F. No. J-11011/28/2007-IA-II(I)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

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Dated: 24th May, 2019

To

Ms. Uma Katoch,
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Ispat Bhawan, Bhilai Steel Plant
Bhilai, District Durg,
Chhattisgarh - 490001

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Subject: Revised configuration of modernization-cum-expansion of 7.0 MTPA Bhilai Steel Plant **by M/s. Steel Authority of India Limited** at Bhilai, District Durg, Chhattisgarh – **Environmental Clearance – reg.**

Madam,

1. This refers to the application of M/s. Steel Authority of India Limited made vide proposal no. IA/CG/IND/67974/2017dated 10thAugust 2018 along with copies of EIA/EMP report and Form 2 seeking environmental clearance under the provisions of the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at Sl. No. 3(a) Metallurgical Industries (Ferrous and Non-ferrous) under Category "A" of the schedule of EIA Notification, 2006 and the proposal is appraised at Central level.

2. The proposal was considered in the 1st meeting of the Reconstituted Expert Appraisal Committee held on 26-28th November, 2018 and further reconsidered in the 5th meeting of the Reconstituted Expert Appraisal Committee held on 27-29th March, 2019. The EAC proceedings of the proposal cited above is given as below.

Details submitted by the Project Proponent

3. The proposal for revised configuration of 7.0 MTPA Modernization-Cum-Expansion of Bhilai Steel Plant along with Captive power plant of M/s Steel Authority of India Limited (SAIL) located in Bhilai, Tehsil Durg, District Durg, State Chhattisgarh was initially received in the Ministry on 06th September, 2017 for obtaining Terms of Reference (ToR) as per EIA Notification, 2006. The project was appraised by the Expert Appraisal Committee (Industry) [EAC(I)] during its 24thmeeting held during 13th – 15th November, 2017 and prescribed ToRs to the project for undertaking detailed EIA study for obtaining environmental clearance. Accordingly, the Ministry of Environment, Forest and Climate Change had prescribed ToRs to the project on 29th November, 2017 vide Letter No.F. No. J-11011/28/2007-IA-II(I).

4. The project of M/s. SAIL-BSP is located in Bhilai, Durg Tehsil, Durg District, Chhattisgarh State is for revised configuration of 7.0 MTPA Modernization-Cum-Expansion of Bhilai Steel Plant for production of 7.0 Million TonnesPer Annum (million TPA) of Crude Steel Production. The existing project was accorded environmental clearance vide letter.no. J-11011/28/2007-IAII(I) dated 31.03.2008. The Status of compliance of earlier EC was obtained from Regional Office, Nagpur vide Lr. Nos. 5-249/2009(Env)3463 dated 2nd April, 2018 and 5-249/2009(Env)4372 dated 26th September, 2018. Presently, there are no non-compliances reported by Regional Officer. The table showing present configuration (7.0 MTPA project configuration as per EC 2008 and its subsequent amendments), proposed configuration and final project configuration after grant of EC is as below:

S. No.	7.0 MTPA Plant Configuration (EC 31.03.2008 & amendments	Present Proposal under Revised Configuration for grant of EC	7.0 MTPA Plant Configuration After Grant of EC		Remarks
			1st Three years	After Three Years **FINAL CONFIGURATION**	
1	**Sinter Plant Complex**				
	Sinter Plant-1 (4 x 50 m^2) **Phased out**	**No Change**	-	-	**No Change**
	Sinter Plant-2 (3x75 m^2+1x 80 m^2)	**No Change**	Sinter Plant-2 (3x75 m^2+1x80 m^2)	Sinter Plant-2 (3x75 m^2+1x 80 m^2)	**No Change**
	Sinter Plant-3 : Machine 1 (1x 320 m^2)	**No Change**	Sinter Plant-3 : Machine 1 (1x 320 m^2)	Sinter Plant-3 : Machine 1 (1x 320 m^2)	**No Change**
	Sinter Plant-3 : Machine 2 (1x 360 m^2) (Mc. 2 : Production : 3.168 MTPA)	Sinter Plant-3, Machine 2 (1x 360 m^2) : Increase in Sinter Production from 3.168 MTPA to 3.705 MTPA (+ 0.537 MTPA)	Sinter Plant-3, Machine 2 (1x 360 m^2) : Production Capacity : 3.705 MTPA	Sinter Plant-3, Machine 2 (1x 360 m^2) : Production Capacity : 3.705 MTPA	**Change**
	Total Sinter Production = 9.235 MTPA	**Total Sinter Production = 9.772 MTPA**	**Total Sinter Production = 9.772 MTPA**	**Total Sinter Production = 9.772 MTPA**	**Change**
2	**Coke Oven Complex**				
	Composition: 8 Nos. - 65 Oven 4.3 m tall battery i.e. Battery No. 1, 2, 3, 4, 5, 6, 7 & 8 and 3 Nos. - 67 Ovens, 7 m tall batteries, i.e.	**Composition : No Change**	**Composition**: 8 Nos. - 65 Oven 4.3 m tall battery and 3 Nos. - 67 Oven 7 m tall battery	**Composition**: 8 Nos. - 65 Oven 4.3 m tall battery and 3 Nos. - 67 Oven 7 m tall battery	**Composition: No Change**

