

**Central Electricity Regulatory Commission,  
New Delhi**

**Petition No. 132/MP/2018**

**Coram:**

**Shri P.K. Pujari, Chairperson  
Dr. M. K. Iyer, Member  
Shri I.S. Jha, Member**

**Date of Order: 21<sup>st</sup> January, 2020**

**In the matter of:**

Petition under Section 79(1)(c) and Section 38(2)(b) of the Electricity Act, 2003 for continuation of Lilo of 400 kV s/c Vindhychal-Korba transmission line at Mahan Supre Thermal Power Station subject to completion of 400kv d/c Mahan-Sipat transmission line by Respondent no.2.

**And**

**In the matter of**

Power Grid Corporation of India Limited,  
B-9, Qutab Industrial Area,  
Katwaria Sarai,  
New Delhi-110016.

-

**Petitioner**

Versus

1. Essar Power M.P. Limited,  
Essar House, 11<sup>th</sup> Floor, 11 KK Marg,  
Opp Racecourse, Mahalaxmi, Mumbai-400034.
2. Essar Power Transmission Company Limited,  
Lower Ground Floor, Hotel Treebo Conclave Riviera,  
A-20, Kailash Colony, New Delhi-110048.
3. Western Regional Power Committee,  
F-3, MIDC Area, Marol,  
Opp SEEPZ, Central Road,  
Andheri (East), Mumbai-400093.
4. Central Electricity Authority,  
Sewa Bhawan, R.K. Puram,  
New Delhi-110066.
5. Western Regional Load Despatch Centre,  
F-3, M.I.D.C. Area, Marol,



Andheri (East), Mumbai-400093.

6. MP Power Management Company Ltd.,  
Shakti Bhawan, Rampur, Jabalpur,  
Madhya Pradesh- 482008

... Respondents

**Parties present:**

Ms. Suparna Srivastava, Advocate, PGCIL  
Ms. Sajna, Advocate, PGCIL  
Shri Pratyush Singh, PGCIL  
Shri Ranjeet Singh, PGCIL  
Dr. VN Paranjape, PGCIL  
Shri Alok Sharma, Advocate, EPTCL  
Ms. Shruti Verma, ESSAR  
Shri Ravi Sharma, Advocate, MPPCL

**ORDER**

The present petition has been filed by the Petitioner, namely, Power Grid Corporation of India Limited in its capacity as Central Transmission Utility (CTU) for seeking continuation of the LILO of 400 kV D/C Vindhyachal-Korba Transmission Line at Mahan TPS till finalization of suitable alternatives that may be identified through system studies to address the high short circuit levels. The Petitioner has made the following prayers:

(a) *In the event of completion of 400kV D/C Mahan – Sipat power evacuation line by 31.03.2018, continuation of the LILO till finalization of suitable alternatives (if any) as may be identified through system studies to address the high short circuit level issue;*

(b) *In the event of disconnection of the LILO on account of non-completion of 400kV D/C Mahan – Sipat power evacuation line by 31.3.2018, reconnection and continuation of the LILO from such date as Respondent No.2 achieves commissioning of 400kV D/C Mahan–Sipat power evacuation line, till such time and subject to the system studies as described in prayer (a) above;*

(c) *Pass such further and other order(s) as this Hon'ble Commission may deem fit and proper in the facts and circumstances of the present case.*



## **Background**

2. The Petitioner is the Central Transmission Utility (CTU) notified under Section 38 of the Electricity Act, 2003 and has been vested with the functions of planning and coordination in relation to inter-State transmission system (ISTS) in consultation with State Transmission Utilities, Central/State Governments, generating companies, Regional Power Committees, Central Electricity Authority, licensees and any other person that the Central Government may notify in that behalf for development of efficient, coordinated and economical system of transmission lines for smooth flow of electricity from the generating stations to load centers.

3. The Respondent No.1 is a subsidiary of Essar Power Ltd. and is setting up a 1200 MW (2X600 MW) thermal power plant at District Singrauli in the State of Madhya Pradesh. Power evacuation from the project of Respondent No.1 has been finalized by the Petitioner under an application for LTA made by Respondent No.1 whereunder, it has been approved that power is to be evacuated through the 400 kV D/c Mahan-Sipat transmission line terminating at WR pooling station at Bilaspur in Chhattisgarh. The said transmission line is being executed by Respondent No.2, which is a group company of Respondent No.1, after being granted a transmission license by the Commission on 29.4.2008 to develop the following transmission lines and sub-stations:

- (i) 400 kV D/c Mahan-Sipat transmission line alongwith associated terminal bays;
- (ii) LILO of 400 kV S/c Vindhyachal-Korba transmission line at Mahan;
- (iii) 400 kV D/c Gandhar-Hazira transmission line alongwith associated bays; and
- (iv) 400/220 kV sub-station at Hazira.

4. Out of the above, the transmission lines and sub-stations at (ii) to (iv) have been commissioned and are in operation whereas the 400 kV D/c Mahan-Sipat



transmission line alongwith associated bays is yet to be completed. Power evacuation from the generating station of Respondent No.1 is currently taking place through the LILO of 400 kV S/c Vindhychal-Korba transmission line.

### **Submission of Petitioner**

5. The Petitioner has submitted that the following facts have led to the filing of the present Petition:

(a) In certain cases where the generation projects are expected to come up earlier than the planned evacuation system, interim arrangement through LILO of existing line is planned to facilitate connection of generator to the grid till final systems, in consultation with stakeholders, namely, CEA, regional constituents and the RLDCs, are put in place. The grant of connectivity through interim LILO arrangement has been examined by the Commission in Petition No.30/MP/2014 filed by National Load Despatch Center where the Commission vide Order dated 28.9.2016 has recognized the requirement of LILO arrangement as under:

*“24. ....Thus the Connectivity Regulations provide for granting connectivity by looping in and looping out of an existing or a proposed transmission line if after interconnection study, it appears to the nodal agency that loop in and loop out is the best option to develop an efficient, coordinated and economical inter-State transmission system for transmission of power from the generating station to the load centre.”*

(b) The nature of such LILO arrangement, whether temporary or permanent, has also been examined by the Commission in the same order and is given as under:

*“25. It is noticed that loop in loop out arrangement for connectivity may be permanent or temporary in nature. Where LILO has been planned on account of technical reasons including optimum utilisation of the assets, then connectivity on the said LILO is a part of the planning and shall continue as a permanent feature. If the LILO has been planned as a temporary measure i.e. where generation is likely to be commissioned ahead of the commissioning of the dedicated transmission line which is affected by such events as ROW issues and delay in forest clearance, then CTU may grant conditional connectivity to the generators with a clear-cut timeline for commissioning of the dedicated transmission line and removal of the LILO. The Commission vide order dated 16.2.2015 in Petition No. 92/MP/2014 has deliberated the issue of grant of LTA on LILO as under:*

*“93. We are of the view that LTA on LILO shall be allowed if the LILO arrangement has been considered at the planning stage. In other cases, LTA may be allowed by CTU on LILO as a temporary measure due to delay on*



*account of reasons like RoW, forest clearance, etc, till the time originally planned system becomes available, subject to the system studies carried out by CTU establishing that grant of LTA on LILO will not affect system security.”*

.....  
27. *Though the generator can be accommodated for grant of connectivity through LILO for a genuine reason and in exceptional circumstances, it appears that CTU is accommodating all requests in a routine manner.....”*

(c) Thus, the Commission has observed that a LILO arrangement, though generally temporary in nature, can also be a permanent feature of connectivity if technical reasons so demand and/or if genuine reasons for the same exist. The Commission has directed review of all interim LILO arrangements and continuance of any LILO arrangement has been directed to be conditional upon examination/ approval of the concerned RPC. Accordingly, pending completion of the 400 kV D/c Mahan-Sipat transmission line, Respondent No.1 has been approaching Respondent No.3 (WRPC) for allowing the interim arrangement through LILO for power evacuation.

