SUMMARY OF IMPLEMENTATION OF ACTION PLAN FOR ANGUL-TALCHER AREA (2013-14)

STATE POLLUTION CONTROL BOARD, ODISHA

BHUBANESWAR

January – 2015

SUMMARY OF IMPLEMENTATION OF ACTION PLAN FOR CPIC AREA OF ANGUL-TALCHER (2013-14)

Action Plan for abatement of pollution in Thermal Power Plant

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remarks
1.	All TPPs to install ESP/BF to meet the emission standard of 50 mg/Nm3 with one spare field.	NALCO, CPP	ESPs of unit no.7 & 8 are designed for 80 mg / Nm^3 and ESPs of unit no.9 & 10 are designed for 60 mg / Nm^3. Retrofitting of ESPs completed and commissioned for Unit#1, 2,3,4, 5 & 6 with emission target of below 100 mg/Nm^3.	Partially complied
		TTPS (NTPC), Talcher	The Stage-I (Unit#1, 2,3 &4) was started its operation during 1968-1972 and Stage-II (Unit#5 & 6) is approximately 30 year old. In Stage -I ESP retrofitting is not possible due to space constraints, since one phase of retrofitting has already been done. ESP augmentation work is in progress in stage-II, boilers to achieve standard of 100 mg/Nm3. Ammonia flue gas dosing done to keep the emission at 100 mg/Nm^3.	ESP augmentation for unit-V and Unit-VI are expected to be completed by Dec-14 and dec-15 respectively Direction has been issued to achieve emission norm of 100mg/Nm^3 under the Action Plan.
		Nav Bharat Ventures Ltd.	ESP of unit-I is designed for 90 mg/Nm^3. ESPs of Unit-II & III are designed for 50 mg/Nm3. To meet the emission standard in Unit-I ammonia dozing is done	Complied
		Bhusan Steel Ltd. CPP Bhusan Energy Ltd. (IPP)	4 number of ESPs attached to Bhushan Energy Limited have been designed for 50 mg/Nm3 with all the fields in operation. 3 gas fired boilers are designed for 50 mg/Nm^3 and three AFBC Boilers (33 MW + 20 MW + 12 MW) are designed for 100 mg/Nm^3	Complied
		GMR Kamalanga Energy Ltd.	3 numbers of ESPs provided which are designed for 50 mg/Nm^3 will all the fields in operation.	Complied
		Jindal India Thermal Power Ltd.,	2 nos. of ESPs provided which are designed for 50 mg/Nm^3 will all the fields in operation.	Complied
2.	All lean slurry disposal system	NALCO,CPP	Currently the ash is disposed in ash ponds in lean slurry mode for	The unit is installing a project to transport ash in

	to be converted to (High Concentration Slurry Disposal) HCSD/ Mine void filling		Unit#1-6. For Unit#7-10 ash is disposed in ash ponds in HCSD form.	lean slurry mode for disposal in abandoned mine pit of Bharatpur OCP. Disposal in the mine void through HCSD mode is not technically feasible due to long distance. The project is in advanced stages of completion.
		TTPS (NTPC), Talcher	Mine void filling through wet disposal (lean slurry) is currently in practice. HCSD is not possible in current pipe line due to technical aspects especially to distance factor.	Complied.
		Nav Bharat Ventures Ltd	Mine void filling (Balanda area) through dry ash disposal is currently in practice. Ash is transported in closed container.	Complied
		Bhusan Steel Ltd. CPP	Mine void filling (Jagannath OCP , quarry No. 4) through dry ash disposal is currently in practice. Ash is transported in closed container.	Complied
		Bhusan Energy Ltd. (IPP)		
		GMR Kamalanga Energy Ltd.	Fly ash is disposed in HCSD mode.	Complied
		Jindal India Thermal Power Ltd.,	Fly ash is disposed in HCSD mode.	Complied
3.	Online monitoring with real time display facility to be installed	NALCO,CPP	The industry has installed online PM monitoring system in the stack for all 10 units and online monitoring facility for SO_2 and NOx exists in 3 units.	Partially complied and BG obtained to complete the job by 31-03-2015 for rest of the parameters
		TTPS, Talcher	Online monitors installed in all the stacks (for PM).	BG obtained to complete the job by 31-03-2015 for rest of the parameters
		Nav Bharat Ventures Ltd	Online monitors installed in all the three stacks.	Complied
		Bhusan Steel Ltd. CPP	Online monitors installed in two stacks.	BG obtained to complete the job by 31-03-2015 for rest of the parameters
		Bhusan Energy Ltd. (IPP)	Online monitors for PM,SO & NOx installed at two stacks connected to four boilers.	
		GMR Kamalanga Energy Ltd.	Online monitors installed at 3 nos. of stacks.	Complied