S. No.	7.0 MTPA Plant Configuration (EC 31.03.2008 & amendments	Present Proposal under Revised Configuration for grant of EC	7.0 MTPA Plant Configuration After Grant of EC		Remarks
			1st Three years	After Three Years **FINAL CONFIGURATION**	
	Coven Battery No. 9, 10 & 11.				
	Operation Regime: • 8 Battery Operation. • At any time 3 Coke Oven batteries will be shut-down for cold repair and rebuilding cycle.	**Operation Regime:** • 9 Battery Operation. • At any time 2 batteries will be shut-down for cold repair and rebuilding cycle. • Running one extra battery, keeping coke production same.	**Operation Regime:** • 9 Battery Operation. • At any time 2 batteries will be shut-down for cold repair and rebuilding cycle.	**Operation Regime:** • 9 Battery Operation. • At any time 2 batteries will be shut-down for cold repair and rebuilding cycle.	**Change**
	Total Gross Coke Production = 3.94 MTPA	**No Change**	**Total Gross Coke Production = 3.94 MTPA**	**Total Gross Coke Production = 3.94 MTPA**	**No Change**
3	**Blast Furnace Complex**				
	BF 1 with CDI (1033 m^3) - to be gradually progressively phased out	BF 1 with CDI (1033 m^3) **in operation for three years for undertaking sequential capital repair of BF 4, 5 & 6 along with stabilisation of BF 8.**	BF 1 with CDI (1033 m^3) **in operation for three years**	Phased Out	**Will be in operation for 3 years and then phased out.**
	BF 2 with TIS (1033 m^3) - Phased Out	**No Change**	-	-	**No Change**

S. No.	7.0 MTPA Plant Configuration (EC 31.03.2008 & amendments	Present Proposal under Revised Configuration for grant of EC	7.0 MTPA Plant Configuration After Grant of EC		Remarks
			1st Three years	After Three Years **FINAL CONFIGURATION**	
	BF 3 with TIS (1033 m^3) - Phased Out	**No Change**	-	-	**No Change**
	BF 4, 1719 m^3	BF 4, 1719 m^3 **Capital Repair**	BF 4, 1719 m^3	BF 4, 1719 m^3	**No Change**
	BF 5, 1719 m^3	BF 5, 1719 m^3 **Capital Repair**	BF 5, 1719 m^3	BF 5, 1719 m^3	**No Change**
	BF 6, 1719 m^3	BF 6, 1719 m^3 **Capital Repair**	BF 6, 1719 m^3	BF 6, 1719 m^3	**No Change**
	BF 7, 2363 m^3	**No Change**	BF 7, 2363 m^3	BF 7, 2363 m^3	**No Change**
	BF 8, 4060 m^3 with TRT	**No Change**	BF 8, 4060 m^3 with TRT	BF 8, 4060 m^3 with TRT	**No Change**
	Total Hot Metal = 7.5 MTPA	**No Change**	**Total Hot Metal = 7.5 MTPA**	**Total Hot Metal = 7.5 MTPA**	**No Change**
4	**Steel Making & Casting Units**				
	SMS I	**SMS I**	**SMS I**	**SMS I**	**SMS I**
	4x 500t Twin Hearth Furnace - to be gradually progressively phased out	4x 500t Twin Hearth Furnace **in operation for three years till stabilization of SMS III & BF 8).**	4x 500t Twin Hearth Furnace **in operation for three years**	Phased Out	**Will be in operation for 3 years and then phased out.**
	SMS II	**SMS II**	**SMS II**	**SMS II**	**SMS II**
	3x120t BOF	**No Change**	3x120t BOF	3x120t BOF	**No Change**
	2X120t LF	**No Change**	2X120t LF	2X120t LF	**No Change**
	3x120t RH	**No Change**	3x120t RH	3x120t RH	**No Change**
	1x120t VD	**No Change**	1x120t VD	1x120t VD	**No Change**
	Hot metal Desulphirisation	**No Change**	Hot metal Desulphirisation	Hot metal Desulphirisation	**No Change**
	3x1 strand Slab Casters (MC#1, 2, 3)	**No Change**	3x1 strand Slab Casters (MC#1, 2, 3)	3x1 strand Slab Casters (MC#1, 2, 3	**No Change**

