# MINUTES OF THE 34<sup>TH</sup> MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD ON 16<sup>TH</sup> DECEMBER, 2022.

The 34<sup>th</sup> Meeting of the re-constituted EAC (Thermal Power) organized by the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jor Bagh Road, New Delhi was held on 16<sup>th</sup> December, 2022 through video conference under the Chairmanship of Shri Gururaj P. Kundargi. The list of Members participated in the meeting is at **Annexure**.

# Agenda Item No. 34.1: Confirmation of the Minutes of the 32<sup>nd</sup> EAC meeting

The Minutes of the 33<sup>th</sup> EAC (Thermal Power) meeting held on 30<sup>th</sup> November, 2022 were confirmed in the meeting.

### Agenda Item No. 34.2

Expansion of Kalisindh Ultra Super critical (1 X 800 MW) Coal based Thermal Power Project from 2x600 MW in an area of 555 Ha (Existing) at Village Nimoda, Tehshil Jhalara Patan, District Jhalawar (Rajasthan) by M/s Rajasthan Rajya Vidhyut Utpadan Nigam Ltd – Terms of Reference – reg.

## [Proposal No. IA/RJ/THE/406137/2022; F. No. J-13011/80/2007-IA.II (T)]

**34.2.1** The proposal is for grant of Terms of Reference to the project for Expansion of Kalisindh Ultra Super critical (1 X 800 MW) Coal based Thermal Power Project from 2x600 MW in an area of 555 Ha (Existing) at Village Nimoda, Tehshil Jhalara Patan, District Jhalawar (Rajasthan) by M/s Rajasthan Rajya Vidhyut Utpadan Nigam Ltd.

**34.2.2** The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

- i. M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited (RRVUNL) proposes to establish 1x 800 MW capacity coal based Ultra supercritical thermal power project adjacent to Stage-I power station which is currently in operation.
- ii. The Environmental Clearance was accorded vide letter dated 26<sup>th</sup> February, 2009 by Ministry to 2x600 MW Coal based Thermal Power Plant at Kalisindh, Jhalawar District, Rajasthan by M/s RRVUNL.
- iii. The proposed 1 X 800 MW project is an extension of existing 2X600MW units with adequate area for power house, steam generators, transformer yard, switch yard, coal and ash handling plant, cooling towers, other major balance of plant equipment/facilities and green belt The land for this project is available for power project and totally encumbrance-free.
- iv. The site is easily accessible by road and rail. Site is located near to the NH 12 and only 4 Kms to

SH 19. Ramganj Mandi Railway station which is nearest railway station (between Jaipur & Jhalawar). The nearest airport is Jaipur which is about 370 km from the site. All the heavy equipment for the power plant are expected to be received at site via road / through rail.

v. The annual coal requirement for 1 X 800 MW units is estimated to be about 2.8 million tones/year of having an average calorific value of 4500 kCal/kg and plant would operate at a plant load factor (PLF) of 85 %. The secondary fuel would be HFO as per IS 1593 and the start-up oil would be LDO as per IS 1460-1995.

## vi. Coal Supply Arrangement & Coal Handling system:

The requirement of about 2.8 million tonnes / year of domestic coal would be met through from captive block in Chattisgarh /MP or from SECL /NCL. Domestic coal with average GCV of 4500Kcal/Kg is envisaged. Existing infrastructure such as railway line, wagon tipplers would be utilized for the proposed new unit also.

Additional stockpile, stacker reclaimers, crushers, screens and set of belt conveyors along with Junction towers etc. would be installed to supply coal to coal bunkers of 1x 800 MW Units through travelling trippers.

