

# AARTI STEELS LIMITED

An ISO 9001, 14001 & OHSAS 18001  
Certified Company

Office : Plot No. 18/1B, Sector-10, CDA  
Cuttack – 753 014, (Orissa) India  
Phone : +91-671-3061000, 2309285,  
Fax : +91-671-3061150, 2309407  
E-mail : [cuttack@aartisteelsltd.com](mailto:cuttack@aartisteelsltd.com) ; [aartisteel@sify.com](mailto:aartisteel@sify.com)

Ref: ASL/MOEF(Exp.)/Env./

Date: 14.11.2015

To

**The Chief Conservator of Forests (C),**  
Government of India, Ministry of Environment & Forests,  
Eastern Regional Office, A/3, Chandrasekharpur,  
Bhubaneswar – 751023 (Odisha), Fax: 0674-2302432.

**Sub: Compliance Status of Specific & General conditions of Environmental Clearance letter no. J-11011 / 287 / 2008-IA II(I) dated 13.05.2009 issued by Ministry of Environment & Forests, Govt. of India to the expansion Project by M/s Aarti Steels Limited at village Ghantikhal in dist. Cuttack in Odisha-reg.**

Ref: Environmental Clearance letter no. J-11011 / 287 / 2008-IA II (I) dated 13.05.2009.

Dear Sir,

With reference to above, please find enclosed the six monthly compliance status for the period from 01.04.2016 to 30.09.2016 as indicated below:

1. Progress on the construction of the project-as annexure-A.
2. Analysis data on air (ambient, stack & fugitive) and noise quality-as annexure-B
3. Point wise status of compliance of Environmental Clearance-as annexure-C
4. Fly Ash Mgmt. report as per MOEF prescribed format-as annexure-D
5. The Environmental Statement in Form-V- as annexure-E
6. Environmental Department organization structure- annexure-F

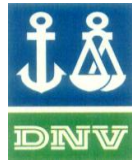
Thanks & Regards,

For Aarti Steels Ltd,

**(LTP Narayan)**  
**President**

Encl: As above

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## ANNEXURE A

### PHASE WISE DEVELOPMENT OF PROJECT AND PROGRESS ON THE CONSTRUCTION OF THE PROJECT & MILE STONE

Product Portfolio (Proposed capacities)	Item	Capacity	Status	Expected Target
	Power Plant	50 MW	Commissioned in March, 2010	
	Coal Washery	1.0 MTPA	Yet to be started	By Dec 2018
	Sponge Iron Kiln	2x500 TPD	Yet to be started	By Dec 2018
	Power Plant	60 MW	Yet to be started	By Dec 2018
	Sinter Plant	343000 TPY	Yet to be started	By Dec2018
	Coke oven	236000 TPY	Yet to be started	By Dec 2018
	Ferro-Alloys Plant	25000 TPA	Commissioned in October,2016.	

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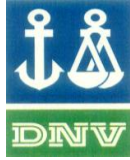
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## ANNEXURE-C

### Compliance Status of Specific & General conditions of Environmental Clearance letter no. J-11011 / 287 / 2008-IA II(I) dated 13.05.2009 issued by Ministry of Environment & Forests, Govt.of India.

Sl.No.	Specific conditions	Compliance
A (i)	Efforts shall be made to reduce RSPM levels in the ambient air and a time bound action plan shall be submitted.	<p>We are taking the following steps to reduce the RSPM level in the ambient air:</p> <p>Fugitive emission generation points like various stock house, material transfer and junction points, product hoppers have been provided with appropriate suction device connected to bag filter.</p> <p>Dust suppression system for raw material handling area has already been provided. All transfer points of belt conveyor have been provided with spray nozzles for suppressing the dust. All conveyors, transfer points etc has been provided with enclosures. Water spraying arrangement has been provided in coal yard, truck tippler. We have already installed arm sprinklers for Coal Stock Yard .Further; we have drawn high pressure water pipe line in the coal yard to moisten the coal before loading in the dumpers for feeding to coal washery. This has substantially reduced the dust generation during further processing.</p> <p>In addition to above,</p> <p>-Regular water Spraying &amp; cleaning is being practiced on the internal roads. All major internal roads of approx.5.6 KM length have already been blacktopped.</p>