S. No.	7.0 MTPA Plant Configuration (EC 31.03.2008 & amendments	Present Proposal under Revised Configuration for grant of EC	7.0 MTPA Plant Configuration After Grant of EC		Remarks
			1st Three years	After Three Years **FINAL CONFIGURATION**	
	Combi-Caster: Bloom (3 strand) cum Slab (1 strand) Caster (mc#4)	**No Change**	Combi-Caster: Bloom (3 strand) cum Slab (1 strand) Caster (mc#4)	Combi-Caster: Bloom (3 strand) cum Slab (1 strand) Caster (mc#4)	**No Change**
	1x4 strand Bloom Caster (MC#5)	**No Change**	1x4 strand Bloom Caster (MC#5)	1x4 strand Bloom Caster (MC#5)	**No Change**
	1x1 slab caster (mc#6)	**No Change**	1x1 slab caster (mc#6)	1x1 slab caster (mc#6)	**No Change**
	SMS III	**SMS III**	**SMS III**	**SMS III**	**SMS III**
	3x160 t BOF	**No Change**	3x160 t BOF	3x160 t BOF	**No Change**
	3x160 t LFs	**No Change**	3x160 t LFs	3x160 t LFs	**No Change**
	1x 160 t RH-OB	**No Change**	1x 160 t RH-OB	1x 160 t RH-OB	**No Change**
	1 x vacuum tank degassing unit (Space provision)	**No Change**	1x vacuum tank degassing unit (Space provision)	1x vacuum tank degassing unit (Space provision)	**No Change**
	Hot metal Desulphurisation	**No Change**	Hot metal De-sulphurisation	Hot metal De-sulphurisation	**No Change**
	-	New 3x160t Argon Rinsing Unit (ARU) envisaged	New 3x160t Argon Rinsing Unit (ARU)	New 3x160t Argon Rinsing Unit (ARU)	**Change**
	2x6 strand Billet Casters	**No Change**	2x6 strand Billet Casters	2x6 strand Billet Casters	**No Change**
	1x6 strand Bloom cum Billet Casters	**No Change**	1x6 strand Bloom cum Billet Casters	1x6 strand Bloom cum Billet Casters	**No Change**
	1x3 strand Beam Blank Caster	Modification of 1x3 strand Beam Blank Caster into 1x3 strand Bloom-cum-Beam blank Caster of same capacity	1x3 strand Bloom-cum-Beam blank Caster	1x3 strand Bloom-cum-Beam blank Caster	**Change**
	Total Crude Steel	**No Change**	**Total Crude Steel**	**Total Crude Steel Production : 7.0 MTPA**	**No Change**

S. No.	7.0 MTPA Plant Configuration (EC 31.03.2008 & amendments	Present Proposal under Revised Configuration for grant of EC	7.0 MTPA Plant Configuration After Grant of EC		Remarks
			1st Three years	After Three Years **FINAL CONFIGURATION**	
	Production : 7.0 MTPA		**Production : 7.0 MTPA**		
6	**Rolling Mills**				
	Blooming and Billet Mill (2.149 MTPA) - to be gradually progressively phased out.	Blooming and Billet Mill (2.149 MTPA) **in operation for three years till stabilization of SMS III & BF 8.**	Blooming and Billet Mill (2.149 MTPA) **in operation for three years**	-	**Will be in operation for 3 years and then phased out.**
	Universal Beam Mill (1.0 MTPA): Not coming	**No Change**	-	-	**No Change**
	2.2 MTPA Rail & Structural Complex with Universal Rail Mill (URM)	**No Change**	2.2 MTPA Rail & Structural with Universal Rail Mill (URM)	2.2 MTPA Rail & Structural with Universal Rail Mill (URM)	**No Change**
	Plate Mill (1.65 MTPA)	New Quenching &Tampering facility in Plate Mill	Plate Mill : 1.65 MTPA with Quenching & Tampering facility	Plate Mill : 1.65 MTPA with Quenching & Tampering facility	**Change**
	Bar & Rod Mill (0.90 MTPA)	**No Change**	Bar & Rod Mill 0.90 MTPA	Bar & Rod Mill 0.90 MTPA	**No Change**
	Merchant Mill (0.85 MTPA)	**No Change**	Merchant Mill (0.85 MTPA)	Merchant Mill (0.85 MTPA)	**No Change**
	Wire Rod Mill (0.7 MTPA)	**No Change**	Wire Rod Mill (0.7 MTPA)	Wire Rod Mill (0.7 MTPA)	**No Change**
	Total Finished Steel = 6.30 MTPA	**No Change**	**Total Finished Steel = 6.30 MTPA**	**Total Finished Steel = 6.30 MTPA**	**No Change**
7.	**Power Blowing Station & Turbo-generators**				
	6 x 150 tph boiler	**No Change**	6 x 150 tph boiler	6 x 150 tph boiler	**No Change**
	1 x 150 tph boiler	**No Change**	1 x 150 tph boiler	1 x 150 tph boiler	**No Change**