		Jindal India Thermal Power Ltd.,	Online monitoring installed at 2 nos. of stack	Complied
4.	Create silo for a capacity of at least 2 to 3 days ash generation for its dry storage and subsequent utilization for cement and fly ash based products	NALCO,CPP	4 Silos of capacity 500 T each and 2 silos of capacity 1500 tons each installed.	Complied
		TTPS, Talcher	2 Silos of capacity 100 T each installed. Due to space constraint, further silos within the plant premises are not possible.	Complied
		Nav Bharat Ventures Ltd	2 Silos of capacity 350 T each and 2 silos of capacity750 tons each installed.	Complied
		Bhusan Steel Ltd. CPP	6 silos of capacity 200 T each and 2 silos of capacity 500 t each installed.	Complied
		Bhusan Energy Ltd. (IPP)		
		GMR Kamalanga Energy Ltd.	4 silos of capacity 1500 MT each installed.	
		Jindal India Thermal Power Ltd.,	4 silos of capacity 1500 MT each installed and 1 silo of capacity 300 MT installed.	
5.	Real time ambient air quality monitoring (SOx, NOx, CO, PM10, PM2.5)	NALCO,CPP	One real time AAQM system has already been installed And rest 3 Nos. will be installed by March 2015.	BG obtained to complete the job by 31-03-2015 for another 3 stations.
		TTPS, Talcher	3 nos. of real time ambient air monitoring station installed	Complied
		Nav Bharat Ventures Ltd	Real time ambient air monitoring station installed at one location	Complied. BG has been obtained for two more stations.
		Bhusan Steel Ltd. CPP	Real time ambient air monitoring station Installed at 5 locations.	BG obtained for installation of online monitoring system for whole plant by 31-03-2015
		Bhusan Energy Ltd. (IPP)		
		GMR Kamalanga Energy Ltd.	Real time ambient air monitoring station Installed at 4 locations.	Complied
		Jindal India Thermal Power Ltd.,	Real time ambient air monitoring station Installed at 4 locations.	Complied
6.	All the thermal power plants shall adopt zero discharge.	NALCO,CPP	Zero discharge adopted except periodic storm water discharge during monsoon	Complied
		TTPS,	Zero discharge adopted except	Complied

		Talcher	periodic storm water discharge during monsoon	
		Nav Bharat Ventures Ltd	Zero discharge adopted except periodic storm water discharge during monsoon	Complied
		Bhusan Steel Ltd. CPP	Unit has installed an ETP (i.e. ETP-I & II) for the effluent of thermal power plant area. The ETPs are commissioned and in operation.	-
		Bhusan Energy Ltd. (IPP)		
		GMR Kamalanga Energy Ltd.	Zero discharge adopted except periodic storm water discharge during monsoon	Complied
		Jindal India Thermal Power Ltd.,	Zero discharge adopted except periodic storm water discharge during monsoon	Complied

