Bihar State Power Transmission Company Ltd., Patna
A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna
CIN – U74110BR2012SGC018889
[SAVE ENERGY FOR BENEFIT OF SELF AND NATION]
Head Office, Vidyut Bhawan, Bailey Road, Patna -800021,

File no-ULDC/Correspondence with SLDC/13/2023

Letter No. **Date**

From,

Chief Engineer (System Operation)
SLDC , BSPTCL

To,

1. **All GM cum CE , BSPTCL**
2. **GM(O&M), BGCL**

Sub:-Procedure for interconnection of new network element of a transmission licensee into the grid and issue of certification of successful trial operation by State Load Despatch Centre, Patna

Ref:- 1.BEGC clause 6.2(IV)
2. IEGC clause 5.1(e) & (f)

Sir,

With reference to subject cited above addition of new transmission asset by any transmission licensee needs to be carefully integrated, complying all the provisions of the BERC/CERC regulations and CEA standards. In line with the above provisions, an SOP has been framed to enable SLDC to facilitate the integration of new intra-state transmission elements and issuance of successful trial operation. Further this is to mention here that GRID INDIA erstwhile POSOCO has already framed & circulated standard operating procedure for Inter-State transmission element which is in force.

In view of above all concerned are hereby requested to follow these procedures for the smooth operation of the state electricity grid as well as national grid.

Yours faithfully

Encl:-As above

Sd/-
Chief Engineer (System Operation)
BSPTCL

Memo No- 393 **Date** 08-06-23

Copy forwarded with enclosure to DBA/BSPTCL for uploading the FTC procedure on SLDC and BSPTCL website.

Encl:-As above

08/06/2023

Chief Engineer (System Operation)
BSPTCL

Procedure for interconnection of a new transmission element belonging to any Distribution/Transmission licensee/ Generation Utility and issue of certificate of successful trial operation by State Load Despatch Centre, Patna

This FTC procedure is limited to Intra-State element only & for inter-state element, FTC procedure of ERLDC will be followed.

As per clause-6.2(IV) of Bihar electricity Grid Code-2010 which is quoted as below

"A set of detailed internal operating procedures for the State Grid shall be developed and maintained by the SLDC in consideration with the entities and same shall be consistent with Grid Code."

And as per clause 5.1(e) (f) of The Indian Electricity Grid Code (IEGC), 2010 which are quoted as below
"A set of detailed operating procedures for the National grid shall be developed and maintained by the NLDC in consultation with the RLDCs, for guidance of the staff of the NLDC and it shall be consistent with IEGC to enable compliance with the requirement of this IEGC".
"A set of detailed operating procedures for each regional grid shall be developed and maintained by the respective RLDC in consultation with the regional entities for guidance of the staff of RLDC and shall be consistent with IEGC to enable compliance with the requirement of this IEGC."

In accordance with the above provisions and in line with NLDC/RLDC operating **procedure, procedure for interconnection of a new transmission element belonging to** any Distribution/Transmission licensee or Generation Utility has been formulated to enable SLDC for secure and reliable interconnection of new elements. The details of the same are as follows:

1. All the Distribution/Transmission Licensees or Generation Utility intending to commission any **element, which is a part of inter/Intra-state transmission system, shall intimate the** SLDC with the details as given below, **generally (10) days** prior to the anticipated date of first test charging.

2.

a. AnnexureA1: Intimation regarding anticipated charging of the line along with the list of the desired documents being submitted as per **Format I.**

b. AnnexureA2: List of elements to be charged and Element Rating details as per **Format I A**

c. AnnexureA3: Single line diagram of the concerned substations, along with status of completion of each dia/bus/breakers clearly indicating which elements are proposed to be charged.

d. Annexure A4 : List of SCADA points to be made available (as per standard requirement, SLDC would need all MW and MVAr data, voltage and frequency of all the buses, all the breaker and isolator positions, OLTC tap positions, Main-1/Main-2 protection operated signals)

e. AnnexureA5: Location of Energy meters as per relevant CEA regulations

f. AnnexureA6: Connection Agreement, wherever applicable along with all annexure.

In additions to these documents, charging instructions, details of approval of the transmission scheme from the Standing Committee/CTU/ Steering Committee, STU, availability of line reactors as per approved scheme, approval for changes in the approved scheme, technical parameters of the transmission element required for network modeling shall be made available by CTU/STU/Licensee/user, as the case may be, to SLDCs/NLDC / RLDC.

3. Within 3 days of submission of above information by the Transmission Licensee / Distribution Licensees / Generation Utility/ user, SLDC shall acknowledge the receipt of the same, as per Format II, and seek clarifications, if any. The utility shall submit the desired information/documents to the SLDC within next three days.