S. No.	7.0 MTPA Plant Configuration (EC 31.03.2008 & amendments	Present Proposal under Revised Configuration for grant of EC	7.0 MTPA Plant Configuration After Grant of EC		Remarks
			1st Three years	After Three Years **FINAL CONFIGURATION**	
	3 x 12 MW	**No Change**	3 x 12 MW	3 x 12 MW	**No Change**
	1 x 15 MW	**No Change**	1 x 15 MW	1 x 15 MW	**No Change**
	2 x 150 tph BF gas fired boiler	**No Change**	2 x 150 tph BF gas fired boiler	2 x 150 tph BF gas fired boiler	**No Change**
	1 x 25 MW	**No Change**	1 x 25 MW	1 x 25 MW	**No Change**
	1390 tph steam, Power Generation 76 MW	**No Change**	**1350 tph steam, Power Generation 76 MW**	**1350 tph steam, Power Generation 76 MW**	**No Change**
	TRT Power Generation 14 MW	**No Change**	TRT Power Generation 14 MW	TRT Power Generation 14 MW	**No Change**
	CDCP Power Generation 4 MW	**No Change**	CDCP Power Generation 4 MW	CDCP Power Generation 4 MW	**No Change**
8.	**Refractory Material Plant (RMP) : Lime &Dolo plant**				
	RMP I to be gradually/ progressively phased out.	**RMP I in operation along with SMS-1 for three years till stabilization of SMS III & BF 8**	**RMP I in operation for three years**	-	**Will be in operation for 3 years and then phased out.**
	RMP - II • 2x330 tpd + 1 x 144 tpd Lime kiln	**No Change**	**RMP-II** • 2x330 tpd + 1 x 144 tpd Lime kiln	**RMP-II** • 2x330 tpd + 1 x 144 tpd Lime kiln	**No Change**
	RMP III 5x450 tpd lime and dolo kiln for SMS-III	**No Change**	**RMP III** 5x450 tpd lime and dolo kiln for SMS-III	**RMP III** 5x450 tpd lime and dolo kiln for SMS-III	**No Change**
	Refractory Material = 1.58 MTPA	**No Change**	**Refractory Material = 1.58 MTPA**	**Refractory Material = 1.58 MTPA**	**No Change**
9.	**Oxygen Plant :** • 3 x 550 tpd and • 1 x 700 tpd	**No Change**	**Oxygen Plant :** • 3 x 550 tpd and • 1 x 700 tpd	**Oxygen Plant :** • 3 x 550 tpd and • 1 x 700 tpd	**No Change**
10.	Other Auxiliary facilities	**No Change**	Other Auxiliary facilities	Other Auxiliary facilities	**No Change**

S. No.	7.0 MTPA Plant Configuration (EC 31.03.2008 & amendments	Present Proposal under Revised Configuration for grant of EC	7.0 MTPA Plant Configuration After Grant of EC		Remarks
			1st Three years	After Three Years **FINAL CONFIGURATION**	
	(Matching facilities for achieving production)		(Matching facilities for achieving production)	(Matching facilities for achieving production)	

5. The summary of the proposed capacity / modernizations / modifications for different units/products of revised configuration of 7.0 MTPA Modernization-Cum-Expansion of Bhilai Steel Plant under present proposal for environmental clearance is as below:

SN	Name of unit	New units / Modernisation / Modification requested
1.	SMS-III	Addition of new 3x160 t Argon Rinsing Unit (ARU)
		Modification of 1x3 strand Beam Blank caster in to 1x3 Strand Bloom-cum-Bean Blank caster of same capacity
2.	Plate Mill	Addition of new Quenching and tempering facility
3.	Coke Oven Complex	Bringing in of one more Coke Oven Battery in operation to achieve the desired coke production (3.94 MTPA) for 7.0 MTPA Crude Steel production.
4.	Sinter Plant-III (Machine-2)	Increase of total sinter production from sinter plant complex (from 9.235 MTPA to 9.772 MTPA) by operational optimization.
5.	Blast Furnace-1 (BF-1)	In operation during the sequential capital repair of BF-4, BF-5 & BF-6 & BF8 Stabilisation / coming in to full production. Expected time required is 3 years.
6.	Steel Melting Shop-I (SMS-I)	In operation till SMS-III Stabilisation / coming in to full production & BF8 Stabilisation / coming in to full production. Expected time required 3 years.
7.	Refractory Material Plant-I (RMP-I)	
8.	Blooming & Billet Mill (BBM)	

6. The proposed project under revised configuration of BSP 7.0 MTPA modernization-cum-expansion is proposed within the already acquired existing premises of BSP and no additional land will be required. The project area of SAIL-BSP is 3284.75 ha. SAIL-BSP is having total 6286.75 ha (15534 acre) of land under its possession. No forest land involved. The entire land has been acquired for the project earlier during the setting up of Bhilai Steel Plant which had initial capacity of 1.0 MTPA Crude Steel production. No River passes through the project area. However, it has been reported that two artificial water reservoirs, namely Maroda –I and Maroda-II, for industrial water cooling and storage of raw water exist within the project boundary.