Action Plan for Abatement of Pollution in Coal Mines

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remarks
1.	A dedicated coal transport corridor to be constructed in Talcher coalfields to control SPM in ambient air and traffic congestion.	Mahanadi Coal Fields Ltd for its operating and future coal mines in Talcher area and Other Govt. agency as applicable	A dedicated coal transportation road network is existing from Hingula to Lingaraj connecting NH-200. This road is to be widened and strengthened. The corridor length is 41.5 KM with total project cost of Rs.251.35 Cr.	-
2.	Creation of reservoir for storage of mine drainage water and run off which can be used for industrial purpose for water conservation	Same as above	Water reservoirs have been created in all the opencast mines of MCL and water is being used for their own industrial activities.	Complied
3.	Use of surface miner for coal mining purpose. At	Same as above	About 75.53% of coal production has been done during FY 2013-14 through surface miner.	Complied

	least 60% coal in this area to be produced by surface miner technology for control of particulate matter in ambient air			
4.	Adoption of concurrent mine filling with dry ash from the thermal power plants to facilitate concurrent Ash disposal.	Same as above	Concurrent mine filling is not possible in active mine due to safety reasons .as reported. However, presently fly ash filling is going on in Balanda mine void by TTPS and NBVL. Bhushan Steel Limited have started ash filling at Jagannath void. MOU also been signed by Nalco for South Bharatpur void filling. NTPC, Kaniha and TTPS, Talcher have been allocated mine void at Jagannath OCP .	Under implementation.
5.	Making provision for supply of drinking water in the peripheral villages of coal mining area to solve the problem of water scarcity in nearby areas	Same as above	In Talcher coalfield area, peripheral villages (19 villages) will be covered under piped water supply scheme by MCL at a cost of Rs. 22.23 Cr. RWSS is the implementing agency. Presently, water is being supplied through tankers to all peripheral village of Talcher coal field. Kaniha and Talcher Block will also covered under the same piped water supply scheme by MCL with a total investment of Rs. 56.89 Cr. which will be done through RWSS.	Under implementation
6.	Enhancement of rake loading facility in coal mines for control of SPM in ambient air & traffic congestion.	Same as above	At present 70-80% of total coal is transported through Railway rake. Due to insufficient rake supply (35 rakes in a day against requirement of 56 rakes) remaining coal is transported through roadways.	Under implementation
7.	MCL to take up a comprehensive coal mine fire control plan for control of SO2 in	Same as above	Fire fighting System has been implemented at strategic locations to control fire hazard.	Complied

	least 60% coal in this area to be produced by surface miner technology for control of particulate matter in ambient air			
4.	Adoption of concurrent mine filling with dry ash from the thermal power plants to facilitate concurrent Ash disposal.	Same as above	Concurrent mine filling is not possible in active mine due to safety reasons .as reported. However, presently fly ash filling is going on in Balanda mine void by TTPS and NBVL. Bhushan Steel Limited have started ash filling at Jagannath void. MOU also been signed by Nalco for South Bharatpur void filling. NTPC, Kaniha and TTPS, Talcher have been allocated mine void at Jagannath OCP .	Under implementation.
5.	Making provision for supply of drinking water in the peripheral villages of coal mining area to solve the problem of water scarcity in nearby areas	Same as above	In Talcher coalfield area, peripheral villages (19 villages) will be covered under piped water supply scheme by MCL at a cost of Rs. 22.23 Cr. RWSS is the implementing agency. Presently, water is being supplied through tankers to all peripheral village of Talcher coal field. Kaniha and Talcher Block will also covered under the same piped water supply scheme by MCL with a total investment of Rs. 56.89 Cr. which will be done through RWSS.	Under implementation
6.	Enhancement of rake loading facility in coal mines for control of SPM in ambient air & traffic congestion.	Same as above	At present 70-80% of total coal is transported through Railway rake. Due to insufficient rake supply (35 rakes in a day against requirement of 56 rakes) remaining coal is transported through roadways.	Under implementation
7.	MCL to take up a comprehensive coal mine fire control plan for control of SO2 in	Same as above	Fire fighting System has been implemented at strategic locations to control fire hazard.	Complied

