

S. No.	Basic Parameter	Value considered in design	Maximum Value as observed during the flood-2018	Remarks
For Tower No. 47/0				
1	HFL	43.15M	42.6M	Report of CWC indicates, flood water level remained below the designed HFL, but water flow maintained well above danger level for a prolonged period during the monsoon-2018.
2	MCL	19.15M	Couldn't Measure during flood	For a river like Ganga since flood water carries a huge amount of silt, bed level and profile thus keeps on changing rapidly with the recess of flood water level. Bed level gets lowered due to scouring in higher velocity of water flow during flood condition and raised again due to rapid sedimentation as flow velocity gets reduced on receding of flood water. The bed level around tower no. 47/0 thus definitely reached a level well below the design value of MCL during its collapse. Bed level measured to be at 32.35M on 07.11.2018 is at a higher level that raised out of silting once the flood water receded.
3	BL	31.16M	32.35M (Measured after the flood water receded during Nov-2018)	
4	V _{max}	5.035m/s	Couldn't measure during 2018 flood.	
5	\bar{V}_{max}	3.56m/s		Immediate measurement was not possible as site was not accessible due to prevailing water conditions in the river during 2018 flood. Velocity of flood water was measured during the worst flood of 2016 and maximum and mean maximum velocity found to be 6.1m/s, and 4.57m/s respectively which were much higher than their values the foundations were designed with. But since exposure condition for tower 47/0 was not severe it could withstand the 2016 severe flood without any damage. Hence actual velocity or water flow on the date of loss might have definitely reached much higher than their design values.
6	Q _{max}	66973Cum ec	No authentic data received	Comparison was not possible in absence of data.
For tower No. 46/8 & 46/9				These tower foundations were designed as shallow foundations considering the sites as virgin farmland, thus no hydrological parameters for main channel flow have any relevance for comparison for these locations.

14.0 Technical Discussion on Collapse and its Root Cause Analysis:

“.....

Unpredicted, Sudden course change and huge meandering of the river profile within a very short period of time caused an erratic water flow, collapse of land mass exposed the foundation and all stability arrangement disturbed thereon was the root cause of collapse for all the three tower foundations.”

29. It is noticed that in respect of tower No.47/0, the Highest Flood Level (HFL) considered in design of the tower was 43.15 m. However, as per the report, the maximum value observed during the flood in 2018 was 42.6 M as against the HFL of 43.15 m. Other parameters like Maximum Current Level (MCL), Bed Level (BL), Maximum Velocity (V Max) and Mean Maximum Velocity (\bar{V}_{max}) could not be measured during the flood. As regards tower Nos. 46/8 and 46/9, the firm has recorded that “these tower foundations were designed as shallow foundations considering the sites as virgin farmland”. We observe that no documentary proof has been placed on record neither in the above quoted report nor in the Petition so as to prove that right type and design adopted for all three types of tower foundations adopted, based on soil testing report. We also observe that the agency has concluded that “Unpredicted, Sudden course change and huge meandering of the river profile within a very short period of time caused an erratic water flow, collapse of land mass exposed the foundation and all stability arrangement disturbed thereon was the root cause of collapse for all the three tower foundations”. While concluding the said reasons, the agency has not produced any meteorological data or any other data for last 20-30 years to substantiate tis conclusion that event was “unpredictable”. We are unable to accept the findings in the report, prepared by a private agency appointed by the Petitioner itself, as the conclusive reasons for collapse of tower Nos.46/8, 46/9 and 47/0 in PB line.

30. The Petitioner in its presentation given by it at ERPC has submitted as follows:



31. As per the above presentation, the distance between the tower no. 47/0 and the river bank was 324m on 23.2.2010 which was reduced to 75 m due to change in course of river Ganga. However, the Petitioner has not placed on record the data for the years prior to 2010 which are relevant for the purpose since the bid was awarded and TSA was signed in the year 2009. Change in river course is not an abnormal phenomenon as mentioned below at paragraph-32 in the site report of the ERPC Committee where in it is mentioned that the area of around 7-10 Km in and around the affected site location is low lying area of River Ganga and lies submerged form July to January during the year. *As such* the Petitioner was expected to consider the historical data for a considerable long period while finalizing the route of the transmission line, designing the foundations and erection of tower in the river bed or nearby the riverbed. Therefore, the claim of the Petitioner that collapse of towers due to the change in course of river Ganga being entirely sudden, unprecedented and unforeseeable, constitutes a Force Majeure event in terms of the TSA is not supported by the documents on record.