(d) Respondent No.1 has also filed Petition No.127/MP/2017 before the Commission seeking a direction to use the interim LILO connectivity till January, 2018 together with a direction to the Petitioner not to take any steps towards disconnection without the permission of the Commission or till the decision of Respondent No.3. Vide Order dated 30.6.2017 passed in the said Petition, the Commission has directed as under:

*“14. .... Accordingly, we direct WRPC to consider the request of the Petitioner and take a decision by 5.7.2017 as regards the timeline for opening the interim LILO arrangement. Till a decision is taken by WRPC which cannot be later than 5.7.2017, status quo shall be maintained. CTU shall take necessary action for disconnection of the LILO arrangement as per the timeline set by WRPC.”*

(e) In the meantime, the issue as regards extension of LILO arrangement for power evacuation from the project of Respondent No.1 has been considered in the Meeting dated 28.6.2017 at CEA wherein the following has been recorded:

*“7. M/s ESSAR representative also stated that with existing LILO of Vindhyachal-Korba STPP 400 kV S/C line at Mahan STPS, no overloading or grid security issue has been observed. The LILO would also help in charging of Mahan STPS-Bilaspur Pooling Station 400 kV D/C line. Without the LILO arrangement, Mahan generating station would be connected radially to the grid through 337 KM long line. Without LILO, outage of one circuit of Mahan STPS-Bilaspur Pooling Station 400 kV D/C line would result in massive voltage &*



power swings and angular instability at Mahan TPS. Therefore, it is desirable to retain the LILO arrangement even after completion of Mahan STPS-Bilaspur Pooling Station 400 kV D/C line from security and stability of Mahan TPS machines and grid as whole.

.....

9. CTU informed that system studies carried out by them also indicate the requirement of another anchoring of Mahan TPS apart from Mahan-Sipat Pooling point 400 kV D/C line. The summary of the studies carried out by CTU is given below:

**a) Case-1: Without Mahan STPS-Sipat pooling station 400 kV D/C line**

i) With one unit of 600 MW in service at Mahan STPS – No instability/oscillations observed in power evacuation under n-1 condition.

ii) With both units of 600 MW in service - Rotor angle instability of Mahan STPS units as well as sustained grid oscillations are observed under outage of Mahan STPS -Vindhyachal 400 kV SIC line. With tripping of one unit through SPS (within 450 ms), the system remains stable.

**b) Case-2: With only Mahan STPS-Bilaspur Pooling Station 400 kV D/C line**

i) With one unit of 600 MW in service at Mahan STPS - No instability/oscillations observed in power evacuation under n-1 condition.

ii) With both 600 MW units in service at Mahan STPS - Grid instability issues (oscillations) are observed under N-1 conditions of the line. With tripping of one unit through SPS (within 300 ms), the system remains stable.

**c) Case-3: With both lines i.e. LILO of Vindhyachal –Korba STPP 400 kV S/C line at Mahan STPS and Mahan STPS–Bilaspur Pooling Station 400 kV D/C line)**

i) With one unit of 600 MW in service at Mahan STPS - No instability/oscillations observed in power evacuation under n-1 condition.

ii) With both 600 MW units in service at Mahan STPS - Power can be reliably evacuated from both units of Mahan TPS. Issue of increase in short circuit level at Vindhyachal due to both the lines needs to be studied in detail.

Thus from the above it is seen that there is requirement of LILO of Vindhyachal Korba STPP 400 kV S/C line at Mahan STPS in addition to Mahan STPS–Bilaspur Pooling Station 400 kV D/C line for safe and reliable evacuation of power from Mahan STPS. ....

10.CEA stated that the transmission licence given by CERC, inter alia, includes elements, which are part of generation switchyard and with the grant of transmission license to M/s EPTCL, the status of the entire evacuation system from Mahan STPS has been changed from dedicated system (to be built by generation developer) to ISTS (being implemented by TSP M/s EPTCL). Further, system studies carried out by POWERGRID also indicate there is a technical requirement of additional anchoring of Mahan TPS with grid apart from Mahan TPS-Sipat Pooling station 400 kV D/C line.”

(f) Thus, the Petitioner, Respondent No.1 and the CEA have acknowledged in the said Meeting that as per system studies, there is a technical requirement for continuing with the present temporary LILO arrangement for power evacuation from the project of Respondent No.1 even



after the 400 kV D/c Mahan-Sipat transmission line is commissioned.

Accordingly, the following has been agreed in the said Meeting:

*“12. After further discussion, following was decided:*

*i) The transmission system for evacuation of power from M/s EPMPPL generation plant at Mahan is now an ISTS system being implemented by M/s EPTCL (ISTS Transmission Licensee) and not a dedicated transmission system of generation developer. As such LILO of Vindhyachal-Korba STPP 400 kV S/C would not be an interim arrangement. This change would be brought to the notice of constituents in the next meeting of SCPSPWR.*

*ii) The system studies indicate that the Lilo of Vindhyachal- Korba STPP 400 kV S/C line at Mahan STPS would also be essential to take care of contingency of outage of one ckt of Mahan SPTS-Bilaspur Pooling Station 400 kV D/C line for reliable evacuation of power from 2x600 MW units of Mahan TPS.*

*iii) M/s EPTCL has agreed to complete the remaining works of Mahan STPS–Bilaspur Pooling Station 400 kV D/C line by December 2017.”*

(g) In the 42<sup>nd</sup> Meeting of Standing Committee on Power System Planning of Western Region held on 17.11.2017, the temporary LILO arrangement for Respondent No.1 has been discussed as under:

*“8.4. CTU stated that from system studies, it was observed that with opening of the LILO, oscillations were observed at Essar Mahan Generators under n–1 contingency of 400 kV Essar Mahan– Bilaspur PS D/C line. The matter was discussed in the above mentioned meeting at CEA on 28.06.2017, wherein it was discussed that continuation of LILO of Korba–Vindhyachal 400 kV at Essar Mahan is also required from system point of view. CTU further stated that in view of the above facts, LTOA for transfer of 450MW from EPMPPL to M/s Essar Steel India Limited (ESIL), Hazira located in Gujarat (WR) for which PPA has already been signed between M/s EPMPPL and M/s ESIL has been operationalized w. e .f. 01.10.2017. The same has facilitated reduction in the PoC burden on the other DICs and hence has benefitted the constituent states of WR.*

*8.5. WRLDC representative intimated that M/s Essar Mahan has been injecting power through the LILO of 400 kV Korba – Vindhyachal S/C line at Essar Mahan switchyard under STOA for last three years, which is endangering the grid security. Further, the transmission license was granted for implementation of the above scheme in 2009, however, till date the progress of Essar Mahan– Bilaspur PS 400 kV D/C line is not satisfactory. Hon’ble CERC in its various orders had mentioned the above LILO as an interim arrangement and till date none of the respondents including M/s Essar Mahan / EPTCL had brought this to the notice of Hon’ble CERC.*

*8.6. WRPC representative stated that as per the decision of 41st meeting of SCPSPWR, the matter (regarding the extension of interim connectivity) was already referred to WRPC for further necessary action. WRPC in its 33rd meeting held on dated 01.02.2017 allowed / extended above LILO up to June, 2017 and in its 34th meeting of WRPC the above LILO was allowed till, September, 2017 and recently WRPC extended the above up to December 2017. There is a gap between the document / information furnished by M/S EPMPPL / EPTCL to CEA / CTU and WRPC / WRLDC. Hon’ble CERC vide its*



letter dated 10.10.2017 had requested WRPC to take weekly progress regarding the implementation of dedicated transmission line of ESSAR Mahan i.e. Essar Mahan–Bilaspur PS 400 kV D/C line and the same is under close monitoring. The above issue would be taken up in the upcoming WRPC meeting.