7. The topography of the area is flat and reported to lie between $21^0$11'to $21^0$13'N Latitude and $81^0$22' to $81^0$24'ELongitude in Survey of India topo sheet No. F44P08, at an average elevation of 290 m AMSL. No ground water is being used either for the existing project or

being envisaged for the proposed project. Additionally, SAIL-BSP has constructed rain water harvesting systems in several units within plant premises and identified buildings of Bhilai Township, wherein the rain water system has been established to recharge ground water through recharges pits.

8. No National Park/Wildlife Sanctuary/Biosphere Reserve/Tiger Reserve/Elephant Reserve etc. are reported to be located in the core and buffer zone of the project. The area also does not report to form corridor for Schedule-I fauna.

9. The proposed project is envisaged for techno-economic advantage during project operation. While there will be no change in Hot Metal, Crude Steel and Finished Steel production and Power Generation, which will remain same as per the EC accorded in 2008, i.e 7.5 MTPA Hot Metal, 7.0 MTPA Crude Steel and 6.3 MTPA Finished Steel.

10. The targeted production capacity of the Bhilai Steel Plant is 7.0 Million TPA Crude Steel (same as per the EC accorded in 2008). The ore for the plant would be procured from captive mines of SAIL. The ore transportation is done through rail and road.

11. The quantity of raw materials required for revised configuration of 7.0 MTPA Bhilai steel plant and the mode of transportation is given as below:

S.no	Raw Material Description	Existing 7.0 MTPA Integrated Steel Plant of BSP			Additional for proposed Project (t/yr)	Total after Proposed Revised 7.0 MTPA Project Configuration		
		Source	Gross Quantity (t/yr)	Transportation Mode		Source	Raw Material Requirement (t/yr)	Transportation Mode
1	Iron ore fines	Dalli, Rajhara / Rowghat	72,87,000	Rail	412250	Dalli, Rajhara / Rowghat	7,699,250	Rail
2	Iron Ore lumps	Dalli, Rajhara / Rowghat	43,78,000	Rail	No change	Dalli, Rajhara / Rowghat	4,378,000	Rail
3	Limestone	Nandini, Kuteshwar& Jaisalmer	18,47,000	Rail / Road	No change	Nandini, Kuteshwar& Jaisalmer	1,847,000	Rail / Road
4	Dolomite	Hirri & Belha / Hirri	11,14,700	Rail	No change	Hirri & Belha / Hirri	1,114,700	Rail
5	Quartzite	Muripar	1,04,600	Rail	No change	Muripar	104,600	Rail
6	Coking Coal	Imported / Indigenous	5,679,000	Rail	No change	Imported / Indigenous	5,679,000	Rail
7	Pellet	At mines	6,40,500	Rail	No change	At mines	640,500	Rail
8	Coal for injection in BFs (CDI Coal)	Imported	9,74,000	Rail	No change	Imported	974,000	Rail

S.no	Raw Material Description	Existing 7.0 MTPA Integrated Steel Plant of BSP			Additional for proposed Project (t/yr)	Total after Proposed Revised 7.0 MTPA Project Configuration		
		Source	Gross Quantity (t/yr)	Transportation Mode		Source	Raw Material Requirement (t/yr)	Transportation Mode
	Total		**2,20,24,800**		**4,12,250**		**2,20,24,800**	

12. No additional water requirement is envisaged for the proposed project under the present proposal of revised configuration of 7.0 MTPA Modernization-cum-Expansion (EC 2008). The existing total water requirement is 15981 m^3/hr (5.0 TMC ft/y). Presently the Water Resources Department (WRD), Chhattisgarh has accorded supply of 4.0 TMCft/y water through Tandula canal vide agreement dated 19th April, 2006 and BSP has requested WRD for supply of additional 1.0 TMCft/y water vide Lr. No. GM/WMD/2018/233 dated 8th March, 2018 to meet the water demand at 7.0 MTPA capacity. Permission for water abstraction of 1.0 TMCft/y is yet to be obtained.

13. The power requirement of the 7.0 MTPA project is estimated as 468MW. Only critical power and total process steam will be generated through the captive power plant. The balance power requirement will be met from outside sources.

14. Baseline Environmental Studies were conducted during Post Monsoon 2017 season i.e. from 1st October, 2017 to 31st December, 2017. Ambient air quality monitoring has been carried out at 8 locations during October to December, 2017and the data submitted indicated: PM_{10} (39to 83µg/m^3), $PM_{2.5}$ (18to 43µg/m^3), SO_2 (4.8to 23.1µg/m^3) and NOx(14.5 to 31.9µg/m^3). The results of the modeling study indicates that the maximum increase of GLC for the proposed project is 2.75µg/m^3 with respect to the PM_{10}, 2.0µg/m^3 with respect to the SO_2 and 2.0 µg/$m^3$with respect to the NOx and this increase will be only for the initial three years.