	ambient atmosphere and heat in the area			
8.	Back filling of the mine voids and restoration of the mined out area. An action plan to be prepared for control of land degradation in the area.	Same as above	(i) As per the guidelines issued by Ministry of coal , mine closure plans have been prepared and approved by MCL Board and submitted to MoC for final approval. (ii) Backfilling of decoaled area using intemal burden is currently in practice in all mines. (iii) MCL has assigned mine voids to 5 nos. power plant for filling up the mine voids(Balanda OCP & Jagannath OCP) with fly ash. 1. M/s NTPC 2. M/s NALCO 3. M/s Bhushan Steel Ltd. 4. M/s Navbharat Ventures 5. M/s TTPS (NTPC)	On-going activities

Action Plan for Abatement of Pollution in Iron & Steel Sector

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remarks
1	All DRI plants install ESPs, in the kiln, bag filter in dust generating points and pneumatic dust handling system for control of air pollution in the area	Bhusan Steel Ltd.	Installed/ Targeted Air pollution control equipment installed	Complied
		BRG Iron and Steel Ltd.	Installed/ Targeted Air pollution control equipment installed	Complied
2	All steel plants and sponge iron plants to develop collection and treatment facility for mineral char	Bhusan Steel Ltd.	The unit has installed two ETPs ie ETP-I near Talabahal side (for power plant & SMS area) and ETP-II near nursery side (for DRI plant, RMHS and coal washery area). Overflow of these ETP goes to 3 ponds from which the effluent is discharged to the Kisinda nallah after settling.	Complied

.	and coal pile runoff during monsoon for control of water pollution	BRG Iron and Steel Ltd.	Earthen settling pond has been constructed for runoff from solid waste dump site. Only domestic effluent is discharged to Kisinda nallah.	Complied
3	Installation of online stack monitoring system with real time display system for monitoring and subsequent control of particulate matter	Bhusan Steel Ltd.	Online stack monitoring facility for measurement of PM installed in 36 stacks.	BG obtained to complete installation for online monitoring system in 3 more stacks. by 31-03-2015.
		BRG Iron and Steel Ltd.	Partially complied. Online PM monitoring system in stack in DRI stack.	BG obtained to complete installation of 2 more online stack monitors by 31-03-2015
		Navabharat Ventures Ltd. (Ferro Alloy)	It may not be technically feasible to install online stack monitoring system in Ferro Alloy Plant..	-
4	Real time ambient air quality monitoring (SOx, NOx, CO, PM10, PM2.5) evaluation of air quality data	Bhusan Steel Ltd.	Installed at five CAAQMS station.	BG obtained to complete installation for whole plant by 31-03-2015, **Already mentioned in power section.**
		BRG Iron and Steel Ltd.	Not installed.	BG obtained to complete 4 nos. of AAQMs by 31-03-2015.
		Navabharat Ventures Ltd. (Ferro Alloy)	One CAAQMS installed	BG obtained to complete installation of rest of the stacks by 31-03-2015
5	Use of SMS slag and ferro alloys slag for haul road construction in the mine area for utilization of metallurgical solid waste.	Navabharat Ventures Ltd. (Ferro Alloy)	Currently the slag is used in their own road making.	-
		Mangilal Rungta (P) Ltd (Ferro Alloy)	Currently the slag is used in their own road making.	-
		Hind Mettaliks Ltd. (Ferro Alloys) (closed)	Currently the slag is used in their own road making.	-
		Bhusan Steel Ltd.	Currently the slag is used in their own road making.	Complied
		BRG Steel Ltd.	Currently the slag is used in their own road making.	Complied