8.7. CEA stated that, in line with the decision taken in the meeting held in CEA on 28.06.2017, this agenda has been included to inform the WR constituents regarding the changes in the evacuation system of the Essar Mahan.”

(h) Thereafter, in the 35<sup>th</sup> Meeting of Western Regional Power Committee of Western Region held on 20.12.2017, the following was decided after detailed deliberations on the LILO arrangement of Respondent No.1:

“WRPC decided the following;

(i) M/s Essar Mahan may approach CERC if they want extension to the interim LILO arrangement beyond 20.01.2018.

(ii) In absence of extension order from CERC by the deadline of 20.01.2018, the interim LILO shall be disconnected by WRLDC without coming to WRPC.

(iii) If CERC gives an interim order before 20.01.2018 on the petition to be filed by M/s Essar Mahan seeking extension for the interim LILO arrangement, the WRP Committee authorized the Chairman WRPC to take decision as per the directives in the interim order and inform WRPC in next meeting (36<sup>th</sup> WRPC).”

(i) The Respondent No.1 has thereafter filed yet another Petition before the Commission [being Petition No.10/MP/2018] in line with the decision of the 35<sup>th</sup> WRPC Meeting held on 20.12.2017 seeking the following reliefs:

“(b) In view of WRPC direction to approach the Hon`ble CERC immediately for getting further direction on the issue of continuation/discontinuation of interim LILO arrangement of 400 k V Vindhyachal-Korba circuit beyond 20.1.2018, it is prayed that the Hon`ble Commission may pass appropriate orders in the matter;

(c) Direct the appropriate authority to declare that the LILO of the Vindhyachal-Korba D/C line (which is ISTS) at Mahan as a permanent element in light of the above mentioned technical requirements;

(d) Pending decision of the WRPC direction CTU to not take any coercive steps for opening the LILO;”

(j) The Commission has decided the above Petition (10/MP/2018) vide Order dated 19.1.2018 in which it has noted that the CEA in the Meeting dated 28.6.2017 has concluded that LILO arrangement is required to be retained even after commissioning of the 400 kV D/c Mahan-Sipat transmission line. The Commission has further directed in the said Order as under:

“10. Keeping in view the decision in the minutes of the meeting in CEA held on 5.1.2018, we direct the Petitioner to ensure completion of the Mahan-Sipat line by 31.3.2018. Till that time, status quo shall be maintained. If the transmission line is not commissioned by the Petitioner on or before 31.3.2018,





CTU shall take immediate necessary action for disconnection of the LILO arrangement with effect from 1.4.2018.

.....

12. The Petitioner has also prayed to direct appropriate authority to declare that the LILO of the Vindhyachal-Korba D/C line at Mahan as a permanent element. In this order, we are concerned with the completion of 400 kV D/C Mahan-Sipat transmission line by 31.3.2018 failing which the LILO shall be opened by CTU on 1.4.2018. In case, CTU wants to continue with the LILO beyond 31.3.2018, CTU shall approach the Commission well before 31.3.2018 with proper justification.”

- (k) Thus, the Commission has directed the Petitioner,
- (i) to take necessary action for disconnection of LILO arrangement with effect from 01.04.2017 for Respondent No.1 in case 400kV D/c Mahan – Sipat line is not commissioned on or before 31.3.2018;
  - (ii) in the event that the LILO arrangement is required to be continued beyond 31.3.2018, the Petitioner is to approach the Commission with proper justification.
- (l) Based on the discussions in the joint Meeting dated 28.6.2017 with the CEA and the system studies conducted, the following scenario emerges as regards power evacuation from the project with and without the LILO arrangement of Respondent No.1:

Case ID	Case Description	Observations with 1x600 MW unit in service at Mahan STPS	Observations with 2x600 MW units in service at Mahan STPS
1	Without Mahan STPS-Sipat pooling station 400 kV D/c line	No instability / oscillations observed in power evacuation under n-1 condition.	Rotor angle instability of Mahan STPS units as well as sustained grid oscillations are observed under outage of Mahan STPS - Vindhyachal 400 kV S/c line. With tripping of one unit through SPS (within 450 ms), the system remains stable.
2	With only Mahan STPS-Sipat 400 kV D/c line	No instability / oscillations observed in power evacuation under n-1 condition.	Grid instability issues (oscillations) are observed under N-1 conditions of the line. With tripping of one unit through SPS (within 300 ms), the system remains stable.
3	With both lines i.e. LILO of one ckt of Vindhyachal - Korba STPP 400 kV D/c line at Mahan STPS and Mahan STPS-Sipat 400 kV D/c line	No instability / oscillations observed in power evacuation under n-1 condition.	Power can be reliably evacuated from both units of Mahan TPS. <u>Issue of increase in short circuit level at Vindhyachal due to both the lines needs to be studied in detail.</u>

- (m) In view of the observations/system studies discussed in the above meeting, it is evident that for reliable evacuation of power from 2x600 MW units



of Mahan TPS after commissioning of Mahan TPS–Bilaspur Pooling Station 400 kV D/c line (under full dispatch condition), the LILO of Vindhyachal–Korba STPP 400 kV S/c line at Mahan TPS, will help to take care of oscillations observed in the grid under outage of one ckt of Mahan SPTS–Bilaspur Pooling Station 400 kV D/c line. However, the issue of high fault contribution from Mahan TPS towards Vindhyachal STPS complex is required to be studied in detail. The same was also been noted in the minutes of the 42<sup>nd</sup> Standing Committee Meeting for Power System Planning in Western Region held on 17.11.2017.