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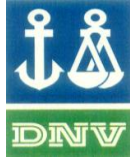
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		<p>-We have installed arm sprinklers for dust suppression at Coal Yard, Iron Yard &amp; Railway Siding area for dust suppression.</p> <p>-We have provided rotating sprinkler system in DRI unit, Iron Ore Crushing unit and on the road from Iron Ore Crushing unit to DRI cooler discharge unit for dust suppression.</p> <p>-Water Spraying arrangement using 14 KL tanker is being made during non-monsoon period for Dust Suppression along the internal roads, Coal Stack yard and other areas for effective dust control. Also manual water spraying arrangement using water hose has been made for dust control.</p> <p>-We have already installed rotating sprinklers in FAP unit.</p> <p>-Adequate dust handling system at the hoppers of CFBC (ESP), AFBC ESP, WHRB ESPs &amp; DRI Bag Filters has already been installed &amp; operating satisfactorily. Collected dust gets disposed off in ash pond in slurry form along with Ash of power plant.</p> <p>-Bottom ash is being disposed off in ash pond in slurry form along with ash of power plant.</p> <p>- The solid waste generated is being suitably disposed off within the premises without creating any dust nuisance or environmental contamination.</p> <p>-Material transportation through trucks, tippers etc is being carried out in covered condition to avoid spillages and dust emission.</p> <p>-Unloading of materials by trucks is being carried</p>
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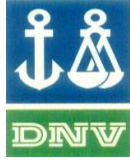
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<p>On-line ambient air quality monitoring and continuous stack monitoring facilities for all the stacks.</p>	<p>out with proper care avoiding dropping of the materials from height. The material is being moistened by sprinkling water while loading/unloading.</p> <p>-ESP has already been installed for CFBC power plant.</p> <p>-Adequate Fume Extraction System &amp; Dust Suppression System for 1x18 MVA Ferro Alloys Plant has been installed.</p> <p>However, in order to improve the AAQ in and around our plant premises, further, we have installed additional two nos of Bag Filters(Cap:85000m3/hr &amp; 33,200 m3/hr) for Capacity enhancement of existing bag filters of 2x500 TPD DRI Kiln as per recommendation of M/s IIT, Kharagpur to control fugitive emission. Also,we have already completed the installation &amp; commissioning work of Dust Extraction system(DES) connected to Bag Filter to control fugitive emission from lime handling plant and the system is working satisfactorily.</p> <p>We have already installed 4 nos online continuous ambient air quality monitoring stations (MOEF approved methodology &amp; USEPA approved equipment) for measuring the parameters such as PM10, PM2.5,SO<sub>2</sub>,NO<sub>x</sub>,CO and online continuous stack emission monitoring system for all ESP &amp; GCP stacks including 50 MW CFBC power plant for measuring the parameters such as PM,SO<sub>2</sub>,NO<sub>x</sub>. Further,we have installed RT-DAS for AAQ and Stacks &amp; uploaded real time data to the OSPCB &amp; CPCB server through M/s Sunjray Infosystem Private Limited,Bhubaneswar &amp; M/s Environment SA respectively.</p>
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	<p>Sufficient air pollution control devices shall be provided to keep the emission levels below 100 mg/Nm<sup>3</sup> .</p> <p>Interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit.</p>	<p>Continuous online continuous stack emission monitoring system for 1x18 MVA FAP GCP is being installed.After installation the data shall be transmitted to OSPCB &amp; CPCB server.</p> <p>At no time the emission level goes beyond the prescribed standards as the installed pollution control devices i.e. ESPs &amp; Bag Filters are designed to ensure emission level below the prescribed standards i.e.100mg/Nm<sup>3</sup>.</p> <p>In the event of failure of any pollution control system adopted by the unit, the pollution control system is being rectified to achieve the desired efficiency first and then only we are restarting the respective unit. However, we are exploring the possibility of provision of Interlocking facilities so that process can be automatically stopped in case emission level exceeds the prescribed limit.</p>
(ii)	<p>Hot gases from DRI kiln shall pass through Dust Settling Chamber (DSC) to remove coarse solids and After Burning Chamber (ABC) to burn CO completely and used in Waste Heat Recovery Boiler (WHRB). The gas then shall be cleaned in ESP before leaving out into the atmosphere through ID fan and Stack. Electrostatic precipitator (ESP) shall be provided to DRI plant, Captive Power plant and Sinter plant to control air emissions within 100 mg/Nm<sup>3</sup>. Bag filters shall be provided to submerged arc furnace. Dry fog system will be provided to coal washery. Dust extraction system with bag filters shall be provided to the Coke oven. Bag filters shall be provided to submerged arc furnace. Gas cleaning plant having dust catcher and bag filter shall be provided to Blast furnace (BF). Bag house shall be</p>	<p>Shall be Complied along with the installation of DRI Kilns,Sinter Plant,Coal Washery,Blast Furnace,Coke Oven as per expansion programme.</p> <p>However for 50 MW power plant (already commissioned in March,2010),Flue gas from CFBC (with inlet dust concentration of around 100 gm/Nm<sup>3</sup>) passes through economizer followed by air pre heater &amp; ESP(6 fields) before getting emitted through a RCC stack of height 101 m(quantity of emission-approx.4,00,000 Nm<sup>3</sup>/hr).The ESP has been designed to achieve emission standard of 35 mg/Nm<sup>3</sup> with 6 fields in operation and 50 mg/Nm<sup>3</sup> with 5 fields in operation.</p> <p>Bag Filter for 1x18 MVA FAP has been installed to control air emissions within 100 mg/Nm<sup>3</sup>.</p>

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	provided to BF-Dry gas cleaning system.	
(iii)	All the waste gases from the DRI plant, blast furnace, coke oven, and F-grade coal shall be utilized to generate power. Gaseous fuels from the blast furnace shall also be used in BF runners, stoves and sinter etc. No coke oven gases shall be discharged into the atmosphere but used in in the WHRB to generate power.	Shall be Complied along with the installation of DRI Kiln,Sinter Plant,Coal Washery,Coke Oven,Blast Furnace as per expansion programme.
(iv)	In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided .Dry fog dust suppression system and water sprinkling at coal washery, raw material handling areas and dust collectors at material transfer points, conveyor belts, coal crushers and screening areas and finish product handling etc shall be provided.Further, specific measures like water sprinkling around the coal stockpiles, loading/ unloading points and asphaltting or concreting of the internal roads/ working zones shall be done to control fugitive emissions.	<p>Fugitive emission generation points like various stock house, material transfer and junction points, product hoppers have been provided with appropriate suction device connected to bag filter.</p> <p>Dust suppression system for raw material handling area has already been provided. All transfer points of belt conveyor have been provided with spray nozzles for suppressing the dust. All conveyors, transfer points etc has been provided with enclosures. Water spraying arrangement has been provided in coal yard, truck tippler. We have already installed arm sprinklers for Coal Stock Yard .Further; we have drawn high pressure water pipe line in the coal yard to moisten the coal before loading in the dumpers for feeding to coal washery. This has substantially reduced the dust generation during further processing.</p> <p>In addition to above,</p> <p>-Regular water Spraying &amp; cleaning is being practiced on the internal roads. All major internal roads of approx.5.6 KM length have already been blacktopped.</p> <p>-We have installed arm sprinklers for dust suppression at Coal Yard, Iron Yard &amp; Railway Siding area for dust suppression.</p>