32. We observe that the Committee formed by ERPC comprising of representatives of OPTCL, Sterlite, Powergrid, ERPC and BSPTCL in its site report dated 26.6.2019

has noted as follows:

“The followings are observed:

- 1) Site location is about 17 km from the main road of Suryagarha, Lakhisarai and around 7 Km from the village road.*
- 2) As per information gathered from villagers, the area of around 7-10 Km in and around the affected site location is low lying area of River Ganga and lies submerged from July to January during the year.*
- 3) Mobilization of man and materials to the locations is difficult during that period.*
- 4) As intimated by the villagers as well as site people the river Ganga is continuously shifting towards the right bank during last few years and meandering is about 150m per annum.*
- 5) The pile foundation of both the lines which had collapsed were the last pile foundations on the right bank of the river, now comes under the mid-stream of the River.”*

As per above, it can be inferred that course change of Ganga towards right bank was not so abnormal phenomenon since last few years. We observe that Report of “Sinha & Associates” has not covered this aspect of regular shifting of Ganga.

33. The Petitioner has relied upon 149th meeting of the Operations and Coordination Committee of the ERPC held on 18.9.2018 to contend that the ERPC, in the said meeting, had also noted that the collapse of towers of PB Line constituted a Force Majeure event which was beyond the control of the Petitioner. Relevant portion of the minutes of meeting of ERPC is extracted as under:

“After detailed deliberations, the Committee recommend the following:

- 1. Based on the facts provided by ENICL the above outage may be considered under the category of acts of God and force majeure events beyond the control of the transmission licensee.*
- 2. Considering the continuous erosion due to change in course of river Ganga since last few years, the transmission line needs to be diverted from the present river crossing to avoid the above threat.*
- 3. Keeping in view of all the facts, the zero date for commencement of the*

restoration works may be considered as the completion of approach road for carrying the construction material & equipment i.e. 14.01.2019.”

34. In the above mentioned ERPC meeting also, it is mentioned that there is continuous erosion due to change in course of river Ganga since last few years. It is also evident from the minutes of ERPC meeting that its observations were in the context of the outage of the transmission lines due to tower collapse based on the materials furnished by the Petitioner. ERPC has neither undertaken any on the spot study nor examined any technical data to determine the real causes of the tower failure and to what extent the Petitioner had taken reasonable care or complied with Prudent Utility Practices to prevent such incidents. Therefore, the minutes of ERPC cannot be considered as the conclusive evidence to establish that tower failure was on account of the natural Force Majeure event in terms of the TSA.

35. The Petitioner was directed in the ROP for the hearing dated 14.10.2021 to place on record the findings of a Government Body including Central Electricity Authority regarding collapse of the transmission towers. The Petitioner has not placed on record any such report. However, we have noticed that there is one report available in public domain on the website of Central Electricity Authority (CEA), namely “Report of the Standing Committee of Experts on Failure of EHV Transmission line Towers (April, 2018-March-2019)” (hereinafter referred to as the ‘Standing Committee Report’) issued by CEA, Government of India, Ministry of Power. In the said report, the reasons for collapse of BP Line has been discussed as under:

“4.5 400 kV D/C (Quad) Patna-Kishanganj transmission line (PGCIL) & 400 kV D/C Purnea- Bihar Sharif transmission line [M/s Sterlite Power]

Both the transmission lines are running almost parallel to each other and are crossing the river Ganga. The failed towers were located near bank of Ganga River. New water course was created due to flash / heavy flood and the soil below the foundation of towers were eroded causing damage to the

foundation and failure of towers. Change in course of river due to flood, improper assessment of change in river course, lack of provision of Proper Protection (retaining wall, Gabion wall etc.) for towers near the river was observed as cause of failure. In view of above, it was observed that towers erected near river banks should be frequently patrolled and proper assessment should be made about the change in course of river based on trend of soil erosion and necessary protection should be provided to towers to avoid damage during such incident.”