- vii. **Ash Handling System:** The system proposed for bottom ash removal would be wet slurry system with Jet pumps. Bottom ash is further pumped to the new ash disposal area in lean slurry form with provisions for recovery of water from the ash pond.
- viii. Water requirement: The total raw water required for phase 2, 800 MW unit would be 1948 m3/hr (545mcft) and same will be sourced from Kalisindh dam which is about 20 kms away from the plant. 665 mcft water out of total Dam capacity 1920 mcft available in Kalisindh Dam (Total 1920 mcft, less 1200 mcft for KaTPP Unit 1&2, 47 mcft RICO 09 mcft Horticulture) as per the inputs provided by RRVUNL.
  - ix. **Condenser Cooling and Make-up Water:** The total requirement of raw water make-up is of the order of 545 mcft/year for the 800 MW power plant capacity. An allocation of 665 mcft has been considered due to evaporation and pipe losses which are located outside of plant boundary. Raw water is proposed to be pumped from the existing intake system.

For the condenser cooling, closed circuit re-circulation system with filtered water make-up using natural draft cooling towers (NDCT) has been proposed. The make-up water for the cooling towers would be drawn from the filtered water sump and gets discharged into the CW forebay. From the CW pump house the cooling water would be pumped to the condenser through individual MS conduits. The discharge would be led to the cooling tower through similar MS conduits.

Raw water required for other services viz. DM plant will be drawn from a clarified water tank. Water required for cooling water make up for air-conditioning & ventilation system and plant potable water system, service water shall be drawn from filtered water sump / overhead tank. Water required for coal and ash handling systems, fire protection system, etc. will be taken from cooling tower blow down tank.

Feed cycle makeup and cooling water for steam generator and turbine generator auxiliaries would

be met from the DM plant output.

## x. Environmental Aspects:

- a) Sulphur oxides are generated as a result of oxidation of the sulphur present in the coal at the combustion zone. Considering the extent of sulphur absorption required and the large volume of flue gas to be treated, limestone slurry sorbent based once- through, wet type FGD with forced oxidation, having a minimum SO2 absorption efficiency of 95% is proposed. The steam generators would be provided with low NOx burners resulting in lower emission of oxides of Nitrogen from the steam generator.
- b) A RCC chimney with multi-flue 100 meters high are proposed to be provided for effective dispersion of SO2, NOX and SPM. The steam generators would be provided with electrostatic precipitators to limit the particulate matter in the flue gas to 30 mg / N m3.
- c) The steam generators would be provided with electrostatic precipitators to limit the particulate matter in the flue gas to 30 mg / N m3 as per the present guidelines of Central Pollution Control Board and State Pollution Control Board.
- d) Adequate provisions are proposed for neutralising the effluents from the water treatment plant. Effluents from the entire power plant are proposed to be treated and reused in the power plant to minimise the make-up water requirement.
- e) Effective ash management plan for utilization of fly ash would be planned and implemented to ensure proper disposal and use of generated fly ash. The ash utilization would be progressively increased to achieve 100 %.
- f) All the measures would be taken to limit the noise levels within the permissible limits in the premises and at the plant boundary.
- g) Provision would be made for the green belt within the premises.
- h) No villages are directly affected by this project; hence rehabilitation and resettlement issues are expected to be bare minimum.
- i) In view of the above measures no significant impact on environment is expected due to the installation of proposed power project.
- xi. Land Availability: Total land area of about 555 Hectares, including 420 Ha for the power plant which includes area for existing unit of 2 x 600 MW and Proposed unit of 1 x 800 MW and auxiliaries, 85 Ha for the ash disposal area and 50 Ha for the township/colony.
- xii. **Project Cost:** Total capital cost including the interest during construction for the proposed 1 x 800MW project is estimated to be Rs.6054.58 Crores (Rs. 7.56 Crores / MW).

# **34.2.3** The EAC during deliberations noted the following:

The proposal is for grant of Terms of Reference to the project for Expansion of Kalisindh Ultra Super critical (1 X 800 MW) Coal based Thermal Power Project from 2x600 MW in an area of 555 Ha (Existing) at Village Nimoda, Tehshil Jhalara Patan, District Jhalawar (Rajasthan) by M/s Rajasthan Rajya Vidhyut Utpadan Nigam Ltd.

The EAC noted that PP was not well prepared for presentation as they were not able to answer the queries raised by the EAC. Further, EAC noted that in six monthly compliance report, PP is not regularly

monitoring ground water parameters.

The EAC noted that water pond is just adjacent to ash pond and Neemoda village is also in close proximity of the ash pond and as well as thermal power plant.