15. Presently, under the 7.0 MTPA Integrated Steel Plant of BSP, about 95-97% of raw materials and products are transported through Indian Railways. Only 3-5 % of raw materials and products are dispatched through roads. The proposed project envisages increase in sinter production which will require additional quantity of iron ore fines. The requirement of iron ore fines will increase from the existing 72,87,000 t/yr (7.0 MTPA project) to 76,99,250 t/yr (revised configuration). The increase in iron ore fines is to the tune of 4,12,250 t/yr. The present source of iron ore fines is from Dalli, Rajhara / Rowghat and is being transported through rail. It is envisaged that the proposed requirement of iron ore fines will be from the same source and through same mode of transportation. Thus no impact of transportation of material is anticipated on the air environment due to the proposed units. Over and above, it will be ensured that all transport vehicles are in good working condition, properly tuned and maintained to keep emission within the permissible limits and engines turned off when not in use to reduce pollution. Vehicles would be regularly maintained so that emissions confirm to standards of Central Pollution Control Board (CPCB).

16. In the proposed project as there is no change in the hot metal and crude steel production, therefore the finished products are same as per the 7.0 MTPA configuration stage. The

quantity of different Finished/Saleable/By-products for the 7.0 MTPA Integrated Steel Plant of BSP and its mode of transportation is furnished as below:

11	Products	Existing 7.0 MTPA Plant (t/yr)	Revised Plant configuration (t/yr)	Mode of transport ation
1	Rails and Structurals	22,00,000	No change	Rail
2	Blooms	10,000	No change	
3	Normalized Plates & Finished Plates	16,50,000	No change	
4	Billets	2,11,800	No change	
5	Merchant Products	8,50,000	No change	
6	Wire Rods	7,00,000	No change	
7	Bars and rods	9,00,000	No change	
8	Pig iron	2,05,000	No change	
9	Slabs	9,000	No change	
	Total	**67,56,000**	No change	

Thus no additional impact of transportation of finished products is anticipated on the air environment due to the proposed units.

17. Ground water quality has been monitored in 8 locations in the study area and analysed. pH: 7.25to 7.82, Total Hardness: 156 to 292mg/l, Chlorides: 15.43 to 63.64 mg/l, Fluoride:0.22to 0.48 mg/l. Heavy metals are within the limits. Surface water samples were analysed from 9 locations. pH: 7.55 to 8.12; DO: 5.3 to 6.4 mg/l and BOD: 1 to 4mg/l.

18. Noise levels are in the range of 36.2 to 72.4 dB(A) for daytime and 34.2 to 55.7 dB(A) for night time.

19. It has been reported that in the proposed project additional about 283618T/yr of air cooled processed slag from BF#1 will be generated, out of which about 30% will be used in road making/construction material/ sale to slag wool manufacturers and remaining will be stocked in the earmarked slag yard during the operation of BF#1. The earmarked slag yard has sufficient space to stock the remaining air cooled processed slag generated during the operation of BF#1. Project proponent has also reported that efforts are being made for further enhancing the air cooled processed slag. Green belt developed within and around the BSP project area is 1711.33 ha with about 4,192,144 trees planted up to 2016-17. In 2017-18, 35190 trees were planted covering about 14 hectares. Green belt developed around the project site will attenuate the noise levels and trap the dust generated due to the project development activities.

20. It has been reported that the Consent to Operate from the Chhattisgarh Environment Conservation Board (CECB) obtained vide Lr.No 4690/TS/CECB/2018 dated 31.08.2018 (for 7.0 MTPA MODEX units and existing 4.0 MTPA units) and consent is valid up 29.08.2019. Proponent has also reported that the above consent thus covers all operating units of Bhilai Steel Plant.

21. The Public hearing of the project was held on 8th June, 2018 at Nehru Sanskritik Bhavan, Sector -1, Bhilai Nagar, Tehsil-Durg-Bhilai, Dist-Durg (C.G.) under the chairmanship of Shri Sanjay Agarwal, Additional District Magistrate, for revised configuration of 7.0

Million TPA Modernization-Cum-Expansion of Bhilai Steel Plant along with captive power plant of M/s Steel Authority of India Limited (SAIL) located in Bhilai, Tehsil Durg, District Durg, State Chhattisgarh.

22. An amount of 226Lakhs (0.83% of project cost) has been earmarked for Enterprise Social Commitment based on public hearing issues.

23. The capital cost of the project is Rs. 273Crores and the capital cost for environmental protection measures has already been considered under already implemented Modernization-cum-Expansion 7.0 MTPA project.

24. It was informed that, Green belt developed within and around the BSP project area is 1711.33 ha with about 4,192,144 trees planted up to 2016-17. Greenbelt along plant boundary (in available space) has already been developed, which will be further re-strengthened. Local and native species will be planted with a density of 2500 trees per hectare. In the next five years for further strengthening the green cover / plantation in BSP project area and in surrounding about 107500 saplings will be planted and nurtured in an area of about 45.25 ha.