36. As per the above Standing Committee Report, the failed towers were located near the bank of river Ganga. The cause of failure of towers has been attributed to *“change in course of river due to flood, improper assessment of change in river course, lack of provision of Proper Protection (retaining wall, Gabion wall, etc.) for towers near the river”*. The Standing Committee has observed that towers erected near river banks should be frequently patrolled and proper assessment should be made about the change in course of river due to soil erosion and necessary protections should be provided to the towers to avoid damage. It is apparent from the above observations of the Standing Committee that the failure of towers was to a large extent attributable to the failure on the part of the Petitioner to assess the change in river course and lack of provision for protection of towers near the river. Thus, the Petitioner has failed to establish the mandate provided by the definition of Force Majeure i.e. *“but only if and to the extent that such events or circumstances are not within the reasonable control, directly or indirectly, of the Affected Party and could not have been avoided if the Affected Party had taken reasonable care or complied with Prudent Utility Practices”*. Further, the observation of the Standing Committee establishes that the case of the Petitioner is covered in the Force Majeure exclusion under Article 11.4.1 (f)(i) *“Non-performance caused by the Affected Party’s negligent or intentional acts, errors or omissions”*.

37. It would be also relevant to note that the Petitioner has acknowledged and agreed that it shall not be relieved from any of its obligations under the TSA on account of

unsuitability of the site or transmission line route(s) for whatever reasons as per the provision of Article 5 of the TSA. The relevant extract of the TSA is reproduced as under:

“Article: 5

*5. Construction of the Project 5.1 TSP’s Construction Responsibilities:
5.1.1. The TSP, at its own cost and expense, shall be responsible for designing, constructing, erecting, completing and commissioning each Element of the Project by the Scheduled COD in accordance with the Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007, Central Electricity Authority(Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010 Central Electricity (Grid Standards) Regulations, 2010, Central Electricity Authority (Safety requirements for construction, operation and maintenance of electrical plants and electric lines) Regulations, 2011 and Central Electricity Authority (Measure relating to Safety and Electricity Supply) Regulations, 2010, Prudent Utility Practices and other applicable Laws.*

5.1.2 The TSP acknowledges and agrees that it shall not be relieved from any of its obligations under this Agreement or be entitled to any extension of time by reason of the unsuitability of the Site or Transmission Line route(s) for whatever reasons. The TSP further acknowledges and agrees that it shall not be entitled to any financial compensation in this regard.”

38. In view of the foregoing discussions, viz (a) the Report of Sinha & Associates which lacks substantial data to prove that right routing of line and right type & design of towers adopted while constructing the line, and there is “unpredicted course change” while actual water level was below HFL (b) fact that the line was laid near banks of the river Ganga (c) Observation that change of course of river is not an abnormal phenomenon , rather a regular phenomenon as noted in Site report dated 26.6.2019 of Committee formed by ERPC where villagers and site people have observed that Ganga is regularly shifting towards right bank since last few years, (d) observations of CEA Standing Committee where CEA concluded that “Change in course of river due to flood, improper assessment of change in river course, lack of provision of Proper Protection (retaining wall, Gabion wall etc.) for towers near the river was observed as cause of failure”, and other reasons as noted in foregoing paragraphs, we are of the view that the event of collapse of towers in PB Line claimed by the Petitioner is not covered under the provisions of the Force Majeure clause.

Issue No. 3: Whether the claims of the Petitioner are covered under Change in Law in terms of the TSA?