Also, the EAC advised the PP that they should accompany the person who is conversant with the provisions of EIA Notification, 2006, as amended as well as other environmental issues associated with the thermal power plants and can answer the queries raised by the experts during the discussion in the EAC meeting, so that EAC could examine the environmental issues in a comprehensive manner. If possible, the PP can engage NABET accredited consultant to answer all the issues related to environment and ecology.

**34.2.4** The EAC after detailed deliberations on the information submitted by the project proponent, *deferred* the proposal seeking additional information from the project proponent:

- *i. PP* shall submit water utilization of the adjacent water pond, its quality parameters and behaviour ash pond towards the water pond along with small drone videography and photographs
- *ii.* Source of water for Neemoda village and its ground water quality status with comparative chart with previous value to current values shall be submitted.
- *iii. PP* shall submit Water balance of existing thermal power plant unit and water conservation activities/measures taken.
- *iv. PP* shall submit details of green plantation area within the plant premises, around the periphery of the plant and ash pond area along with their survival rate and species planned supporting with small drone videography and photographs.
- v. *PP shall submit details of ash pond including its life span, height, legacy ash, ash utilization status for last 5 years with its transportation details and future plans for ash utilization.*
- vi. PP shall submit air, water soil, hazardous waste quality data for last two years.
- vii. Coal quality parameters report for ash content, sulphur content, heavy metal and radioactivity of the coal feeding for the boilers shall be submitted
- viii. PP shall submit small drone videography and photographs of fish migration channel.

The project was **deferred** on above points.

#### Agenda Item No. 34.3

2x660 MW Super Critical Coal based Thermal Power Project (Expansion) at Lalpania Village, Bokaro District, Jharkhand by M/s Tenughat Vidyut Nigam Limited (TVNL)- reg. Directions under E(P) Act, 1986 and ToR proposal.

**34.3.1** The Member secretary informed to the EAC that the instant matter is regarding revocation of closure direction given by the Ministry to a coal based Thermal Power Project in Bokaro District of Jharkhand by M/s Tenughat Vidyut Nigam Limited (TVNL). M/s TVNL is operating at 420 MW

(2x210 MW) Tenughat Thermal Power Station (TTPS). The first unit of 210 MW was commissioned in September, 1996 and second unit of 210 MW in September, 1997. TTPS has already acquired land of approximately 1,800 acres for setting up of these two units.

2. It was further informed that the application for grant of ToR has been submitted online on 22.9.2017 for conducting EIA study for establishing 2x660 MW Thermal Power Project (expansion project). The proposal for grant of ToR was considered by the EAC (Thermal) on 26.10.2017 and recommended for site visit as there were several complaints received regarding environmental pollution. The sub-committee of EAC conducted site visit during 16<sup>th</sup> - 17<sup>th</sup> December, 2017. The EAC in its meeting held on 12.1.2017 deliberated the site visit report and noted that plant is running without CTO since last two years. CPCB also issued closure directions vide letter dated 21.11.2017. Committee opined that the Ministry may forward the site visit report to the Govt. of Jharkhand for immediate remedial action. Further, the Committee recommended that the present proposal shall not be considered till all the issues are addressed duly by the PP. Accordingly, the proposal was deferred.

3. Subsequently, Ministry vide Order dated 5.3.2018 issued closure directions under Section 5 as plant was running without CTO and several shortfalls were reported during site visit of EAC subcommittee and other regulatory bodies. The State Government has been consistently requesting to revoke the closure order.

4. Further, the D.O. letters from the then JS-MoEF&CC to Secretary-Energy and Secretary-Env & Forest, Govt. of Jharkhand were issued on 7.3.2018 to take appropriate action as per closure directions.

5. M/s TVNL vide letters dated 19.3.2018 and 6.9.2018 submitted the action plan and requested to revoke the closure directions. Based on the factual report dated 11.10.2018, received from the Regional Office, Ranchi regarding implementation of pollution control measures, it was observed that the plant was in operation despite closure orders issued by the Ministry and reported that several measures such as ETP construction, Ash water recycling system, separate ash silo storage, online emission monitoring, removal of ash in open areas were initiated.