(n) Considering the grid stability and security, in case the dedicated line by Respondent No.1 is completed by 31.3.2018, the LILO of Vindhyachal–Korba STPP 400 kV S/c line at Mahan TPS may be continued beyond 31.3.2018. To address the issue of high fault current in Vindhyachal complex on account of LILO of Vindhyachal – Korba 400kV S/c line at Mahan TPS, suitable alternatives (if any) as identified through additional system studies to be carried out in consultation with the Central Electricity Authority and other stakeholders in the Western Region would be finalized. Further, in case of failure of Respondent No.1 in achieving commissioning of the 400 kV D/c Mahan-Sipat transmission line alongwith associated bays by 31.3.2018, the Petitioner would be constrained to take action for disconnection of the LILO of 400 kV Vindhyachal-Korba S/c transmission line at Mahan TPS on 1.4.2018 (00:00 hrs) in terms of the direction issued by the Commission's vide Order dated 19.1.2018 passed in Petition No.10/MP/2018. In this regard, Respondent No.1 has also been directed by the Commission to submit fortnightly progress reports of the execution of the 400kV Mahan-Sipat D/c transmission line. In response to a communication dated 14.2.2018 of Respondent No.1, the direction of the Commission has been reiterated to it vide letter dated 14.3.2018 of the Petitioner. In the eventuality of Respondent No.2 commissioning the 400 kV D/c Mahan-Sipat transmission line at a date later than 31.03.2018, then subject to the Commission's directions in this regard, the LILO of Vindhyachal–Korba STPP 400 kV S/c line at Mahan STPS may be permitted from such later date. The provision of LILO in such case may also be till finalization of suitable alternatives (if any) to be identified through system studies.



### **Additional Information submitted by the petitioner**

6. The Petition was admitted on 20.12.2018 and the Commission issued notice to the Respondents. In response, Respondent No. 6, MPPMCL has filed its reply vide affidavit dated 5.3.2019. Rejoinder to the said reply has been filed by the Petitioner vide affidavit dated 26.3.2019.

7. The Commission vide record of proceedings dated 20.12.2018 had directed the Petitioner to submit the following information on affidavit and in response, the Petitioner vide affidavit dated 11.1.2019 has submitted the point-wise information as under:

**(a) System studies, if any, conducted after the commissioning of the 400 kV D/C Mahan-Sipat Line regarding the technical requirement of the LILO of 400 kV D/C Vindhyachal-Korba Transmission Line at Mahan TPS**

a. Regarding the above query, the Petitioner has submitted that the system studies have been carried out upon commissioning of 400kV Mahan – Sipat D/c line. However, to simulate the worst scenario, full despatch from Mahan TPS (1200MW) has been considered along with the subject transmission line both with and without the LILO arrangement. The same was discussed in a meeting held on 28.6.2017 chaired by Member (PS), CEA amongst CEA, CTU, WRPC & Essar Power regarding extension of interim connectivity of Essar Mahan MP Ltd. In the meeting, following was decided:

*“12. After further discussion, following was decided:*

*(i) The transmission system for evacuation of power from M/s EPMPPL generation plant at Mahan is now an ISTS system being implemented by M/s EPTCL (ISTS Transmission Licensee) and not a dedicated transmission system of generation developer. As such LILO of Vindhyachal–Korba STPP 400 kV S/C would not be an interim arrangement. This change would be brought to the notice of constituents in the next meeting of SCPSPWR.*

*(ii) The system studies indicate that the LILO of Vindhyachal–Korba STPP 400kV S/c line at Mahan STPS would also be essential to take care of contingency of outage of one circuit of Mahan SPTS–Bilaspur Pooling Station 400 kV D/C line for reliable evacuation of power from 2x600 MW units of Mahan TPS.*

*(iii)...*”



b. The Petitioner has submitted that detailed study report was also discussed in the 34<sup>th</sup> WRPC meeting. The above was also noted in the 42<sup>nd</sup> SCMPSP of WR.

**(b) Minutes of WRPC meeting when the LILO has been agreed to be retrieved due to technical studies**

The Petitioner has submitted that in the WRPC forum, the matter regarding extension of the LILO arrangement till the commissioning of Mahan TPS – Sipat 400kV D/c line was discussed. WRPC has provided extensions to opening of the LILO of Vindhyachal–Korba STPP 400 kV S/c line at Mahan TPS in its various meetings based on visible progress of construction of Mahan TPS – Sipat 400kV D/c line.

**(c) The reasons for high fault current in Vindhyachal complex and possible steps to mitigate the same, circumstances leading to interim arrangement to become final and why it was interim earlier.**

a. The Petitioner has submitted that the high fault current at Vindhyachal TPS is due to significant fault contribution from various generation projects in Vindhyachal/Korba complex which are directly connected at 400kV level as well as from Mahan TPS (2x600MW). Possible steps to mitigate the high fault level at Vindhyachal complex may involve re-arrangements at 400kV Vindhyachal bus and/or its surrounding buses so that fault contribution to Vindhyachal bus is minimized from adjoining buses. Suitable alternatives as identified through such system studies shall be finalized in consultation with CEA & other stakeholders in the Western Region.

b. The Petitioner has submitted that the following transmission system for Mahan TPS was agreed in the 27<sup>th</sup> meeting of Standing Committee on Power System Planning of Western Region (SCPSPWR) / 9<sup>th</sup> meeting of WR constituents on LTOA held on 30.07.2007 to be built, owned, operated and maintained by M/s Essar Power MP Ltd. in order to interconnect the generation project & the drawal point at Hazira with WR grid:

- (i) Mahan STPS-Sipat (Bilaspur Pooling Station) 400 kV D/C (triple moose conductor) line (along with 2x50MVAR line reactors at both ends)
- (ii) Gandhar NTPC – Hazira 400 kV D/C (twin moose) line



(iii) Establishment of 400/220kV, 3x500MVA substation at Hazira 400/220 kV S/s

c. It was also agreed that till the commissioning of above transmission elements, connectivity of Mahan TPS with WR Grid may be provided by LILO of one circuit of 400 kV line between Vindhyachal and Korba STPS at Mahan TPS, which shall be carried out by M/s Essar Power M.P Ltd. and power transfer from Mahan TPS may be effected on short term basis. Accordingly, as per the LTA intimation dated 01.8.2012 (revised), the LILO of one circuit of Vindhyachal – Korba STPP 400kV D/c line at Mahan TPS was to be removed and restored to original configuration by M/s EPMPPL at its own cost as a prerequisite for start of LTA.

d. CERC vide order dated 15.9.2009 granted transmission license to M/s Essar Power Transmission Company Ltd. (EPTCL) for the three transmission elements at (i) to (iii) at sub-paragraph (b) above including interim arrangement i.e. LILO of one circuit of 400 kV line between Vindhyachal and Korba STPS at Mahan TPS.

e. In a meeting held on 28.6.2017 chaired by Member (PS), CEA amongst CEA, CTU, WRPC & Essar Power, it was noted that the transmission licence given by CERC, *inter-alia*, includes elements, which are part of generation switchyard and with the grant of transmission license to M/s EPTCL, the status of the entire evacuation system from Mahan STPS has been changed from dedicated system (to be built by generation developer) to ISTS (being implemented by TSP M/s EPTCL). Further, system studies also indicate that there is a technical requirement of additional anchoring of Mahan TPS with grid apart from Mahan TPS-Sipat Pooling station 400 kV D/C line. After deliberations in the meeting, it was decided that the transmission system for evacuation of power from Mahan TPS is now an ISTS system being implemented by M/s EPTCL (ISTS Transmission Licensee) and not a dedicated transmission system of generation developer. As such, the LILO of Vindhyachal–Korba STPP 400 kV S/C would not be an interim arrangement. The above was brought to the notice of all the WR constituents in the 42nd WR SCM held on 17.11.2017.