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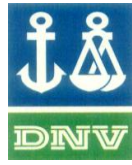
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		<p>-We have provided rotating sprinkler system in DRI unit, Iron Ore Crushing unit and on the road from Iron Ore Crushing unit to DRI cooler discharge unit for dust suppression.</p> <p>-Water Spraying arrangement using 14 KL tanker is being made during non-monsoon period for Dust Suppression along the internal roads, Coal Stack yard and other areas for effective dust control. Also manual water spraying arrangement using water hose has been made for dust control.</p> <p>-We have already installed rotating sprinklers in FAP unit.</p> <p>-Adequate dust handling system at the hoppers of CFBC (ESP), AFBC ESP, WHRB ESPs &amp; DRI Bag Filters has already been installed &amp; operating satisfactorily. Collected dust gets disposed off in ash pond in slurry form along with Ash of power plant.</p> <p>-Bottom ash is being disposed off in ash pond in slurry form along with ash of power plant.</p> <p>- The solid waste generated is being suitably disposed off within the premises without creating any dust nuisance or environmental contamination.</p> <p>-Material transportation through trucks, tippers etc is being carried out in covered condition to avoid spillages and dust emission.</p> <p>-Unloading of materials by trucks is being carried out with proper care avoiding dropping of the materials from height. The material is being moistened by sprinkling water while loading/unloading.</p>
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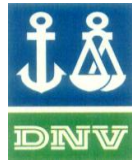
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	Dust extraction system with bag filters along with dust suppression system shall be provided to proportioning unit, mixing unit, sinter crushing & screening unit to keep the dust in work zone environment within the permissible limit.	<p>However, in order to improve the AAQ in and around our plant premises, further, we have installed additional two nos of Bag Filters(Cap:85000m<sup>3</sup>/hr &amp; 33,200 m<sup>3</sup>/hr) for Capacity enhancement of existing bag filters of 2x500 TPD DRI Kiln as per recommendation of M/s IIT, Kharagpur to control fugitive emission. Also,we have already completed the installation &amp; commissioning work of Dust Extraction system(DES) connected to Bag Filter to control fugitive emission from lime handling plant and the system is working satisfactorily.</p> <p>Shall be Complied along with the installation of Sinter Plant as per expansion programme.</p>
(v)	Data on ambient air quality, stack emissions, and fugitive emissions shall be uploaded on the Company's website and also regularly submitted on-line to the Ministry's Regional Office at Bhubaneswar, Orissa Pollution Control Board (OPCB) and Central Pollution Control Board (CPCB) as well as hard copy once in six months. Data on SPM, SO <sub>2</sub> and NO <sub>x</sub> shall also be displayed prominently outside the premises at the appropriate place for the information of general public.	Data on ambient air quality monitored for the parameters PM <sub>2.5</sub> , RSPM, SO <sub>2</sub> , NO <sub>x</sub> , CO,Data on Stack air quality monitored for the parameters P.M.,SO <sub>2</sub> & NO <sub>x</sub> & data on fugitive emission monitored for the parameter SPM for running plants is being submitted through e-mail & hard copy and uploaded on the Company's website once in six months . Data on ambient air quality as well as stack emission is being displayed prominently at main gate & reception for the information of general public.
(vi)	Gaseous emission levels including secondary fugitive emissions from blast furnace and sinter plant shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines / Code of Practice issued by the CPCB shall be followed. The emission standards issued	Shall be Complied along with the installation of Blast Furnace, Sinter Plant & Sponge Iron Plant as per expansion programme.

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	by the Ministry in May, 2008 for the sponge plants shall be followed.	
(vii)	Vehicular pollution due to transportation of raw material and finished product shall be controlled. Proper arrangements shall also be made to control dust emissions during loading and unloading of the raw material and finished product.	Material transportation through trucks, tippers etc is being carried out in covered condition to avoid spillages and dust emission. Unloading of materials by trucks is being carried out with proper care avoiding dropping of the materials from height. The material is being moistened by sprinkling water while loading/unloading. Regular water spraying and cleaning is being practiced on the internal roads and major internal roads have been black topped to control fugitive emission.
(viii)	All the standards prescribed for the coke oven plants shall be followed as per the latest guidelines. Proper and full utilization of coke oven gases in power plant using waste heat recovery steam generators shall be ensured and no flue gases shall be discharged into the air.	Shall be Complied along with the installation of Coke Oven as per expansion programme.
(ix)	As proposed, dry coke quenching method shall be adopted in the proposed non-recovery type of the coke oven.	Shall be Complied along with the installation of Coke Oven as per expansion programme.
(x)	Total water requirement from River Mahanadi for the proposed expansion shall not exceed 25,512 m <sup>3</sup> /day as per the permission accorded by the State Water Resource Department, Orissa vide letter no. WII-DM-Misc.-5/2003/13857 dated 26 <sup>th</sup> December, 2003. Prior permission for the drawl of extra water, if any, shall be obtained from the concerned department. No ground water shall be used.  BF-GCP and coal washery water shall be treated in thickener and used in the pig casting machine.	Being Complied.  Shall be Complied along with the installation of Blast Furnace & Coal Washery as per expansion programme.

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	<p>Acidic and Alkaline effluent from DM water plant shall be neutralized and reused in the plant through ash pond. Oil traps and skimming devices shall be provided for removal of oil and grease. All the waste water from process shall be treated and recycled and reused for ash slurry making, sprinkling, green belt development. No waste water shall be discharged outside the premises and 'Zero' effluent discharge shall be ensured.</p> <p>Domestic effluent shall be treated in Septic tank followed by soak pit and used for green belt development.</p>	<p>We are not discharging any process effluent. The blow down water from cooling tower, Boiler, coolers &amp; RO plant after treatment in neutralization pit is collected in wastewater sump and the same is reused for ash slurry making. Overflow decanted water from ash slurry is collected in wastewater sump and recycled. Thus the company achieves zero discharge by using treated effluent in the process. (Water Balance Diagram &amp; Flow sheet of effluent is enclosed for reference as <b>annexure-C-I</b>).</p> <p>Domestic effluent of Factory premises and colony are discharged to individual soak pits via septic tanks.</p>
(xi)	The water consumption shall not exceed 16 m <sup>3</sup> /Ton of Steel as per prescribed standard.	Being Complied.
(xii)	Ground water monitoring around the solid waste disposal site / secured landfill (SLF) shall be carried out regularly and report submitted to the Ministry's Regional Office at Bhubaneswar , CPCB and OPCB.	Ground water monitoring around the solid waste disposal site is being carried out once in a six month <b>(report enclosed vide annexure-C-II)</b> .
(xiii)	<p>All the char from DRI plant, coal washery rejects and middlings shall be utilized in the CFBC boiler of power plant. No char shall be disposed off anywhere else. CFBC power plant shall be installed before installation of Sponge Iron Plant so that utilization of char in the CFBC boiler is ensured.</p> <p>All the blast furnace (BF) slag shall be granulated and provided to cement manufacturers for further utilization. SMS slag shall also be properly utilized in environment friendly manner. DRI fines, coke breeze, sinter dust, GCP dust, SMS dust, scale, iron ore fines shall be used in sinter plant.</p>	<p>Coal washery rejects and middlings are being utilized in the boiler of power plant. DRI plant (under this project expansion programme) is yet to be installed. However, Char generated from existing DRI plant is being utilized in 50 MW CFBC power plant for power generation to the extent possible.</p> <p>Shall be Complied along with the installation of Blast Furnace, Sinter Plant, Sponge Iron Plant.,Coke oven as per expansion programme.</p>