39. The Petitioner has submitted that collapse of the towers forming part of the PB Line and the consequent expenditure incurred in carrying out the restoration of the PB Line was unavoidable and that the Petitioner was left with no choice but to carry out the diversion in order to prevent further damage to the PB Line. The Petitioner has submitted that it has incurred additional expenditure of Rs. 94.58 crore for restoration of PB Line. Since, the Petitioner had insured the PB Line against any potential loss or damage, the Petitioner upon the occurrence of the said event approached the New India Assurance Company Limited (“Insurer”) and filed its claim for damages suffered due to collapse of the transmission towers. The Petitioner has submitted that Insurer after due assessment of the damage suffered has awarded the Petitioner an amount of Rs. 12 crore in furtherance of the aforesaid insurance claim. As such, the Petitioner is only claiming the remaining additional expenditure of Rs. 82.58 crore, incurred by it on account of restoration of the PB Line. The Petitioner has submitted that the said expenditure was unforeseen and unavoidable and was required in order to restore the operations of the PB Line.

40. Further, the Petitioner has submitted that restoration of PB Line by construction of additional towers along the revised route on the directions of the ERPC amounts to additional scope of work not attributable to the Petitioner and not contemplated at the time of submission of bid. Since, the same constitutes a deviation from the bid documents, it amounts to a Change in Law event under Article 12 of the TSA.

41. We have considered the submission of the Petitioner. We have perused the provisions of the TSA with regard to Change in Law which are extracted as under:

“12.1 Change in Law

12.1.1 Change in Law means the occurrence of any of the following after the date, which is seven (7) days prior to the Bid Deadline resulting into any additional recurring/non-recurring expenditure by the TSP or any income to the TSP:

- The enactment, coming into effect, adoption, promulgation, amendment, modification or repeal (without re-enactment or consolidation) in India, of any Law, including rules and regulations framed pursuant to such Law;*
- A change in the interpretation or application of any Law by Indian Governmental Instrumentality having the legal power to interpret or apply such Law, or any Competent Court of Law;*
- The imposition of a requirement for obtaining any Consents, Clearances and Permits which was not required earlier:*
- A change in the terms and conditions prescribed for obtaining any Consents, Clearances and Permits or the inclusion of any new terms or conditions for obtaining such Consents Clearances and Permits;*
- Any change in the licensing regulations of the Appropriate Commission, under which the Transmission License for the Project was granted if made applicable by such Appropriate Commission to the TSP:*
- any change in the Acquisition Price; or*
- any change in tax or introduction of any tax made applicable for providing Transmission Service by the TSP as per the terms of this Agreement.*

42. Perusal of the above provisions of Article 12 in the TSA reveals that for an event to be 'Change in Law', its occurrence has to be after the seven days prior to the bid deadline and should result into any additional recurring/ non-recurring expenditure by TSP or any income to TSP. The events broadly covered under Change in Law are following:

- (a) Any enactment, coming into effect, adoption, promulgation, amendment, modification or repeal, of any Law;
- (b) Any change in interpretation of any law by a Competent Court of law, or Indian Governmental Instrumentality having the legal power for such interpretation;
or
- (c) Imposition of a requirement for obtaining any consents, clearances and permits which was not required earlier;
- (d) A change in terms and conditions prescribed or inclusion of any new terms and conditions for obtaining consents, clearances and permits or the inclusion of new terms and conditions for obtaining such consents, clearances and permits;

- (e) Any change in the Transmission Licence Regulations issued by the Commission;
- (f) Any change in the Acquisition price; and
- (g) Any change in tax or introduction of any tax made applicable for providing transmission service by the TSP as per the terms of the agreement.

43. Indian Government Instrumentality as defined in the TSA is as under:

“Indian Governmental Instrumentality” shall mean Government of India, Government of any State in India or any ministry, department, board, authority, agency, corporation, commission under the direct or indirect control of Government of India or any State Government or both, any political sub-division of any of them including any court or Appropriate Commission or tribunal or judicial or quasi-judicial body in India but excluding TSP and Long Term Transmission Customers”

44. Further, “Law” has been defined in the TSA as under:

“Law” or “Laws” in relation to this Agreement, shall mean all laws including electricity laws in force in India and any statute, ordinance, rule, regulation, notification, order or code, or any interpretation of any of them by an Indian Governmental Instrumentality having force of law and shall include all rules, regulations, decisions and orders of the Appropriate Commission;”

“Law” or “Laws” has been defined in the TSA as “all laws including electricity laws in force in India and any statute, ordinance, rule, regulation, notification, order or code, or any interpretation of any of them by an Indian Governmental Instrumentality having force of law and shall include all rules, regulations, decisions and orders of the Appropriate Commission”.

