कार्यालय – वन प्रंमडल पदाधिकारी,
हजारीबाग पश्चिमी वन प्रमंडल, वन भवन, हजारीबाग

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पत्रांक : 3376 दिनांक : 23/09/2021

सेवा में,

वन संरक्षक,
प्रादेशिक अंचल,
हजारीबाग।

विषय :– 33/11 के0 भी0 ग्राम पदमा सबस्टेशन से 33/11 के0वी0 ग्राम नचनवे सबस्टेशन तक निर्माणाधीन 33 के0बी0 लाईन के 7.608 हे0 वन भूमि अपयोजन के प्रस्ताव के के संबंध।

प्रसंग :– वन, पर्यावरण एवं जलवायु परिवर्तन विभाग का पत्रांक 1774 दिनांक 02.07.2021 एवं क्षेत्रीय मुख्य वन संरक्षक, हजारीबाग का ज्ञापांक 1309 दिनांक 16.07.2021 तथा प्रयोक्ता अभिकरण का पत्रांक 1001 दिनांक 21.08.2021, पत्रांक 1115 दिनांक 14.09. 2021 (प्रति संलग्न) ।

महाशय,

उपर्युक्त विषयक प्रसंगाधीन पत्र के संबंध में सूचित करना है कि विषयगत परियोजना के संबंध में पांच बिन्दुओं पर की गई पृच्छा का निराकरण प्रतिवेदन निम्नवत है :–

1.	Signed Part-I & Part –II with mentioning Name, Desgnation of the signing authority and Date of signature.	Furnished Part –I & Part – II along with all necessary documents attached here and uploaded in Parivesh Portal under the additional information. Annexure -1
2.	Details of Tree enumeration with mentioning the actual number of trees required to be felled as well as the number of trees enumerated in total forest area proposed for diversion.	Tree Enumeration details attached here and uploaded in Parivesh Portal under the additional information Annexure - 2
3.	Certified copy of FRA certificates for 7.608 ha. forest land along with consultations/ proceeding of Gram sabhas, Sub-Divisional Level Committee & District Level Committee.	Certified copy of FRA Certificate along with all necessary documents attached here and uploaded in Parivesh Portal under the additional information. Annexure - 3
4.	Cost of the project is 72.264 lacs (mentioned in Part-I), where calculated CA (29.7 lacs) and NPV (47.63 lacs) totaling 77.33 lacs. Clarification	Undertaking & clarification regarding the financial implementation of the project attached here and uploaded in Parivesh Portal under the

(5)

Comments of JBVNL regarding use of Insulated Aerial Bundled Cables or Underground Cable

This is in reference to the letter number 2465 dated 20th Jul-2021issued from the office of DFO– Hazaribagh West Forest Division, where in it has been asked to provide undertaking / comments for the use of Insulated Aerial Bundled Cables or Underground Cable in 33KV Line from Padma Substation to Nachanwe Substation, for which forest clearance approval in the process. In this regard, JBVNL would like to inform the followings –

1. 33KV line from Padma to Nachanwe Power Substation is proposed to energize 33/11kv 2X5MVA Nachanwe Power Substation which is constructed under Deen Dayal Upadhaya Gramin Jyoti Yojna (DDUGJY Scheme) to provide grid connectivity to the larger masses that have been devoid of the basic facility. This energy poverty is compounding the existing poor living conditions and opportunities for increasing cropping intensity due to lack of irrigation despite presence of sufficient water resources.

2. "Guidelines for laying transmission lines through Forest Area" has been issued by MoEF, Government of India vide circular F.No.7-25/2012-FC dated 05.05.2014 wherein use of bare conductor has been envisaged in 33KV line with special conditions for "width of Right of Way" and "width clearance between conductors and conductor & trees". Use of Insulated Conductors has only been

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mandated if the power line passes through National Parks and Wildlife Sanctuaries.

As per the verified land schedule for the proposed route of 33KV line from Padma substation to Nachanwe Substation, the line does not pass through any designated National Parks or Wildlife Sanctuaries, therefore, use of insulated conductors may not be mandatory as per guidelines.

3. Aerial Bunch Cable for 33KV is not readily available in market due to very rare use of this cable in utility sector. Main reason for this is the high failure rate of HV Aerial Bunch Cable wherever it has been used till date. Hence, Aerial Bunch Cable for 33KV is not advisable to be used in this proposed 33KV line from Padma to Nachanwe Substation.

4. The route for 33KV line from Padma to Nachanwe Power Substation (6.7 KM) passes through tough terrain comprising of undulated surface profile, hard rock, rivers, culverts, and agriculture fields. Trench for underground cable is not advisable in agriculture fields considering the use of tractor / manual plough for ploughing the field during farming season. Similarly, river crossing is not possible with underground cable. Trenching / HDD will be very challenging in forest land considering the possibility of hard rock.

Also, general drum length for 33KV UG cable is 250 meters and cable laying is usually done in smaller runs to restrict mid span

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joints. If the entire route of Padma Nachanwe (6.7km) is to be done with UG Cable then the number of joints would be in excess of 25nos which will make cable highly susceptible to failure. In case of fault, maintenance of UG cable would require deployment of special machines and special skilled personnel which would be very challenging to arrange immediately. Further it may be noted that -

Power restoration

Damage to underground transmission lines is difficult to pinpoint, and repairs may take a few weeks to several months to complete. Sometimes it causes unrest in the local population.

Capacity requirements

For underground transmission, a large number of cables are often required to match the capacity of the overhead circuit. Additional components increase the underground cost as a duct bank, vaults, splices and terminations are required which can also reduce overall system reliability.

Line-length challenges

Underground lines may require additional equipment to ensure proper electrical performance along the distance of the transmission line. The additional equipment translates to a higher overall cost, limits the length of the underground line installation and increases the likelihood of failure because of additional components.

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Multiple cables and cooling options

Overhead lines are air cooled and widely spaced for safety. Underground cables are installed in concrete encased PVC duct banks. Heat generated by the cables is dissipated into the earth.

Construction impacts

Burying transmission lines has more environmental impacts than placing them overhead. Considerable clearing and grading would be necessary, and dust and noise from construction would last three to six times longer than it would for overhead construction.

Easement and land purchase requirement

An overhead line typically has a wider easement footprint than an underground line.

Life expectancy

Underground high-voltage transmission lines have a life expectancy of 40+ years, while overhead lines have a life expectancy of more than 80 years. Considering that Jharkhand being a poor state, cost and life expectancy should be considered.

Costs

An underground line costs 10 to 15 times the cost of an overhead line due to time, materials, processes, the need to include transition substations and the use of specialized labor. An overhead line often can be routed around or over these difficult areas.

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Site restoration

Site restoration for underground construction is a much larger endeavour than it is for overhead construction because soil is disturbed along the entire route. Top soils have to be restored and returned to vegetated areas, and all hard surface areas must be re-established.

Moreover, cost of the project with bare conductor is envisaged to be Rs. 72.64 Lacs, however, cost with double circuit UG cable will increase approximately by 10 times making the project economically unviable.

Considering the above technical challenges and economical viability, it is requested to allow use of conductors in line with conditions as per guidelines issued by MoEF for laying transmission lines through forest areas.

Yours truly

05.8.2021

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In this matter, the decision may be taken as per the existing guidelines of Forest conservation Act 1980.

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