5(a) .A detailed biological study of the study area (core zone & buffer zone-10 km radius of the mining lease area) shall be carried out. Details of flora & fauna, duly authenticated separately for core & buffer zone should be furnished based on field survey indicating the schedule of the fauna present; in case of any schedule-I fauna found in the study area, necessary plan for their conservation should be prepared in consultation with the State Forest & Wildlife Department & details furnished. Necessary cost details for executing the conservation measures should be furnished & incorporated as part of the project cost.
6. Land requirement for the project to be optimized. Item wise break up of land requirement and its availability to be furnished as per the norms prescribed by Central Electricity Authority (CEA).
7. Topography of the area should be given clearly indicating whether the site requires any filling. If so, details of filling, quantity of fill material required, its source, transportation etc. should be given.
8. Impact of the project on drainage of the area and the surroundings to be studied.
9. Information regarding surface hydrology and water regime and its impact may be furnished.
10. One season (non-';/monsoon) site-specific meteorological data shall be provided.
11. One complete season AAQ data (except monsoon) to be given along with the dates of monitoring. The parameters to be covered shall include SPM, RSPM, SO₂ NO_x and Ozone (ground level). The location of the monitoring stations should be so decided so as to take into consideration the pre-dominant downwind direction, population zone and sensitive receptors including reserved forests. There should be at least one monitoring station in the upwind direction.

12. Impact of the project on the AAQ of the area, details of the model used and the input data used for modeling should also be provided. The air quality contours may be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The wind roses should also be shown on this map. Height of chimney shall be taken into account while drawing wind rose diagrams. The wind speed and wind direction at the chimney height determines dispersal pattern of the emissions released at that height. Also details of flue gas treatment to reduce/remove trace polluting gases like SO₂, NO_x etc. along with reducing temperature should also be indicated.
13. Details of fugitive emission from Coal Handling Plant (CHP), ash handling and ash disposal area and its control system may be specified..
14. Fuel analysis to be provided (sulphur, ash content and mercury) with grade of coal. Details of auxiliary fuel, if any including its quantity, quality, storage etc should also be given.
15. Adequate space shall be earmarked for installation of Flue Gas Desulphurisation (FGD) system in future if required. This should also include for management and disposal of solid waste to be generated from FGD system. Details of flue gas management system may also be provided.
16. Quantity of fuel required, its source and transportation may be provided. A confirmed fuel linkage should also be provided.
17. Source of water and its availability and commitment regarding availability of requisite quantity of water from the competent authority may be provided.
18. Details of rainwater harvesting and how it will be used in the plant shall be provided.
19. The feasibility of zero discharge may be examined. In case of any proposed discharge, its quantity, quality and point of discharge, users downstream etc. should be provided.
20. Water conservation measures proposed in different units of operation of the project should also be given. Quantity of water requirement for the project should be optimized.
21. Detail run off management of coal stockyard and ash disposal area to be specified.
22. Details of water balance taking into account reuse and re-circulation of effluents may be provided.
23. Details of green belt i.e. land with not less than 1600 trees per ha giving details of species, width of plantation, planning schedule etc. should be furnished
24. Detailed plan of ash utilization / management may be furnished.
25. Details of evacuation of ash may be provided.
26. Details regarding ash pond impermeability and whether it would be lined, if so details of the lining etc. may be provided.

27. Occupational health impact and remedial measures thereof of the project may be studied
28. Details of flora and fauna duly authenticated should be provided. In case of any scheduled fauna, conservation plan should be provided.
29. Public hearing points likely to be raised and commitment of the project proponent on the same may be included. An action plan to address the issues raised during public hearing and the necessary allocation of funds for the same should be provided.
30. Socio economic impact due to project activity to be assessed and based on the study, developmental activity proposed to be undertaken by the project proponent to be specified. As far as possible quantitative dimension to be given. Study should include Corporate Social Responsibility (CSR) and it should be carried out as the entry point activity as trust building measures
31. Impact of the project on local infrastructure of the area such as road network and whether any additional infrastructure would need to be constructed and the agency responsible for the same with time frame should be provided.
32. EMP to mitigate the adverse impacts due to the project along with item wise cost of its implementation may be provided.
33. Risk assessment should be carried out. It should take into account the maximum inventory of storage at site at any point in time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be provided. Onsite and off site Disaster Management plan to be prepared and included in the EMP.

(DR. GAGAN BIHARI NITYANANDA CHAINY)
CHAIRMAN, SEAC

(DR. SWOYAM PRAKASH ROUT)
MEMBER, SEAC

(DR. HAREKRISHNA NAYAK)
MEMBER, SEAC

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MEMBER, SEAC

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MEMBER, SEAC

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SECRETARY, SEAC

CHAIRMAN, SEAC

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