25. The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.

26. EIA Consultant: Mecon Limited, Ranchi. [S.No. 103, List of Accredited Consultant Organizations (Alphabetically) Rev. 74, March 07, 2019].

27. The proposal was considered in the 1st meeting of the Reconstituted Expert Appraisal Committee held on 26-28th November, 2018 and further reconsidered in the 5th meeting of the Reconstituted Expert Appraisal Committee held on 27-29th March, 2019. After detailed deliberations, the Committee recommended the project cited above for grant of environmental clearance under the provisions of EIA Notification, 2006 subject to environmental safeguards.

28. The Ministry of Environment, Forest and Climate Change has considered the application based on the recommendations of the Expert Appraisal Committee (Industry-I) and hereby decided to grant Environmental Clearance for the *"Revised configuration of modernization-cum-expansion of 7.0 MTPA Bhilai Steel Plant by M/s. Steel Authority of India Limited at Bhilai, District Durg, Chhattisgarh"* under the provisions of EIA Notification, 14th September, 2006, as amended, subject to strict compliance of the following Specific and General Conditions:

A. Specific conditions:

i. Safety mock drill for gas pipeline maintenance shall be conducted every six months and reported to Regional Office of MoEF&CC. Project proponent shall arrange to provide training to employees on 'behavioural safety'.

ii. All CER activities as committed in the reply to the ADS letter dated 02/01/2019 shall be completed in financial year 2019-20.

iii. 100 % SMS Slag utilisation shall be ensured after conditioning /steam curing.

iv. Scheme for decommissioning of SMS1 and its utilities along with green belt development in that area shall be submitted within six months to the Ministry and Regional Office of the MoEF&CC.

v. Scheme for greenbelt development in the remaining area for covering 33% of total project area shall be submitted to the Regional Office of the MoEF&CC.

vi. Standard Operating Procedures (SOPs) shall be developed for performance monitoring of pollution control devices and performance monitoring should get conducted every year internally and every third year through accredited third party.

vii. In the Environmental Policy the hierarchy of reporting environmental non-compliances and emergencies should be clearly mentioned and submitted to the Regional Office of the MoEF&CC.

viii. Solid waste management as committed in the reply to the ADS letter dated 02/01/2019 shall be complied.

B. General conditions:

I. Statutory compliance:

i. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.

ii. The project proponent shall obtain the necessary permission from the Central Ground Water Authority, in case of drawl of ground water / from the competent authority concerned in case of drawl of surface water required for the project.

iii. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.

II. Air quality monitoring and preservation

i. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R 277 (E) dated 31st March 2012(Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants)as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognized under Environment (Protection) Act, 1986.

iii. The project proponent shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM_{10} and $PM_{2.5}$ in reference to PM emission, and SO_2 and NOx in reference to SO_2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120°each), covering upwind and downwind directions.

iv. The cameras shall be installed at suitable locations for 24X7 recording of battery emissions on the both sides of coke oven batteries and videos shall be preserved for at least one-month recordings.

v. Sampling facility at process stacks and at quenching towers shall be provided as per CPCB guidelines for manual monitoring of emissions.

vi. The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugitive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

vii. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.

viii. The project proponent shall provide leakage detection and mechanised bag cleaning facilities for better maintenance of bags.

ix. Secondary emission control system shall be provided at SMS Converters.

x. Pollution control system in the steel plant shall be provided as per the CREP Guidelines of CPCB.

xi. Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.

xii. Recycle and reuse iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after briquetting/ agglomeration.

xiii. The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.

xiv. Facilities for spillage collection shall be provided for coal and coke on wharf of coke oven batteries (Chain conveyors, land based industrial vacuum cleaning facility).

xv. Land-based APC system shall be installed to control coke pushing emissions.

xvi. Monitor CO, HC and O_2 in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber.

xvii. Vapor absorption system shall be provided in place of vapour compression system for cooling of coke oven gas in case of recovery type coke ovens.

xviii. In case concentrated ammonia liquor is incinerated, adopt high temperature incineration to destroy Dioxins and Furans. Suitable NOx control facility shall be provided to meet the prescribed standards.

xix. The coke oven gas shall be subjected to desulphurization if the sulphur content in the coal exceeds 1%.

xx. Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.

xxi. Design the ventilation system for adequate air changes as per ACGIH document for all tunnels, motor houses, Oil Cellars.

xxii. The project proponent shall install Dry Gas Cleaning Plant with bag filter for Blast Furnace and SMS converter. (*to be decided on case to case basis depending on type and size of plant*)

xxiii. Dry quenching (CDQ) system shall be installed along with power generation facility from waste heat recovery from hot coke

III. Water quality monitoring and preservation

i. The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R 277 (E) dated 31st March 2012 (Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.