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Certified Company

Office : Plot No. 18/1B, Sector-10, CDA

Cuttack – 753 014, (Orissa) India

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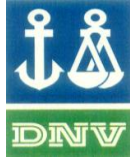
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	<p>All the other solid wastes including broken refractory mass shall be properly disposed off in environment friendly manner.</p> <p>Resin used in demineralization plant shall be disposed off properly in impervious lined pit as per CPCB guidelines. Oily waste shall be provided to authorized recyclers / reprocessors.</p>	<p>All the other solid wastes including broken refractory mass are being properly disposed off in environment friendly manner.</p> <p>Resin used in demineralization plant is being disposed off properly in impervious lined pit with cover as per CPCB guidelines. Oily waste is being sold to authorized recyclers / reprocessors only.</p>
(xiv)	Slag produced in Ferro Manganese (Fe-Mn) production shall be used in manufacture Silico Manganese (Si-Mn).	Agreed.
(xv)	The slag from the ferro alloy plant after metal recovery shall be used for road making only after passing through Toxic Chemical Leachability Potential (TCLP) test. Otherwise, hazardous substances shall be recovered from the slag and output waste and be disposed in secured landfill as per CPCB guidelines. Metal recovery plant shall be installed to recover metal.	The slag from the ferro alloy plant after metal recovery is being used for road making only after passing through Toxic Chemical Leachability Potential (TCLP) test. A copy of the said plan is enclosed vide <b>annexure-G</b> . Metal recovery plant has already been installed to recover metal.
(xvi)	Proper handling, storage, utilization and disposal of all the solid waste shall be ensured and regular report regarding toxic metal content in the waste material and its composition, end use of solid / hazardous waste shall be submitted to the Ministry's Regional Office at Bhubaneswar, OPCB and CPCB.	Action plan for solid waste management has already been submitted to the Ministry keeping in view proper solid waste management. A copy of the said plan is enclosed vide <b>annexure-C-III</b> . So far, we have only installed 50 MW CFBC Power Plant out of the total proposed facilities under MOEF expansion of Integrated Steel Plant. Accordingly, we are furnishing herewith the power generation & fly ash mgmt. details vide Annexure-C-III(A) & C-III(B) respectively. Hazardous waste management is enclosed vide <b>annexure-C-IV</b> .
(xvii)	A time bound action plan shall be submitted to reduce solid waste, its proper utilization and disposal.	We have taken the following measures to reduce solid waste generation, its proper utilization and disposal:

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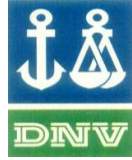
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		<p>Rejects of coal washery are being used as fuel in CFBC boiler for generation of steam. Char generated is being utilized in power plant to the extent possible. Used oil is being sold to regd. recyclers/re-refiners only. Constructed used oil storage shed with concrete platform for storage of used oil (a hazardous waste). Constructed bio-medical waste disposal pit for disposal of our First Aid Centre bio-medical waste. We have provided canteen waste disposal pit. Waste after recovery is used as manure for green belt development. We are recycling rejected dedusting bags in to carry bags. We are using Boiler Bottom ash of as soil conditioner for plantation development.</p>
(xviii)	<p>Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 1999 as amendment in 2003. Ash from captive power plant shall be provided to fly ash brick / cement manufacturers.</p>	<p>We have achieved 120% utilization in the FY 2015-16.</p> <p><b><u>Action plan for improvement in Fly Ash Utilisation</u></b></p> <p>-Action plan for Fly Ash management has already been prepared giving emphasis on reuse and minimization rather than disposal as follows:</p> <p>*Wet fly ash of Ash Pond along with morum is being utilized for ash dyke rising. There will be provision for increasing the capacity of ash pond by raising its height further. Efforts are on to find the option for utilizing the Boiler Ash in Cement Making/Brick Making/Road/Embankment/Dam Making/Soil Conditioner for crop and plantation development/Concrete Work/Land Fill/Back filling of low-lying land and discarded mines etc. so that disposal of ash Pond is reduced to maximum possible extent.</p> <p>*In order to boost the utilization further, we have taken the following steps:</p>

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As on date 31.03.2016 M/s Aarti Steels Ltd. Ghantikhal is having a stock of 10,00,000 m<sup>3</sup> of pond ash (mixture of fly ash and bottom ash) at the plant site. For the next nine (9) months, i.e. from 1st April, 2016 to 31st December 2016 ash generation quantum during the period will be 1,00,000m<sup>3</sup>. So, the total ash available at plant site for utilization will be 11,00,000m<sup>3</sup>.

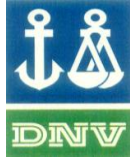
In order to meet the stipulated guidelines for 100% utilization, we have identified abandoned stone quarries of area 28.82 acre to accommodate our ash in our locality (Machhyapur village) and obtained permission from the Collector, Cuttack & Tahasildar, Athgarh for filling those quarries with fly ash. We have obtained NOC from OSPCB on 25.07.2013 for filling of the above said abandoned quarries of area 28.82 Acres with fly ash & bottom ash near Machhyapur under Radhakishorepur G.P. in the district Cuttack. The ash filling work has already been started since end February, 2015.