6. In view of non-compliance of the closure directions the then Secretary, MoEF&CC written to State Government vide letter dated 11.09.2020, however, compliance of Ministry's closure direction is still to be ensured by the project authorities. The IRO has re-visited the site on 01.11.2021 (report submitted on 29.12.2021) and found that plant is still in operation.

7. The PP vide letter dated 13.09.2022 has submitted that:

"Closure of TVNL may result in power shortage and inconvenience for the people of the state. It is worthwhile to mention here that Jharkhand has worked immensely hard for supplying 24X7 power to the state. Closure of TVNL may affect badly the State Govt's efforts to achieve the same.

Moreover, it is humbly submitted that TVNL always honour and abide by the direction of statutory bodies of Govt. and never meant to any dishonour. It is pertinent to mention here that total power

generated by TVNL is supplied to the state distribution licencee, Jharkhand Bijli Vitran Nigam Limited (JBVNL). TVNL being the only state undertaking for power generation whose power is reliable and continuously available at low cost."

8. Compliance status to the closure directions as reported by the IRO and as submitted by the PP vide letter dated 13.09.2022 is given as under:

S.No.	Directions issued in Show	Compliance status	
	cause notice dated 5.3.2018		
1.	Grant of renewal of Consent to	HW Authorisation obtained on 17.1.2018 and	
	Operate (CTO) and Hazardous	Consent obtained on 23.8.2018.	
	Waste Authorisation by JSPCB.		
2.	Withdrawal of CPCB directions	CPCB has withdrawn closure notice on 2.7.2018.	
	dated 21.11.2017.		
3. Remove ash dumped in the open As per t		As per the IRO report dated 29.12.2021 the	
	areas & on roads and restore the	information furnished the latest work order for	
	areas to normal condition. The	excavation of ash from ash pond completed on	
	ash removed shall be stored in the	12.10.2021. Details not furnished regarding	
	existing ash dyke. If the existing	impermeable/HDPE lining on the ash pond.	
	ashdyke is exhausted, it shall be	Fixed water sprinkler around the ash pond has	
	stored in the new dyke in	not been observed. Grass has been developed in	
	controlled manner.	part of the ash on the ash pond. Ash pond dyke	
4.	Control fugitive dust emissions	wall has been raised by using soil to minimize	
	from ash pond and strengthen	water spillage. Ash water recirculation system	
	embankments of ash pond to	has not been observed. Presently water has	
	prevent seepage	stated that ash water allow to sattle in the ash pond.	
		stated that ash water above to settle in the ash poind	
		and then release through pipes. The drain was	
		wet uuring visit and traces of asn were also	
		monitoring data around the fly ash nond by	
		constructing niezometer has not been	
		<b>furnished</b> . PP has furnished a document of notice	
		inviting tender for EPC work of installation of ash	
		water recirculation system vide dated	
		16.09.2021. Fixed water sprinkler at the ash	
		pond has not been observed. Manual water	
		sprinkler observed at the ash pond with the help of	
		tanker mounted with DG set without acoustic	
		enclose. Dry fog type dust suppression system	
		at the ash pond has not been observed.	