iii. The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

iv. The project proponent shall provide the ETP for coke oven and by-product to meet the standards prescribed in G.S.R 277 (E) dated 31st March 2012 (Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time as amended from time to time;

v. Adhere to 'Zero Liquid Discharge'.

vi. Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.

vii. Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.

viii. Tyre washing facilities shall be provided at the entrance of the plant gates.

ix. CO_2 injection shall be provided in GCP of SMS to reduce pH in circulating water to ensure optimal recycling of treated water for converter gas cleaning.

x. The project proponent shall practice rainwater harvesting to maximum possible extent.

xi. Treated water from ETP of COBP shall not be used for coke quenching.

xii. Water meters shall be provided at the inlet to all unit processes in the steel plants.

xiii. The project proponent shall make efforts to minimise water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water.

IV. Noise monitoring and prevention

i. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

ii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time

V. Energy Conservation measures

i. The project proponent shall provide TRTs to recover energy from top gases of Blast Furnaces.

ii. Coke Dry Quenching (CDQ) shall be provided for coke quenching for both recovery and non-recovery type coke ovens;

iii. Waste heat shall be recovered from Sinter Plants coolers and Sinter Machines.

iv. Use torpedo ladle for hot metal transfer as far as possible. If ladles not used, provide covers for open top ladles.

v. Use hot charging of slabs and billets/blooms as far as possible.

vi. Waste heat recovery systems shall be provided in all units where the flue gas or process gas exceeds 300°C.

vii. Explore feasibility to install WHRS at Waste Gases from BF stoves; Sinter Machine; Sinter Cooler, and all reheating furnaces and if feasible shall be installed.

viii. Restrict Gas flaring to < 1%.

ix. Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;

x. Provide LED lights in their offices and residential areas.

xi. Ensure installation of regenerative type burners on all reheating furnaces.

VI. Waste management

i. An attrition grinding unit to improve the bulk density of BF granulated slag from 1.0 to 1.5 Kg/l shall be installed to use slag as river sand in construction industry.

ii. In case of Non-Recovery coke ovens, the gas main carrying hot flue gases to the boiler, shall be insulated to conserve heat and to maximise heat recovery.

iii. Tar Sludge and waste oil shall be blended with coal charged in coke ovens (applicable only to recovery type coke ovens).

iv. Carbon recovery plant to recover the elemental carbon present in GCP slurries for use in Sinter plant shall be installed.

v. Waste recycling Plant shall be installed to recover scrap, metallic and flux for recycling to sinter plant and SMS.

vi. Used refractories shall be recycled as far as possible.

vii. SMS slag after metal recovery in waste recycling facility shall be conditioned and used for road making, railway track ballast and other applications. The project proponent shall install a waste recycling facility to recover metallic and flux for recycle to sinter plant. The project proponent shall establish linkage for 100% reuse of rejects from Waste Recycling Plant.

viii. 100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.

ix. Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil. Oil collection trays shall be provided under coils on saddles in cold rolled coil storage area.

x. The waste oil, grease and other hazardous waste like acidic sludge from pickling, galvanising, chrome plating mills etc. shall be disposed of as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016. Coal tar sludge / decanter shall be recycled to coke ovens

xi. Kitchen waste shall be composted or converted to biogas for further use.

VII. Green Belt

i. Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant

ii. The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.

VIII. Public hearing and Human health issues

i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

ii. The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.

iii. Provision shall be made for the housing of 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.

iv. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

IX. Corporate Environment Responsibility

i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.

ii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.

iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose.

Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

vi. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Iron and Steel plants shall be implemented.

X. Miscellaneous

i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

iv. The project proponent shall monitor the criteria pollutants level namely; PM_{10}, SO_2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

vi. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

vii. The project proponent 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, commencing the land development work and start of production operation by the project.

iv. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

v. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.

viii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).

ix. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

x. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

xi. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

xii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

xiii. The above conditions shall 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 and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

xiv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

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

(A.K. Agrawal)
Director

Copy to:-

1. **The Secretary**, Department of Environment, Government of Chhattisgarh,
2. **The Chairman**, Central Pollution Control Board, Parivesh Bhawan, CBD-cum office complex, East Arjun Nagar, Delhi-110032
3. **The Chairman**, Chhattisgarh Environment Conservation Board, Nanak Niwas, Civil Lines, Raipur, Chhattisgarh
4. **The Additional Director General**(C), Ministry of Environment, Forest and Climate Change, Regional Office (WCZ), Ground Floor, East Wing, New Secretariat Building, Civil Lines, Nagpur - 440001.
5. **The Member Secretary**, Central Ground Water Authority, West Block –II, Wing -3, Sector I, R.K.Puram, New Delhi – 110086.
6. **The District Collector**, Durg District, Chhattisgarh
7. **Guard File/Record File/Monitoring File**
8. **MoEF&CC website**.

(A.K. Agrawal)
Director