Also, we have identified abandoned stone quarries of area 9 Acres in our locality (Radhadamodarpur village) and obtained permission from the Collector, Cuttack & Tahasildar, Athgarh for filling those quarries with fly ash. We have already obtained NOC from OSPCB on 11.11.2013 for filling ash in those abandoned mine near Radhadamodarpur Village. Total area of the void stone quarry pit at Village Machhyapur and Radhakishorepur is about 37.82 acres and available volume of the stone quarry pit for ash filling is 11,40,000 m<sup>3</sup>.

Further, in line with OSPCB direction dated 05.10.2013, we have already applied to the Collector, Cuttack on 23.10.2015 for granting permission for filling 1,00,000 m<sup>3</sup> volume of abandoned laterite quarry pits with fly ash in our proximity identified by Revenue Dept. which is under process.

Therefore, total volume of abandoned stone quarry

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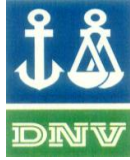
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		<p>It will be 33,40,000 m<sup>3</sup> (i.e. 11,40,000m<sup>3</sup>+22,00,000m<sup>3</sup>). After filling the stock ash of the quantity 11,00,000 m<sup>3</sup> which is available at plant site remaining volume available at stone quarry pit for ash filling will be 22,40,000 m<sup>3</sup>. From January - 2017 onwards ash generation quantity will be 2,15,000 m<sup>3</sup> per year. Considering the quantum of ash generation potential, it will take another (22,40,000/2,15,000 = ) 10 years to turn the quarry pits exhaustive.</p> <p>Also, we have discussed with a cement manufacturer M/s J.K. Mahalaxmi Cement, Ghantikhal, Cuttack) that is setting up a cement plant (work in progress) and likely to be commissioned by 1<sup>st</sup> January 2018 adjacent to our plant for the manufacture of Pozzolana cement by utilizing our fly ash. The party has already agreed to use our fly ash in their plant. In implementation of this project, 100% fly ash shall be utilized in bulk from 2018 onward till the revival of cement plant. To supply fly ash to the cement plant and to other outside party M/s ASL has taken action to make a fly ash storage silo which is under progress and expected to be complete by 31<sup>st</sup> May 2017. For this free access road to silo will be provided for better transportation of the fly ash utilization.</p> <p>Apart from this, we also avail alternative mechanism in order to make continual endeavor of being 100% ash utilization as follows:</p> <ol style="list-style-type: none"><li>1) We have placed order on C-FARM, New Delhi for providing solution for 100% utilization of fly ash. Report has been received in Sept-2011. Suggestions shall be implemented as per approval of the management in a phased manner by 2014. However, as per their advice we have supplied 78 T of fly ash to farmers of different villages in Cuttack, Jagatsingpur &amp; Kendrapada district for utilizing the fly ash on their land on trial basis for</li></ol>
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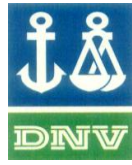
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		<p>rice cultivation. As reported by CRRI, the test result are satisfactory (yield is around 20% more). However, as per their advice we have again supplied 20 Ton of fly ash to farmers of some other villages in Khurda, Kendrapara, Jajpur &amp; Cuttack District for utilizing the fly ash on their land on trial basis for rice cultivation in Aug-2012 for further study. The above scheme has been successfully implemented with increase in the rice yield by around 20% avg. as informed by CRRI &amp; farmers (who have used our fly ash) in the Krushak Mela organized by CRRI, Cuttack in Dec-2012. CRRI informed that their recommendation in this regard shall be submitted to Ministry of Agriculture, Govt. of India for giving necessary instruction to State Govt. Agriculture dept. for framing the guidelines/rules in this regard. Hence, our fly ash is expected to be utilized in other districts on large scale basis by 2017.</p> <ol style="list-style-type: none"> <li>2) Utilizing fly ash as soil conditioner for plantation development inside our plant premises.</li> <li>3) The civil construction is being carried out with 100% fly ash bricks only.</li> <li>4) We are also exploring the possibility to tie up with the party who can lift bulk of fly ash.</li> <li>5) Power Plant is operating with Indonesian Coal, which constitute 8 % of ash content and also possess high GCV (Gross Calorific Value). It will lead to substantial reduction of ash generation.</li> </ol>
(xix)	As proposed, green belt shall be developed in 94 ha (33%), out of total 283.4 ha in and around the plant as per the CPCB guidelines	M/s Aarti Steels Limited has undertaken a laudable venture to turn this rocky surface to a beautiful landscape full of trees and greenery. Up till now over 60000 nos of trees have been planted in planned way

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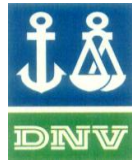
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	in consultation with DFO.	to cover the sprawling factory premises for ecological balance covering an area of 25 Ha @ 2400 nos of trees per Ha .Out of 293.49 Ha of our total plant area approx. 73 Ha with 185000 trees is already covered under thick plantation since beginning of the project. We are also taking the maintenance of these existing plantations. Hence out of 293.49 Ha, total 98 Ha (33.39%) is already covered under plantation and only 195.49 Ha area has been made available for existing plant and upcoming project. However, plantation in vacant areas has already been undertaken. The non covered areas are being planted in phased manner.As per OSPCB direction we have planted 1250 nos of saplings in near by villages in 2014 and distributed around 45000 nos sapling in periphery villages in 2015.ASL distributed 25000 nos of saplings in periphery villages in July 2016.
(xx)	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the steel sector shall be implemented.	The CREP recommendation compliance/action plan report is enclosed vide <b>annexure-C-VI</b> .
(xxi)	The company shall provide housing for construction labour 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.	Being Complied.
	<b>General Conditions</b>	
<b>B (i)</b>	The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Control Board (OPCB) and the state Government.	Accepted.
(ii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Accepted.