**(d) Were system studies conducted while planning and was concluded that LILO should be interim.**

a. The Petitioner has answered in the affirmative and submitted that studies were conducted and various alternatives were evolved in the 9th meeting of WR constituents on LTOA held on 30.07.2007 considering injection of 1200MW power from Mahan TPS to WR grid. It was deliberated that a number of generation projects are proposed to come up in the same complex (MP/Chhattisgarh) in almost the same time frame. Accordingly, it was decided to develop a 765/400kV WR pooling station near Sipat & other associated system strengthening works for injection of power from Mahan TPS. However, the exact location of the proposed WR Pooling station was not known at the planning stage.

b. It was also deliberated that development of 400/765kV Pooling station and other strengthening works may require long time and it may be difficult to complete these works before the commissioning of Mahan TPS generating unit. In view of the above, it was decided that to facilitate grid connectivity of Mahan generation project, initially, LILO of one circuit of 400 kV line between Vindhychal and Korba STPS may be carried out at Mahan TPS by M/s Essar Power M.P Ltd. and power transfer may be carried out on short-term basis depending upon transmission capacity availability. However, on the completion of the transmission system identified for LTA, the above LILO arrangement of Vindhychal-Korba line at Mahan TPS shall be removed and the line shall be restored in its original configuration by M/s Essar Power at their cost.

**(e) The current status of 400 kV D/C Mahan-Sipat Line in terms of any technical difficulty viz. oscillations, etc. and details thereof.**

The Petitioner has submitted that the information is related with system operation and the same has been sought from WRLDC. Petitioner vide affidavit dated 4.2.2019 has submitted the WRLDC reply received on its operational experience after commissioning of 400kV Mahan-Bilaspur D/C lines. As per the report, where LILO and 400kV Mahan-Bilaspur D/C has been connected, no oscillations have been observed under n-1 conditions.



(f) ***Whether LILO has been removed?***

The Petitioner has submitted that the LILO arrangement continues.

8. Petitioner vide affidavit dated 27.2.2019 has filed amended memo of parties and has impleaded MPPMCL as party to the petition.

**Reply of MPPMCL**

9. The Respondent No. 6, MPPMCL vide its reply affidavit dated 5.3.2019 has submitted that

***A. Present petition of petitioner is directly and indirectly supporting the willful delay caused by Respondent No.2 in commissioning of transmission lines***

(a) 400 kV D/c Mahan-Sipat transmission line terminating at WR Pooling Station at Bilaspur is being executed by Essar Power Transmission Company Limited (EPTCL) i.e. Respondent No.2. It has received the board approval on 21.12.2006 and Transmission License on 10.4.2008. The SCOD was 15.7.2011 for the assets of Stage I & Stage II. However, Respondent No.2 could commission the Assets of Stage I only on 1.4.2013 after delay of 24 months and Assets of Stage II have not been completed till date.

(b) In minutes of 35th TCC/WRPC meeting on 20.12.2017 held at Jabalpur, MP, Respondent No.2 had clearly admitted that they will be able to complete the commissioning of Asset II by 30.4.2018. In Petition no. 145/TT/2018 filed by Respondent No.2 for determination of Transmission tariff, it was stated that they would be commissioning the Assets of Stage II by 31.1.2018.

(c) In petition no. 10/MP/2018 filed by Respondent No.1 and 2, they have submitted before Commission in affidavit that they would be able to commission the entire Transmission Assets of project of 400 kV D/c Mahan-Sipat transmission line by 31.03.2018. In the petition 10/MP/2018, Respondent No.1 and 2 had mainly prayed and sought direction 1) for extension of interim LILO arrangement of 400 kV Vindhyachal Korba circuit till 31.3.2018 by which time Respondent No.2 would be completing the 400 kV D/c Mahan-Sipat



transmission line and 2) to declare that LILO on Circuit 1 of the Vindhyachal-Korba D/C Line at Mahan is not an interim LILO but is a permanent LILO. However, Commission vide its order dated 19.1.2018 has only granted the extension of use of LILO on Circuit 1 of the Vindhyachal- Korba D/C Line at Mahan and rejected the prayer for declaration of LILO on Circuit 1 of the Vindhyachal- Korba D/C Line at Mahan as a permanent element while directing the Petitioner/CTU for opening of the LILO on S/C at Mahan on Vindhyanchal Korba D/C Line for its original purpose and use.

(d)The Respondent No.1 and 2, in DFR No. 1052 of 2018 before the Appellate Tribunal for Electricity (APTEL) challenged the legality and validity of Order dated 19.01.2018 passed in petition No. 10/MP/2018 by the Central Electricity Regulatory Commission and sought the direction of APTEL as under:

“(a) Set aside the impugned order dated 19.01.2018 passed by the Respondent Commission to the extent it directs opening of the LILO on S/C at Mahan on Vindhyanchal Korba D/C Line.

(b) Declare that the LILO on S/C at Mahan on Vindhyachal Korba D/C Line is a permanent element and cannot be disturbed.”

(e)APTEL on above prayers vide Order dated 27.3.2018 has directed as follows:

“10. In the light of the submissions made by the learned counsel appearing the Appellant and the learned counsel appearing for the Respondent Nos. 1 & 4 and the statement made in the undertaking affidavits filed on behalf of the Appellant and the fourth Respondent, as stated above, and for the reasons stated therein, we hereby modify the Impugned Order dated 19.01.2018 passed in Petition No. 10/MP/2018 on the file of the Central Electricity Regulatory Commission, New Delhi extending the time for commissioning of Mahan-Sipat Line as expeditiously as possible at any rate within a period upto 30.06.2018 without fail. It is needless to clarify that no further extension will be entertained.

11. Regarding prayer (b) i.e. Declare that the LILO on S/C at Mahan on Vindhyachal Korba D/C Line is a permanent element and cannot be disturbed, the liberty has been reserved to the Appellant to redress their grievance before the appropriate Legal Forum.”

(f) Respondent No. 1 & 2 has undertaken to complete the commissioning of Stage II of the assets by 30.06.2018 as extended by APTEL vide its order dated 27.03.2018. APTEL while relying upon the undertaking of Respondent No 1 & 2, had only granted an extension to commission the 400 kV D/c Mahan-Sipat transmission line and rejected all the prayers of Respondent No. 1 & 2. APTEL has reaffirmed the judgements and order of the Commission dated





19.1.2018 passed in petition no 10/MP/2018. APTEL has also strictly stated that use of LILO on S/C at Mahan on Vindhyanchal Korba D/C Line shall be kept open for all.

(g) However, till date Respondent No.2 is not able to achieve commissioning of Stage II of the assets and also LILO line of Stage I continues as on date without any valid and subsisting reasons, which clearly shows its mala-fide intentions. Respondent No.1 & 2 have failed in commissioning of 400 kV D/c Mahan-Sipat transmission line and also failed in their attempt to get declaration from Commission and APTEL to declare LILO on S/C at Mahan on Vindhyanchal Korba D/C Line a permanent element. CERC and APTEL have clearly stated that LILO on S/C at Mahan on Vindhyanchal Korba D/C Line is a temporary connectivity and same cannot be disturbed. Similarly, CERC in order dated 28.09.2016 in petition no 30/MP/2014 had asked to review the connectivity of LILO lines of defaulter generators and ISTS licensees who have willfully defaulted and neglected to commission their transmission lines and take strict action against them and penalize them.

(h) The present petition is an attempt of Petitioner to re-open the same issues which have been settled by CERC and APTEL. The present Petition is directly in teeth of order passed by CERC in petition no 10/MP/2018 and judgment passed by APTEL in DFR no 1052 of 2018.