Action Plan for Abatement of Pollution in Aluminium Plants

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remarks
1.	1st and 2nd pot line of NALCO to be upgraded to meet the emission norm of 0.3 kg of fluoride per ton of Aluminium by revamping the fume treatment plant for control of fluoride in ambient air	NALCO	The revamping / up-gradation of Fume treatment plant was proposed keeping in the view of proposed high ampearage (220KA) operation of pots instead of normal 180KA.	Not correct proposal from the unit has been received to operate the pots at 220 KA instead of 180 KA operated at present. However, the F^- emission always found to be within 0.3 kg/T of Aluminium produced which is the prescribed standard of CTO.
2.	Online stack emission monitoring system with display system shall be installed for evaluation of load of fluoride in ambient air.	NALCO	Online fluoride monitoring system installed in all stacks.	Complied B.G. has been obtained for monitoring of PM emission to be completed by 31.03.2015.
3.	Installation of fluoride removal (Fume treatment) system from bake oven plant control of fluoride in air.	NALCO	Fume treatment system for Bake oven-II & III have already been installed. Meanwhile, fume treatment plant in bake oven-I also has been installed.	Complied
4.	Construction of secured landfill by NALCO within its premises for control fluoride.	NALCO	Secured land fill at NALCO is constructed.	Complied

5.	Conducting a comprehensive wastewater audit for the smelter plant including runoff management by ultimate control of fluoride in water and soil.	NALCO	The auditing work is completed by IIT Roorkee. Report is submitted.	Complied
6.	Real time ambient air quality monitoring (SOx, NOx, CO, PM10, PM2.5) for evaluation of environmental parameters.	NALCO	Installed at 3 locations.	Complied
7.	Installation of hazardous waste incinerator by NALCO for disposal of hazardous waste	NALCO	Incinerator installed for liquid and solid hazardous waste.	Complied
8.	Co-processing of spent pot-lining in Cement kilns	Cement plants and NALCO	Trial for co processing in thermal power plants already initiated.	Not achieved.

Action Plan for Abatement of Pollution through Common Infrastructure and services

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remarks
1.	Construction of a sewage treatment plant for Talcher town for control of organic pollution in river.	OWSSB	-.	Target not achieved
2.	Establishment of an extensive air quality monitoring network for Angul - Talcher area for evaluation of air quality parameters in the area.	SPCB, NALCO, NTPC, Bhusan Steel	Installation of CAAQMS is under progress	Under progress
3.	Construction of water impoundment structures in Nandira, Lingra, Singda and Bangur nallah for water Conserveation.	Water Resources Department and user agency	-	-
4.	Remediation of contaminated site near ORICHEM Ltd for control of leaching of chromium.	ORICHEM Ltd.	M/s ORICHEM has started shifting of hazardous waste to TSDF, Sukhinda. MoEF funded scheme for remediation of contaminated site of ORICHEM is under progress.	-

5.	Construction of a bypass / flyover for avoiding traffic congestion on the national highway near Bhushan Steel & Power plant for control of traffic congestion and SPM.	Bhusan Steel Ltd. and NHAI	M/s Bhushan Steel has already provided funds to NHAI.	Under progress
6.	Promotion of industries within CPIC area which uses waste products like fly ash, char and waste heat for gainful utilization of solid waste		This action can be implemented after the moratorium on establishment of industries is kept in abeyance. SPCB has already stipulated rebate on consent fees for industries using the waste product as a promotional initiative.	Under progress
7.	The establishment of on-line monitoring station for water quality monitoring of River Brahmani and online data transmission facility with SPCB and CPCB. The parameters include Fluoride, Cadmiumand TOC.	NALCO TTPS (NTPC) Talcher	-	-
8.	Pb, Cr, Cd and Fluoride Concentrations in Ground water is to be monitored.	MCL	-	-

9.	Monitoring of PM2.5 and Ozone on the points of traffic congestions should be done.	NALCO, Bhusan Ltd. And MCL	-	Monitoring of PM_{10} and $PM_{2.5}$ is done by NALCO.
10.	All the STPs will be provided with a standby DG sets to prevent discharge of sewage during power failure	Respective stake holders like MCL, TTPS, NALCO etc.	TTPS- Installed a DG set for STP. NALCO- Installed a DG set for STP.	