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(iii)	<p>The gaseous emissions from various process units shall conform to the load / mass based standards modified by the Ministry on 19<sup>th</sup> May,1993 and standards prescribed from time to time by the Ministry. Orissa Pollution Control Board (OPCB) may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location.</p> <p>At no time, the emission level shall go beyond the prescribed standards.</p>	<p>Shall be Complied along with the installation of DRI Kilns,Sinter Plant,Coal Washery,Blast Furnace,Coke Oven &amp; Ferro Alloys Plant as per expansion programme.But the gaseous emissions(Particulate Matter) from stack attached to CFBC boiler is being monitored once in a month(reports enclosed).We would like to inform that as per the O.S.P.C.B. consent condition we are maintaining the particulate emission from the above mentioned process unit below 100 mg/Nm<sup>3</sup>.</p> <p>However,Load based standard notified by the ministry for integrated steel plant shall be applicable in our case, after installation of Coke Oven plant.</p> <p>At no time the emission level goes beyond the prescribed standards as the installed pollution control devices i.e. ESPs &amp; Bag Filters are designed to ensure emission level below the prescribed standards i.e.100mg/Nm<sup>3</sup>.</p>
(iv)	<p>At least four ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO<sub>2</sub> and NO<sub>x</sub> are anticipated in consultation with the OPCB.</p> <p>Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and OPCB, CPCB once in six months.</p>	<p>Four continuous online ambient air quality monitoring stations have already been established since March,2015 in downward direction as well as where maximum ground level concentration of PM2.5, RSPM, SO<sub>2</sub>,NO<sub>x</sub> &amp; CO are anticipated in consultation with the Odisha State Pollution Control Board.</p> <p>Data on ambient air quality monitored for the parameters PM2.5, RSPM, SO<sub>2</sub>, NO<sub>x</sub>, CO in the above stations,Data on Stack air quality monitored for the parameters P.M.,SO<sub>2</sub>,NO<sub>x</sub>, &amp; data on fugitive emission monitored for the parameter SPM for running plants is being submitted once in six months.Monitoring reports are enclosed.</p>

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(v)	Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December,1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.	Since the Industrial waste water is not being discharged outside and is being utilized inside our plant for slurry making and re-cycled, hence the standards prescribed under GSR 422(E) dated 19 <sup>th</sup> May,1993 and 31 <sup>st</sup> December,1993 or as amended from time to time is not applicable to our case.
(vi)	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	The overall noise levels in and around the plant area is being kept well within the prescribed standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures as applicable etc. on all sources of noise generation. The overall noise levels in and around the plant area is being monitored once in a month.Noise monitoring reports are enclosed for reference which shows that the noise level is well within the standards of 85dB (A) for noise generating sources also it can be noted from the reports that the ambient noise levels also conform to the standards prescribed in EPA Rules, 1989 viz.75dB (A)(day time) and 70 dB(A) (night time).
(vii)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Occupational Health Surveillance of the workers is being done once in a year and records are maintained as per the Factories Act.
(viii)	The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	<u>-Implementation of Surface run off water harvesting including reuse at railway siding.</u> In consultation with IIT,Kharagpur,we have already constructed surface run-off rain water harvesting pit of size (83mx73mx5m) for surface run off & rain water storage.Installation of Pumps,Pipelines etc for transporting the stored water to raw water reservoir for recycling has been completed in July-2012 and the system is operating satisfactorily.Now, even in case of heavy rain we found that no black water is going out of plant boundary.
(ix)	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP	All the environment protection measures and safeguards recommended in the EIA/EMP report are being complied for the installed facilities under

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# AARTI STEELS LIMITED

An ISO 9001, 14001 & OHSAS 18001  
Certified Company

Office : Plot No. 18/1B, Sector-10, CDA

Cuttack – 753 014, (Orissa) India

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	<p>report.</p> <p>Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc. Suggestions made during the public hearing shall be implemented.</p>	<p>expansion programme.</p> <p>Social infrastructure and peripheral development work report done so far has been attached vide <b>annexureC-VII</b>.</p> <p>Further regarding health care- regular health check up of local people of Dhurusia, Mahakalabasta, Ghantikhal &amp; Kakhadi villages are being carried out by our company Doctor &amp; Pharmacists using mobile health van.</p>
(x)	<p>As proposed, Rs 45.00 Crores and Rs 5.00 Crores shall be earmarked towards total capital cost and recurring cost/annum for environmental pollution control measures and judiciously utilized to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purpose.</p>	<p>Please refer <b>annexure-C-VIII</b> for financial provision of 45 Crore for the implementation of the EMP. We abide that the funds so provided shall not be diverted for any other purpose.</p>
(xi)	<p>The Regional Office of this Ministry at Bhubaneswar / CPCB / OPCB shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.</p>	<p>The stipulated conditions are being monitored by the Regional Office of the Ministry at Bhubaneswar/State Pollution Control Board. A six monthly compliance report and the monitored data along with statistical interpretation are being submitted to them regularly.</p>
(xii)	<p>The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the OPCB and may also be seen at Website of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in</p>	<p>Already Complied (copy of the advertisement is enclosed as <b>annexure-C-IX</b> for reference).</p>

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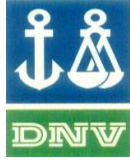
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	the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office at Bhubaneswar.	
(xiii)	Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Date of Financial Closure: March, 2009. Date of Final approval of the project: May 2009. Date of commencing the land development work: March 2009.
(5)	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Accepted.
(6)	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner will implement these conditions.	Accepted
(7)	Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within in a period of 30 days as prescribed under section 11 of the National Environment Appellate Act, 1997.	Accepted.
(8)	The above conditions will be enforced, inter-alia under the provisions of the water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management and Handling) Rules, 2003 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules.	Accepted

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## **PLAN FOR COMPLYING THE RECOMMENDATIONS OF CREP AT M/s AARTI STEELS LIMITED,Ghantikhal,Cuttack.**

The point wise action plan as applicable to us as on date for complying the recommendations of CREP are as indicated below:

### **4.Solid Waste/Hazardous Waste Management**

#### **Solid Waste Management**

We have taken the following measures to reduce solid waste generation, its proper utilization and disposal:

Rejects of coal washery are being used as fuel in CFBC boiler for generation of steam. Char generated is being utilized in power plant to the extent possible. Constructed bio-medical waste disposal pit for disposal of our First Aid Centre bio-medical waste. We have provided canteen waste disposal pit. Waste after recovery is used as manure for green belt development. We are recycling rejected dedusting bags in to carry bags. We have utilized 120% fly ash in the year 2015-16 for abandoned laterite stone quarry filling. After installation of 1x18 MVA FAP the slag generated after metal recovery shall be utilized for construction/land filling purpose.