45. Cut-off date for Change in Law events i.e. the date which is seven days prior to the bid deadline was 8.9.2009. In the light of the above provisions of Change in Law, the claims of the Petitioner which have occurred after cut-off date during the construction and operating period have been examined as under:

46. We have perused the minutes of 149th OCC meeting held on 18.9.2018. The

relevant extract is given as under:

“Item No. B.6: Multiple Contingency due to the Tower Collapse of 400 kV Purnea-Biharsharif D/C and 400 kV Kishenganj-Patna D/C in the Eastern Region- ERLDC

Deliberation in the meeting

ENCIL informed that one more tower of 400 kV Purnea-Biharsharif D/C line had collapsed and restoration of the line using interim arrangement is not possible now. They are planning for permanent restoration of the line, which would take long time. ENCIL agreed to communicate the schedule to ERPC and ERLDC.

Item No. B.7: Long Outage of transmission elements in Eastern Region

c) 400kV Purnea-Biharsariff-DC:

Line was out of service from 10/08/18 due to tower collapse as Ganga River has changed its course. ENICL informed that restoration of the line is in progress using a temporary arrangement and the restoration of the line would take 50 days approximately. ENICL may please update the current status and also submit fortnight status report to ERLDC/ERPC through mail.

ENICL may update.

Deliberation in the meeting

ENCIL was advised submit the schedule of restoration plan.

47. Further, we have also perused minutes of 1st meeting of the Committee constituted by ERPC for ‘Analysing the major outages of ISTS elements of Eastern Region – regarding held on 13.2.2019’. The relevant portion of the minutes of meeting is extracted as under:

“Item No. 1. Outage of 400kV D/C Purnia-Biharsharif line of ENICL.

400kV Purnia-Biharsharif D/C line was out of service from 10/08/18 due to the change of course of the river Ganges and heavy velocity of flow of water which leads to tower collapse. ENICL informed that restoration of the line is in progress using a temporary arrangement and the restoration of the line would take 50 days approximately.

Further, in 149th OCC, ENCIL informed that one more tower of 400 kV Purnea-Biharsharif D/C line had collapsed and restoration of the line using interim arrangement is also not possible. They are planning for permanent restoration of the line, which would be restored by June 2019. ENICL requested to consider the restoration period as force majeure condition

149th OCC in principle agreed to consider the restoration period as force majeure condition. However, the period of forced majeure condition is to be decided judiciously.

Deliberation in the meeting

ENICL gave a detail presentation on outage of 400 kV Purnia-Biharshariff D/C line highlighting the change of course of the river Ganges and heavy velocity of flow of water which leads to tower collapse. The salient points emerged during the presentation of ENICL are as follows (Presentation is enclosed at Annexure-II):

- On 10.08.2018 at 10:28 the tower no 47/0 of 400kV D/C Purnia-Biharsharif was collapsed due to change in course of river Ganga & water flow with high velocity near the tower location which was a pile foundation tower (DD+18).
- Further, more soil erosion occurred due to change in course of river Ganga and the high velocity & heavy water flow lead to collapse of one more tower location no 46/9 (open cast type) on 21.08.2018 which was earlier situated on land.
- The possibility of line restoration using ERS towers got set back due to increase in the span (due to collapse of 2nd tower) and enhancement of water level and soil conditions.
- In view of too much erosion of the river bank due to change of course of river Ganges, the nine towers from location no 46 to location no 47 were under threat of collapse in the next few years. So the total restoration plan had to be changed considering the continuous erosion due to change of course of Ganges.
- Therefore, the transmission line has to be diverted from the present river crossing to avoid the above threat which requires extra four (4) number pile foundation (3 number on ground and 1 number in water) and five (5) number open cast foundation to prevent it from the endanger of further soil erosion.
- The area was under flooding conditions and receding of water started from 22.09.2018. Further, due to muddy and mire soil, it was difficult to start the restoration work. The restoration works has started from 14.10.2018 and temporary approach road to site location was constructed by 15.12.2018 and the final approach road for carrying the construction material and equipment was completed on 13.01.2019.
- Since, the main work started from 14th January, 2019 only after the completion of approach road, the same may be considered as zero date for restoration work.
- As per the restoration schedule given by ENICL, the line would be restored permanently by **July'2019**.