5.	Install and connect online	As per IRO report dated 29.12.2021 Online stack
	emission & effluent monitoring	monitoring system has been provided to the stack.
	to CPCB server.	During visit unit I was not in operation. The data
		observed for unit 2 was SO2 341.25 PPM, NO
		314.38 PPM, CO 197.19mg/Nm3. PM emission
		recorded as 75.3 (mg/Nm?) with a load of 189
		MW. Data was being transmitted to JSPCB. In
		the submitted online data, it was observed that
		Particulate matter exceeds the value of 100
		mg/Nm3 from 04.11.21 to 15.11.21. Last stack
		Calibration report submitted was of the dated
		04.10.2021. Manual mercury monitoring data
		reported for Aug21 was less than 0.01 mg/Nm3
		for unit I and was less than 0.01 mg/Nm3 for unit
		II in sep21. Flue gas velocity reported as
		13.98m/second 08th Sep21 for unit II and 14.06
		for unit 1 on 27th Aug21 in the monitoring report
		analysed by M/s Go Green Mechanism Pvt
		Limited.
		An effluent monitoring system has been provided
		for monitoring of effluent water near the DM plant
		for COD, BOD, TSS and pH and connected with
		the server of SPCB. During visit the parameter
		observed was COD 54.30 mg/I, BOD 15.61 mg/I,
		TSS 38.07mg/land pH 6.69. The monitoring
		system was not kept properly on the channel and
		connected vide pump and pipe. The monitoring
		equipment needs to be installed on the line of
		flow. However online monitoring system has
		not been provided for ash pond effluent water,
		cooling water and other effluents and being
		discharged in to the water bodies without any
		treatment. Zero liquid discharge has not been
		followed. Total water consumption reported to
		be 3.8M3 /MWh.
6.	Submit the time bound and point-	PP vide letter dated 13.09.2022 informed that
	wise action plan along with	several measures such as 100% Flyash
	anocations for	f fugitive pollution is maintained has used
	compnance & environmental	or rugilive pollution is maintained by movable
	protection measures against the	sprinklers, discouraged open dumping of fly ash,
	observations made by CPCB	instantion of OCIVIS for ambient air, entuent and

(Directions), JSPCB	(Show-	stack emissions, mounted water sprinkling in coal	
causes) and Sub-comm	ittee of	yard and as bund of as pond.	
EAC (Site visit report) within 15		Earlier, Action plan for setting up of water	
days.		recirculation system, Effluent Treatment System,	
		Sewage Treatment System, DPR preparation for	
		FGD have been provided.	

9. The matter was examined in the Ministry and it was decided to refer the matter to the EAC, as the matter was already being dealt with by the EAC, for suggesting future course of action including the issue of closure direction given earlier and for violation of the closure directions.

## 34.2.5 The EAC during deliberations noted the following:

The EAC noted that Ministry vide Order dated 5.3.2018 issued a closure direction as plant was running without CTO and several shortfalls were reported during site visit of EAC sub-committee held on 16<sup>th</sup> - 17<sup>th</sup> December, 2017 and other regulatory bodies.

The EAC observed that after several instructions from MoEF&CC, PP didn't not close the operations of the Plant and Thermal Power Plant is still in operation.

Further, EAC examined the compliance status report dated 29.12.2021 submitted by the IRO and observed that IRO reported major non-compliances to the Directions issued in Show-Cause notice dated 5.3.2018. Furthermore, the EAC also examined the reply submitted by the PP vide letter dated 13.09.2022.

The EAC was of the view that IRO shall conduct a fresh site visit and submit latest compliance status report on specific points raised by the EAC sub-committee and directions issued by the Ministry in Show-Cause notice dated 5.3.2018.

## The meeting ended with vote of thanks to the Chair.

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#### Annexure

S. No.	Name	Role	Attendance
1.	Shri Gururaj P. Kundargi	Chairman	Р
2.	Shri Suramya Vora	Member	Р
3.	Dr. Santosh Kumar	Member	Р
	Hampannavar		
4.	Dr. Umesh Kahalekar	Member	Р
5.	Professor S. S. Rai,	Member	Р
6.	Shri K.B. Biswas	Member	Р
7.	Dr. Nandini N	Member	Р
8.	Dr. Nazimuddin	Member (Representative of CPCB)	Р
9.	Shri M.P. Singh	Member (Representative of CEA)	Р
10.	Shri Yogendra Pal Singh	Member Secretary	Р

# **ATTENDANCE**

## **APPROVAL OF THE CHAIRMAN**

From: gpkundargi@gmail.com To: "Yogendra Pal Singh" <<u>yogendra78@nic.in</u>> Sent: Wednesday, December 28, 2022 6:28:24 PM Subject: Re: Draft MOM of the EAC (Thermal) 34th meeting held on 16.12.2022-reg

Dear Dr Yogendra ji Draft Minutes are fine with me & approved for further needful action. Thank you G P Kundargi