#### **HAZARDOUS WASTE MANAGEMENT**

SI No.	Waste Description	Waste Class/Stream	Schedule	Disposal
01	Used Oil	5.1	1	Being sold to regd. re-refiner.
02	Waste containing oil	5.2	1	Being disposed off in impervious pit with cover.
03	Spent resin from DM plant	34.2	1	Being disposed off in impervious lined pit with cover.



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04.	Flue Gas Cleaning Residue.	13.1	1	Shall be used in Briquette manufacturing.
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## 5. Water Conservation/Water Pollution

-Full utilization of Blow down and waste water for slurry making thereby optimizing the water requirement. We are not discharging any process effluent. The blow down water from cooling tower, Boiler, coolers & RO plant after treatment in neutralization pit is collected in wastewater sump and the same is reused for slurry making. Overflow decanted water from ash slurry is collected in wastewater sump and recycled. Thus the company achieves zero discharge by using treated effluent in the process. For 1x18 MVA FAP project recycling arrangements for the cooling waste water of SAF has been installed.

### - Implementation of rain Water Harvesting

In consultation with IIT,Kharagpur,we have already constructed surface run-off rain water harvesting pit of size (83mx73mx5m) for rain water storage.Installation of Pumps,Pipelines etc for transporting the stored water to raw water reservoir for recycling has been completed in July-2012 and the system is operating satisfactorily.Now, even in case of heavy rain we found that no black water is going out of plant boundary.

## 6. Online monitoring facility :

-We have already installed 4 nos online continuous ambient air quality monitoring stations (MOEF approved methodology & USEPA approved equipment) for measuring the parameters such as PM10, PM2.5,SO<sub>2</sub>,NO<sub>x</sub>,CO and online continuous stack emission monitoring system for all ESP & GCP stacks including 50 MW CFBC power plant for measuring the parameters such as PM,SO<sub>2</sub>,NO<sub>x</sub>. Further,we have installed RT-DAS for AAQ and Stacks & uploaded real time data to the OSPCB & CPCB server through M/s Sunjray Infosystem Private Limited,Bhubaneswar & M/s Environment SA respectively.

-Continuous online continuous stack emission monitoring system for 1x18 MVA FAP GCP is being installed.After installation the data shall be transmitted to OSPCB & CPCB server.

## 7. . Efficient Operation of Pollution Control Equipments

To operate the existing pollution control equipment efficiently and to keep proper record of run hours, failure time and efficiency with immediate effect. Compliance report in this regard to be submitted to CPCB/SPCB every three months-**Being Complied.**

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## 9. Adoption of Clean technologies

-M/s Aarti Steels Limited, Ghantikhal has obtained ISO 9001: 2008 & ISO 14001:2004 & OHSAS18001:2007 certification since October, 2009.

-In consultation with IIT, Kharagpur, we have already constructed surface run-off water harvesting pit of size (83mx73mx5m) for rain water storage. Installation of Pumps, Pipelines etc for transporting the stored water to raw water reservoir for recycling has been completed in July-2012 and the system is operating satisfactorily. Now, even in case of heavy rain we found that no black water is going out of plant boundary.

## -Action Plan for 100% utilization of Stock ash & generated ash

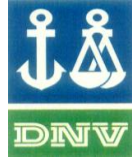
As on date 31.03.2016 M/s Aarti Steels Ltd. Ghantikhal is having a stock of 10,00,000 m<sup>3</sup> of pond ash (mixture of fly ash and bottom ash) at the plant site. For the next nine (9) months, i.e. from 1st April, 2016 to 31st December 2016 ash generation quantum during the period will be 1,00,000m<sup>3</sup>. So, the total ash available at plant site for utilization will be 11,00,000m<sup>3</sup>.

In order to meet the stipulated guidelines for 100% utilization, we have identified abandoned stone quarries of area 28.82 acre to accommodate our ash in our locality (Machhyapur village) and obtained permission from the Collector, Cuttack & Tahasildar, Athgarh for filling those quarries with fly ash. We have obtained NOC from OSPCB on 25.07.2013 for filling of the above said abandoned quarries of area 28.82 Acres with fly ash & pond ash near Machhyapur under Radhakishorepur G.P. in the district Cuttack. The ash filling work has already been started since end February, 2015.

Also, we have identified abandoned stone quarries of area 9 Acres in our locality (Radhadamodarpur village) and obtained permission from the Collector, Cuttack & Tahasildar, Athgarh for filling those quarries with fly ash. We have already obtained NOC from OSPCB on 04.11.2013 for filling ash in those abandoned mine near Radhadamodarpur Village. Total area of the void stone quarry pit at Village Machhyapur and Radhakishorepur is about 37.82 acres and available volume of the stone quarry pit for ash filling is 11,40,000 m<sup>3</sup>.

Further, in line with OSPCB direction dated 23.05.2013, we have already applied to the Collector, Cuttack on 23.10.2015 for granting permission for filling 22,00,000 m<sup>3</sup> volume of abandoned laterite quarry pits with fly ash in our proximity identified by Revenue Dept. which is under process.





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Therefore, total volume of abandoned stone quarry will be 33,40,000 m<sup>3</sup> (i.e. 11,40,000m<sup>3</sup>+22,00,000m<sup>3</sup>). After filling the stock ash of the quantity 11,00,000 m<sup>3</sup> which is available at plant site remaining volume available at stone quarry pit for ash filling will be 22,40,000 m<sup>3</sup>. From January - 2017 onwards ash generation quantity will be 2,15,000 m<sup>3</sup> per year. Considering the quantum of ash generation potential, it will take another (22,40,000/2,15,000 = ) 10 years to turn the quarry pits exhaustive.