(i) The Petitioner's contentions supporting Respondent No.2 & 1 for extension of use of LILO of Vindhyanchal – Korba STPP 400 kV line at Mahan STPS is not only illegitimate and bad in law but also prejudice to larger public interest as it will put extra burden of POC charges on MPPMCL and is an attempt of illegal enrichment to private parties.

***B. Present petition is misleading: before granting STOA or LTOA to Respondent No.1, Petitioner being CTU has already completed the system studies***

(a) The basic requirement for granting LILO connectivity is planning along with technical reasons before developing the LILO. The planning and technical studies for development of LILO on S/C at Mahan on Vindhyanchal Korba D/C Line was not for the sole purpose of evacuation of power from Respondent



No.1's generation plant but it was also planned to accommodate system contingencies, take care of contingency of outage and power evacuation from other Sub-stations including Mahan SPTS–Bilaspur Pooling Station 400 kV D/C line for reliable evacuation of power and for the smooth functioning of Grid. To evacuate the power from Respondent No.1's generating plant at Mahan, MP, Respondent No.2 has been developing the 400 kV D/c Mahan-Sipat transmission line.

(b) In terms of CERC Connectivity Regulations, 2009, it is necessary that before grant of temporary LILO connectivity by CTU (Petitioner), transmission system capacity should be assessed by CTU to determine whether the transmission system can accommodate such inter-connection without compromising security and reliability of the grid. Thus, before granting the temporary connectivity of LILO on S/C at Mahan on Vindhyachal-Korba D/C Line, Petitioner would have considered this aspect. As per Regulation 8(2) of Connectivity Regulation, 2009 nodal agency is required to process the applications in consultation with other agencies involved in inter-state Transmission System and STU and to carry out the necessary inter-connection study specified in the CEA (Technical Standards for Connectivity to the Grid) Regulations 2007.

(c) Respondent No.1 & 2 are not able to complete the 400 kV D/c Mahan-Sipat transmission line in time. In such a case, the beneficiaries should not be over burdened with the additional PoC charge of LILO on S/C at Mahan on Vindhyachal-Korba D/C Line.

***C. Connectivity of LILO on S/c at Mahan on Vindhyachal-Korba D/c line is a temporary connectivity only***

(a) 400 kV D/c Mahan-Sipat transmission line which is being developed by the Respondent No.2 for the evacuation of power from its sister concern has been delayed. The reasons stated by Respondent No. 1 & 2 in various petitions and appeal filed by Respondent No.2 before CERC and APTEL are that delay was caused on account of reasons like RoW, forest clearance etc. CERC vide order dated 28.2.2018 passed in Review Petition no 33/RP/2016 has condoned the delay on account of RoW issue and partially condoned the delay due to



forest clearance. Grant of STOA by Petitioner to Respondent No.1 for evacuation of Power through LILO on S/C at Mahan on Vindhyachal-Korba D/C Line was solely due to the reason that the commissioning of 400 kV D/c Mahan-Sipat transmission line has been delayed by Respondent No.2 on account of RoW and forest clearance. CERC in order dated 28.9.2016 passed in petition no. 30/MP/2014 has explained the detailed reasoning for grant of LILO for temporary purpose.

***D. Petitioner is trying to hide its inefficiency and non-compliance of CERC's directions***

(a) As Petitioner has failed to comply with the directions of CERC passed in 30/MP/2014 that no firm power shall be injected in LILO lines and even if, Regional Power Committee is permitting such injection, it must not exceed more than 3 months. The Petitioner is trying to cover-up its willful negligence in duty through the present Petition. From the observation of CERC in the order dated 28.9.2016, it is clear that the Commission has directed the Petitioner to grant the temporary LILO connectivity to Respondent No.1 and others for only limited purpose and also penalize them for non-commissioning of Transmission line. However, the Petitioner has failed to comply with the directions of CERC. In view of aforesaid, present Petition is liable to be dismissed.

**Rejoinder of Petitioner**

10. The Petitioner in its rejoinder dated 26.3.2019 has submitted the following

(a) One of the conditions for LTA grant for power evacuation from Mahan TPS had been that till the commissioning of the dedicated system and also the commissioning of the identified system strengthening to be undertaken by the Petitioner, connectivity of the generating station was to be provided through LILO of one circuit of 400 kV line between Vindhyachal and Korba STPS at Mahan TPS and power was to be evacuated from Mahan TPS through the said LILO on short-term basis. The said LILO was to be removed on completion of the dedicated / identified transmission system and the line was to be restored to its original configuration after which the LTA for transfer of power to project beneficiaries would be provided.



(b) The execution of the dedicated system was undertaken by Respondent No.2, after being granted a transmission license by Commission on 29.4.2008. In the meantime, unit-1 of the generating station achieved commercial operation on 29.4.2013 and power evacuation began through the LILO arrangement on short-term basis. Unit-2 was there after synchronized on 4.8.2017. However, since the load was increased to 300 MW and thereafter, due to load restriction on LILO at single circuit of 400 kV Vindhyachal - Korba line, full load testing could not be undertaken for Unit-2. During this period, the 400 kV D/c Mahan TPS-Sipat (Bilaspur Pooling Station) transmission line alongwith associated bays was yet to be completed by Respondent No.2. As such, power evacuation from the generating station of the Respondent No.1 continued to take place through the LILO of 400 kV S/c Vindhyachal-Korba transmission line since 29.4.2013 under the Orders of the Commission as well as APTEL.

(c) Respondent No.6 is wrong in contending that the present Petition has been filed by the Petitioner with an attempt to indirectly and directly support Respondent No.1 and Respondent No.2's willful delay in completion of Mahan TPS – Sipat (Bilaspur Pooling Station) 400 kV D/c transmission line, despite repeated directions by this Commission to discontinue the use of the said LILO line. The issue as regards extension of LILO arrangement for power evacuation from the project of Respondent No.1 had been considered in the Meeting dated 28.6.2017 held with the CEA, the 42<sup>nd</sup> Meeting of Standing Committee on Power System Planning of Western Region held on 17.11.2017 and the 35<sup>th</sup> Meeting of Western Regional Power Committee held on 20.12.2017, in which it was concluded that LILO arrangement was required to be retained even after commissioning of the 400 kV D/c Mahan TPS – Sipat (Bilaspur Pooling Station) 400 kV D/c transmission line. Also, in the meeting dated 28.6.2017 held in CEA, it was decided that the transmission system for evacuation of power from M/s EPMPPL generation plant at Mahan is now an ISTS system being implemented by M/s EPTCL (ISTS Transmission Licensee) and not a dedicated transmission system of generation developer. Therefore, the status of the entire connectivity system of Mahan TPS (including LILO arrangement) had been changed from dedicated system to ISTS.



(d) In the meeting held on 28.6.2017, system studies also indicate that there is a technical requirement of additional anchoring of Mahan TPS with grid apart from Mahan TPS – Sipat (Bilaspur Pooling station) 400 kV D/C line. As such, the LILO of Vindhyachal – Korba STPP 400 kV S/C was not to be an interim arrangement. The above was brought to the notice of all the Western Region constituents in the 42<sup>nd</sup> Standing Committee Meeting held on 17.11.2017 to which Respondent No.6 was also a party.