.....
After detailed deliberations the Committee recommended the followings:

- i) Based on the facts provided by ENICL the above outage may be considered under the category of acts of God and force majeure events beyond the control of the transmission licensee.
- ii) Considering the continuous erosion due to change of course of river Ganges since last few years, the transmission line needs to be diverted from the present river crossing to avoid the above threat.
- iii) Keeping in view of all the facts, the zero date for commencement of the restoration work may be considered as the completion of approach road for carrying the construction material & equipments i.e. 14.01.2019.
- iv) The reasonable restoration time allowable should not exceed six months from the zero date of the restoration work.”

From the above quoted minutes, we note that Petitioner informed the ERPC that the PB Line could not be restored through interim arrangements. Further, Petitioner in its presentation informed that the said line to the extent of 9 towers had to be diverted from the present river crossing to avoid the threat arising out to the erosion of river bank. It is worthwhile to mention that existing route of the transmission line was chosen by Petitioner itself near to bank of Gana river where its change in course is very common. Further, it is the Petitioner who suggested the alternate route when its tower collapsed stating that “in view of too much erosion of the river bank due to change of course of river Ganges, the nine towers from location no 46 to location no 47 were under threat of collapse in the next few years.” In the presentation given by the Petitioner, it was suggested that the *transmission line has to be diverted from the present river crossing to avoid the threat*. It is also noticed that none of the documents indicate any concerns of the Petitioner regarding additional expenditure arising out of so-called direction of ERLDC for re-routing of the PB Line for its restoration. There is no direction as far as ERPC is concerned which could qualify as Change in Law under the quoted provisions of the TSA. In fact, nothing on contrary has been placed on record by the Petitioner that it was not its responsibility for restoration of towers and that the need of re-routing arose on account of ‘Change in Law’ as defined in the TSA.

48. In view of the above, and the fact that selection of route of line was petitioner’s own decision, the additional expenditure incurred by the Petitioner on account for restoration of PB Line by construction of addition towers on the revised route doesn’t fall under Change in Law clause of the TSA. The tower restoration was the responsibility of the Petitioner and it cannot argue that it undertook restoration of towers on the directions of ERPC. The selection of alternate route for restoration of PB Line which entailed the construction of addition towers was the Petitioner’s own decision taken after assessing

the soil erosion along the river bank. Ratification of such restoration works/plan of the Petitioner and the time schedule for restoration by the Committee does not make it a direction of ERPC. In any event, the Petitioner was mandated to restore the PB Line under the provisions of TSA be it on the original route/location or by selecting the alternate route/location and in the present case, as already noted above, the alternate route for restoration of PB Line was proposed by the Petitioner itself. In the competitive bid project, TSP is liable to bear all expenditure after cut-off date unless it is covered under Change in law. It cannot argue that the restoration plan proposed in the ERPC meeting by the Petitioner itself was beyond the scope of the original Project and it is entitled to be compensated for additional expenditure on account of this events.

49. In view of the above, the claim of the Petitioner that the restoration of PB Line by construction of additional towers along with the revised route on the direction of ERPC amounts to additional scope of work and consequently, a Change in Law event under the TSA deserves to be rejected.

50. In the light of the above discussion, it is held that the Petitioner's case is covered neither under Force Majeure nor under Change in Law provisions of the TSA.

Issue No. 4: What reliefs, if any, should be granted to the Petitioner in the light of the answers to the above issues?

51. Since in above issues we have held that the said events does not falls under Force Majeure and Change in Law, no relief is granted to the Petitioner.

52. The Petition No. 514/MP/2020 is disposed of in terms of the above.

Sd/-
(P.K. Singh)
Member

sd/-
(Arun Goyal)
Member

sd/-
(I.S. Jha)
Member