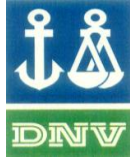
Also, we have discussed with a cement manufacture (M/s J.K. Mahalaxmi Cement, Ghantikhal, Cuttack) that is setting up a cement plant (work in progress) and likely to be commissioned by 1<sup>st</sup> January 2018 adjacent to our plant for manufacture of Pozzolana cement by utilizing our fly ash. The party has already agreed to use our fly ash in their plant. In implementation of this project, 100% fly ash shall be utilized in bulk from 2018 onward till the survival of cement plant. To supply fly ash to the cement plant and to other outside party M/s ASL has taken action to make a fly ash storage silo which is under progress and expected to be complete by 31<sup>st</sup> May 2017. For this free access road to silo will be provided for better transportation of the fly ash utilization.

Apart from this, we also avail alternative mechanism in order to make continual endeavor of being 100% ash usages such as:

1) We have placed order on C-FARM, New Delhi for providing solution for 100% utilization of fly ash. Report has been received in Sept-2011. Suggestions shall be implemented as per approval of the management in a phased manner by 2014. However, as per their advice we have supplied 78 T of fly ash to farmers of different villages in cuttack, Jagatsingpur & Kendrapada district for utilizing the fly ash on their land on trial basis for rice cultivation. As reported by CRRI, the test result are satisfactory (yield is around 20% more). However, as per their advice we have again supplied 20 Ton of fly ash to farmers of some other villages in Khurda, Kendrapara, Jajpur & Cuttack District for utilizing the fly ash on their land on trial basis for rice cultivation in Aug-2012 for further study. The above scheme has been successfully implemented with increase in the rice yield by around 20% avg. as informed by CRRI & farmers (who have used our fly ash) in the Krushak Mela organized by CRRI, Cuttack in Dec-2012. CRRI informed that their recommendation in this regard shall be submitted to Ministry of Agriculture, Govt. of India for giving necessary instruction to State Govt. Agriculture dept. for framing the guidelines/rules in this regard. Hence, our fly ash is expected to be utilized in other districts on large scale basis by 2017.

2) Utilizing fly ash as soil conditioner for plantation development inside our plant premises.

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3)The civil construction is being carried out with 100% fly ash bricks only.

4)We are also exploring the possibility to tie up with the party who can lift bulk of fly ash.

5)Power Plant is operating with Indonesian Coal, which constitute 8 % of ash content and also possess high GCV (Gross Calorific Value). It will lead to substantial reduction of ash generation.

### **-Reduction of green house gases by:**

\*Reduction in power Consumption wherever possible (ASL has installed capacitor bank towards conservation of energy, Use of CFL in place of ICL, wherever possible, Use of BIS marked & BEE 5 star rated electric appliance, Started utilization of translucent fiber sheets on roof tops of stores and other areas for use of day (sun) light energy, use of cooking gas in place of electric heater etc.).

\*Installed system of Heat recovery from Bed ash of CFBC boiler for use in water heating purpose.

\*We have made provision to operate boiler feed water pumps of PP-II with the reduce delivery pressure of keeping difference of boiler drum pressure of 10-12 Kg/cm<sup>2</sup> only and it is working.

\*Installed frequency drive in our 50 MW power plant conservation for all the motors above 200 KW.

\*Drum level control of CFBC boiler is shifted from control valve to variable frequency drive.

\*Provision of CFBC boiler pressure control with ID fan VFD.

\*Secondary Air fan speed of CFBC is linked with O<sub>2</sub> level thereby better control of O<sub>2</sub> level, better coal consumption and control of excess air and hence energy saving.

\*CFBC MCW speed is linked with vacuum.

\*Separate Energy meters have already been installed for ESPs & Ash Handling System & record is being maintained for proper monitoring and control of energy consumption.

\* Separate water flow meters have already been installed in various units of our plant & record is being maintained for proper monitoring and control of water consumption.



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\*Energy optimization technology like Energy audit conducted by Certified Energy Auditor's and some of the recommendation of are under implementation.

\*Ernst and Young has studied our plant to verify the present status of energy efficiency.They will also suggest a target or improvement in the energy conservation which will be achieved by adopting various energy conservation measures.

\*Replacement of High Pressure Mercury vapour lamps and high pressure sodium vapour lamps with Energy Efficient Metal Halide fittings and lamps.

\*Use of 2x36 W CFL light in place of High Pressure Sodium vapour lamp.

\*Introduction of timer switches for controlling day time loading completed in 50 MW power plant.

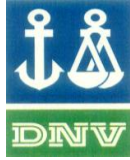
-Targets for resource conservation has been set.

### **-Env.Monitoring**

-We have already installed 4 nos online continuous ambient air quality monitoring stations (MOEF approved methodology & USEPA approved equipment) for measuring the parameters such as PM10, PM2.5,SO<sub>2</sub>,NO<sub>x</sub>,CO and online continuous stack emission monitoring system for all ESP & GCP stacks including 50 MW CFBC power plant for measuring the parameters such as PM,SO<sub>2</sub>,NO<sub>x</sub>. Further,we have installed RT-DAS for AAQ and Stacks & uploaded real time data to the OSPCB & CPCB server through M/s Sunjray Infosystem Private Limited,Bhubaneswar & M/s Environment SA respectively.Continuous online continuous stack emission monitoring system for 1x18 MVA FAP GCP is being installed.After installation the data shall be transmitted to OSPCB & CPCB server.For remaining parameters we are carrying out Env.monitoring & Analysis through M/s Visiontek Consultancy Services Private Limited,Bhubaneswar(MOEF authorized laboratory & OSPCB empanelled consultant).

### **-House Keeping**

Proper House Keeping with in the plant premises is being carried out. Continuous efforts are being made to improve it further. However, in order to give focused attention on improvement of House Keeping, we are observing **House Keeping Week** in all the units. Inspection for improvement in House Keeping is being ensured by our Safety, Health & Environment Sub-Committee. Dedicated team has been constituted in all the units to maintain proper house keeping.



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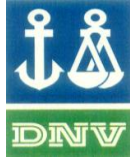


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