(e) Accordingly, the PoC charges of the LILO line are to be borne by the DICs irrespective of the line remaining in service or not. Hence, the contention of Respondent No.6 that the beneficiaries should not be over-burdened with the PoC charge of LILO of Vindhyachal – Korba 400kV S/c line at Mahan TPS is devoid of any merit and is thus liable to be rejected.

(f) As regards the contention of Respondent No.6 that the Petitioner has failed to comply with the Order dated 28.9.2016 of this Commission passed in Petition No. 30/MP/2014 that the LILO lines are only for a limited purpose and generators are liable to be penalized for non-commissioning of the dedicated transmission lines, it is submitted that the said Order directed the Petitioner to:

*“take up all the existing cases of connectivity on interim LILO with the RPC of respective regions within a period of one month from the date of issue of this order for review and decision on disconnection of the interim arrangements through LILO. All such interim arrangements through LILO shall be disconnected within a period of three months of the issue of this order unless the RPC grants extension for continuation of LILO keeping in view of all relevant factors.”*

(g) The matter regarding progress of dedicated transmission lines of IPPs which were connected through interim arrangement in Western Region (including the dedicated line of Mahan TPS), was reviewed in the 41<sup>st</sup> SCM in WR held on 21.12.2016 and it was decided that the issues regarding connectivity on interim LILO need to be deliberated in the RPC forum. The matter was subsequently deliberated in subsequent WRPC meetings wherein the RPC forum granted extensions to opening the LILO of Vindhyachal – Korba STPP 400 kV S/c line at Mahan TPS, based on visible progress of construction of Mahan TPS – Sipat (Bilaspur Pooling Station) 400kV D/c line. Respondent No.6 was also a party to the above Meetings and hence was fully aware of the facts and circumstances in which the various extensions were provided. Thus, the contention of Respondent No.6 that the Petitioner has failed to comply with



the Order dated 28.9.2016 of the Commission passed in Petition No.30/MP/2014 is devoid of any merit and is thus, liable to be rejected.

### **Analysis and Decision**

11. The Petitioner, CTU, has contended that as per system studies conducted recently, there is a technical requirement for continuing with the present temporary LILO arrangement for power evacuation from the project of Respondent No.1 even after the 400 kV D/c Mahan-Sipat transmission line is commissioned. We note that this 400 kV Mahan TPS – Sipat transmission line was commissioned on 21<sup>st</sup> September, 2018.

12. Further, the petitioner has submitted that system studies also indicate that there is a technical requirement of additional anchoring of Mahan TPS with grid apart from Mahan TPS – Sipat (Bilaspur Pooling station) 400 kV D/C line. Hence, the Petitioner has prayed for continuation of LILO considering the grid stability and security. Petitioner has submitted the scenarios with or without LILO arrangement, as under:

<b>Case ID</b>	<b>Case Description</b>	<b>Observations with 1x600 MW unit in service at Mahan STPS</b>	<b>Observations with 2x600 MW units in service at Mahan STPS</b>
1	Without Mahan STPS-Sipat pooling station 400 kV D/c line	No instability/ oscillations observed in power evacuation under n-1 condition.	Rotor angle instability of Mahan STPS units as well as sustained grid oscillations are observed under outage of Mahan STPS -Vindhyachal 400 kV S/c line. With tripping of one unit through SPS (within 450 ms), the system remains stable.
2	With only Mahan STPS-Sipat 400 kV D/c line	No instability / oscillations observed in power evacuation under n-1 condition.	Grid instability issues (oscillations) are observed under N-1 conditions of the line. With tripping of one unit through SPS (within 300 ms), the system remains stable.
3	With both lines i.e.	No instability /	Power can be reliably



	LILO of one ckt of Vindhyachal - Korba STPP 400 kV D/c line at Mahan STPS and Mahan STPS-Sipat 400 kV D/c line	oscillations observed in power evacuation under n-l condition.	evacuated from both units of Mahan TPS. <u>Issue of increase in short circuit level at Vindhyachal due to both the lines needs to be studied in detail.</u>
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13. Per contra, the Respondent MPPMCL has submitted that CERC vide its Order dated 19.1.2018 in Petition No 10/MP/2018 and APTEL vide judgement dated 27.3.2018 in DFR no 1052 of 2018 have decided that LILO on S/C at Mahan on Vindhyachal Korba D/C Line is a temporary connectivity. It has stated that Petitioner's contentions supporting Respondent No. 1 & 2 for use of LILO of Vindhyanchal – Korba STPP 400 kV line at Mahan STPS as a permanent element is bad in law and against larger public interest and will put extra burden of POC charges on MPPMCL.

14. MPPMCL has also submitted that in terms of CERC Connectivity Regulations, 2009, it is necessary that before grant of temporary LILO connectivity by CTU (i.e. the Petitioner), transmission system capacity should be assessed to determine whether the transmission system can accommodate such inter-connection without compromising security and reliability of the grid.

15. We have considered the submission of the Petitioner and Respondents. The Commission vide RoP dated 20.12.2018, had raised a few queries and the same have been replied by the Petitioner.

16. The Commission vide RoP dated 20.12.2018 directed the Petitioner to submit system studies, if any, conducted after the commissioning of the 400 kV D/C Mahan-Sipat Line regarding the technical requirement of the LILO of 400 kV D/C Vindhyachal-Korba Transmission Line at Mahan TPS. The Petitioner has submitted that it has carried out system studies which was discussed during meeting held on



28.6.2017 at CEA with CTU, WRPC and Essar where it was concluded that the LILO of Vindhyachal- Korba STPP 400 kV S/C line at Mahan STPS would also be essential to take care of contingency of outage of one ckt of Mahan STPS-Bilaspur Pooling Station 400 kV D/C line for reliable evacuation of power from 2x600 MW units of Mahan TPS.

17. The Commission has also vide RoP dated 20.12.2018, asked the Petitioner to submit minutes of WRPC meeting when the LILO has been agreed to be retained due to technical studies. In response, the Petitioner has submitted minutes of meeting of 33<sup>rd</sup> WRPC held on 31/1/2017 – 1/2/2017. However, on perusal of such minutes we do not find any reference to technical studies.

18. We, however, note from the studies conducted by petitioner that when both the lines - LILO of one ckt of Vindhyachal - Korba STPP 400 kV D/c line at Mahan STPS and 400 kV D/c Mahan STPS-Sipat transmission line are in operation, the issue of increase in short circuit level at Vindhyanchal complex is likely and needs detailed study.

19. In response to another query of the Commission as to whether system studies that were conducted while planning for transmission system had concluded that LILO should be interim, the Petitioner has submitted that while conducting planning in 2007, 1200 MW power from Mahan TPS was considered and, it was decided to develop a 765/400kV WR pooling station near Sipat. However, the exact location of the proposed WR Pooling station was not known at the planning stage. The Petitioner has stated that it was also deliberated that development of 400/765kV Pooling station and other strengthening works may require long time and it may be difficult to complete these works before the commissioning of Mahan TPS generating





unit. In view of the above, it was decided that to facilitate grid connectivity of Mahan generation project, initially, LILO of one circuit of 400 kV line between Vindhyachal and Korba STPS may be carried out at Mahan TPS by M/s Essar Power M.P Ltd. and power transfer may be carried out on short-term basis depending upon transmission capacity availability. However, on the completion of the transmission system identified for LTA, the above LILO arrangement of Vindhyachal-Korba line at Mahan TPS shall be removed and the line shall be restored in its original configuration by M/s Essar Power at their cost.

20. From the above, we observe that LILO was allowed as interim connectivity by Petitioner keeping in view the delay in commissioning of Sipat pooling station. Thus, in the instant case, LILO was not considered as a permanent element at the Planning stage and that on completion of the transmission system identified for LTA, the above LILO arrangement of Vindhyachal-Korba transmission line at Mahan TPS was to be removed and the transmission line was to be restored in its original configuration.

21. On a query of the Commission regarding reasons for high fault current in Vindhyachal complex and possible steps to mitigate the same, the Petitioner has submitted that the high fault current at Vindhyachal TPS is due to a significant fault contribution from various generation projects in Vindhyachal/ Korba complex which are directly connected at 400kV level as well as from Mahan TPS and that suitable alternatives as identified through such system studies shall be finalized in consultation with CEA & other stakeholders in the Western Region. We observe that issue of high fault level has been raised by representative of NTPC during 34<sup>th</sup> WRPC meeting. However, Petitioner has not yet submitted any such studies even after almost more than two years have elapsed. We observe from the study



conducted by CTC in June 2017 that with LILO, fault level at Vindhyachal complex may reach 43 kA.

22. EPMPPL had earlier approached WRPC to seek extension of continuation of interim LILO. Thereafter, it approached CERC and APTEL. APTEL had granted time extension till 30.6.2018 to continue LILO. However, there is no further permission by any authority for continuation of LILO. We observe that despite that the LILO arrangement has been continued by the Petitioner and RLDC though 400 kV Mahan-Sipat D/C transmission line has been commissioned on 21.9.2018.

23. In the aforesaid petition before APTEL (DFR No. 1052 of 2018) wherein time for continuation of temporary LILO was granted up to 30.6.2018, Respondent No.1 had also prayed for declaration of the LILO on S/C at Mahan on Vindhyachal Korba D/C Line as a permanent element. However, the APTEL in its judgement dated 27.03.2018 has granted liberty to the Respondent No.1 (appellant therein) to redress their grievance before the appropriate Legal Forum.

24. On the issue of continuance of LILO, in a previous instance, the Commission in Order dated 16.2.2015 in Petition No. 92/MP/2014 has deliberated the issue of grant of LTA on LILO as under:

“93. We are of the view that LTA on LILO shall be allowed if the LILO arrangement has been considered at the planning stage. In other cases, LTA may be allowed by CTU on LILO as a temporary measure due to delay on account of reasons like RoW, forest clearance, etc, till the time originally planned system becomes available, subject to the system studies carried out by CTU establishing that grant of LTA on LILO will not affect system security. CTU has granted LTA on LILO to KMPCL under exceptional circumstances and after taking into consideration the grid security.”

25. Further, the Commission in Order dated 28<sup>th</sup> September, 2016 in Petition No. 30/MP/2014 has observed as under:

*“25. It is noticed that loop in loop out arrangement for connectivity may be permanent or temporary in nature. Where LILO has been planned on account of technical reasons*



*including optimum utilisation of the assets, then connectivity on the said LILO is a part of the planning and shall continue as a permanent feature. If the LILO has been planned as a temporary measure i.e. where generation is likely to be commissioned ahead of the commissioning of the dedicated transmission line which is affected by such events as ROW issues and delay in forest clearance, then CTU may grant conditional connectivity to the generators with a clear-cut timeline for commissioning of the dedicated transmission line and removal of the LILO.”*

26. In abovementioned orders, the Commission has observed and noted that the LILO can be temporary or permanent in nature. If the LILO has been planned on account of technical reasons including optimum utilisation of the assets, then connectivity on the said LILO being part of the planning process, can continue as a permanent feature.

27. On perusal of submissions of the Petitioner and Respondent MPPMCL and reply of the Petitioner to the queries of the Commission vide RoP dated 20.12.2018, we observe that though LILO was considered to be only a temporary element at inception, subsequent system studies suggest that the LILO may be continued as a permanent element in order to enhance grid stability. While hearing the plea of the Respondent 1 and 2 to make the LILO a permanent element, APTEL had granted liberty to Respondents 1 and 2 to approach appropriate legal forum vide its order dated 27.03.2018. The prayer of the Petitioner in this Petition is “.... *continuation of the LILO till finalization of suitable alternatives (if any) as may be identified through system studies to address the high short circuit level issue*”. Thus, the Petitioner is similar to that for which liberty was granted to the Respondents 1 and 2 by APTEL.

28. We observe that as per the current system studies done by the Petitioner, continuance of LILO may lead to increase in short circuit level at Vindhyanchal and that the CTU has stated that this issue needs to be studied in detail.



29. Keeping in view the fact that the Petitioner has stated that the 400 kV Essar-Mahan to Sipat requires additional anchoring and that CEA, CTU, WRPC, Respondents 1 and 2 in a meeting held on 28.06.2017 agreed that the LILO would help to take care of oscillations in the grid under outage of one circuit of Mahan TPS-Bilaspur pooling station 400 kV D/C line, we agree to the request of the Petitioner to continue the LILO for a further period of six months. However, since the current system studies point out that due to LILO, there is increase in fault level at Vindhyachal, the Petitioner is directed to complete the system studies within two months, deliberate the same in WRPC, discuss with CEA and take appropriate action for rectifying the fault level and submit a report to the Commission alongwith copy of the system studies and deliberations for taking an appropriate view with regard to the continuance or otherwise of the LILO.

30. MPPMCL has submitted that continuation of LILO as a permanent element would burden the beneficiaries with the additional PoC charge of LILO of Vindhyachal – Korba 400kV S/c line at Mahan TPS. We observe that Essar Mahan has already relinquished its full LTA as on 30.4.2018 as noted in Order dated 7.10.2019 in Petition No. 187/MP/2017. We also observe that the instant LILO line is the dedicated line of Essar Mahan. Accordingly, the generating station is liable to pay transmission charges for same. In this regard we have observed vide our Order dated 26.12.2019 in petition No. 128/MP/2019 as follows:

“111.....

The Petitioner has relinquished the LTA which has been accepted by CTU as effective from 1.1.2019. Even after relinquishment of LTA, the Petitioner continues to carry the liability for payment of transmission charges for the connectivity line. The Commission in Order dated 8.3.2019 in Petition No. 92/MP/2015 has elaborated:

“123. The methodology shall be applicable for the cases where the LTAs have been granted with identified system augmentation and generation projects



have sought full or part relinquishment. The methodology shall not be applicable for dedicated transmission lines since it is the liability of the concerned generator to pay the transmission charges for such dedicated transmission line.”

112. It is clear from the above that relinquishment of LTA by Petitioner does not have any bearing on the liability to pay the transmission charges for the dedicated transmission line. Accordingly, we hold that the Petitioner is liable to pay transmission charges towards 400 kV OPGC-Jharsuguda transmission line notwithstanding its relinquishment of the Long Term Access. “

Accordingly, till the Commission takes a final view as per para 29 above, the Respondent No.1 will be liable to pay the transmission charges for the instant LILO line.

31. The Petition No. 132/MP/2018 is disposed of in terms of above.

Sd/-  
**(I.S.Jha)**  
Member

Sd/-  
**(Dr. M.K. Iyer)**  
Member

Sd/-  
**(P.K.Pujari)**  
Chairperson