4. The request for charging of new element and towards start of the trial operation as per Format III shall be submitted by the Utility to the SLDC, **generally three (3) days except holidays** prior to the date of first time charging. There could be a separate schedule for test charging and the final schedule for trial operation, which may be mentioned in the Format-I itself. The Utility shall also submit the following documents in this regard:

a. AnnexureB1: Request for charging of the new element along with the summary of the undertakings being submitted as per **Format III**

b. AnnexureB2: Undertaking in respect of Protective systems as per **Format III A**

c. Annexure B3: Undertaking in respect of Telemetry and communication as per **Format III B**

d. Annexure B4: Undertaking in respect of Energy metering as per **Format III C**

e. AnnexureB5: Undertaking in respect of Statutory clearances as per **Format III D**

On satisfying itself with the submitted information as stated above under Para 3, the SLDC would issue a provisional approval for charging to the Transmission / Distribution / Generation Utility as per **Format IV** within two days of receipt of above documents.

5.For inter- state transmission element, element shall only be charged after getting approval from RLDC/NLDC.

On the designated day, the Utility shall charge the transmission line/element and do trial operation as per the time line mentioned in Format III, after obtaining the real time code from SLDC. All attempts would be made by the real time operating personnel at the SLDC to facilitate charging and commission in go with the new element at the earliest, subject to availability of real time data and favorable system conditions.

Indian Electricity Grid Code (Fourth Amendment), 2016 states that:
Clause 6.3 (A): 4. **Date of commercial operation in relation to an inter-State Transmission System or an element thereof shall mean the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful trial operation for transmitting electricity and communication signal from the sending end to the receiving end:**

Trial run and Trial operation in relation to a transmission system or an element thereof shall mean successful charging of the transmission system or an element thereof for 24 hours at continuous flow of power, and communication signal from the sending end to the receiving end and with requisite metering system, telemetry and protection system in service enclosing certificate to that effect from concerned Regional Load Despatch Centre.

Post successful trial operation, following documents shall be submitted by the Utility:
a. AnnexureC1: Requestfor issuance of successful trial operation certificate as per **Format V**
b. AnnexureC2: Values of the concerned line flow sand related voltages as per local SCADA just before and after charging of the element.
c. AnnexureC3: Special Energy meter(SEM) Reading corresponding to the trial run
d. AnnexureC4: Output of Disturbance Recorders/Event Loggers

6. Within three (3) working days of submission of the information mentioned above, SLDC concerned shall issue the certificate for successful completion of trial run of the element as per **Format VI.**
Documents to be submitted by Distribution/Transmission Licensee/User to SLDC

Annexure	Subject	Remarks
Annexure A1	Intimation regarding anticipated charging of the line along with other documents	As per Format I
Annexure A2	List of elements to be charged and Element Rating details	As per Format I A
Annexure A3	Single line diagram of the concerned sub stations, along with status of completion of each dia/bus/breakers	
Annexure A4	List of SCADA points to be made available (as per standard requirement, SLDC would need all MW and MV Ar data, voltage and frequency of all the buses, all the breaker and isolator positions, OLTC tap positions, Main-1/Main-2 protection operated signals)	
Annexure A5	Type and Location of Energy meters as per relevant CEA regulations	
Annexure A6	Connection Agreement, wherever applicable along with all annexures	
Annexure B1	Request for charging of the new transmission element along with the summary of the undertakings being submitted	As per Format III
Annexure B2	Undertaking in respect of Protective systems	As per Format III A
Annexure B3	Undertaking in respect of Telemetry and communication	As per Format III B
Annexure B4	Undertaking in respect of Energy metering	As per Format III C
Annexure B5	Undertaking in respect of Statutory clearances	As per Format III D
Annexure C1	Request for issuance of successful trial operation certificate	As per Format V
Annexure C2	Values of the concerned line flows and related voltages just before and after charging of the element	
Annexure C3	Special Energy meter (SEM) Reading for the trial	
Annexure C4	Output of Disturbance Recorders / Event Loggers	

Annexure A1

Format I

Intimation by Transmission Licensee regarding anticipated charging of new elements

<Name of Transmission Licensee>

Name of the transmission element :

Type of Transmission Element : Transmission Line / ICT / Bus Reactor / Line Reactor / Bus / Bay/Series Capacitor/Series Reactor

Voltage Level : AC/DC kV

Owner of the Transmission Asset :

Likely Date and time of Charging :

Likely Date and time of start of Trial Operation :Place:

Date:

(Name and Designation of the authorized person with official seal)

Encl: Please provide full details.

☐ **Annexure A2 :** Format IA: List of elements to be charged and Element Rating details

☐ **Annexure A3 :** Single line diagram of the concerned sub stations, alongwith status of completion ofeach dia/bus/breakers

☐ **Annexure A4:** List of SCADA points to be made available

☐ **Annexure A5:** Location of installation of Energy meters as per relevant CEA regulations

☐ **Annexure A6:** Connection Agreement, if applicable along with all annexure

Annexure A2

Format I A

List of elements to be charged and Element Rating details

I. **List of Elements to be charged:**

II. **Element Ratings**

a. **Transmission Line**

1	From Substation	
2	To Substation	
3	Voltage Level (kV)	
4	Line Length (km)	
5	Conductor Type	
6	No of sub Conductors	

b. **ICT**

1	Voltage (HV kV / LV kV)	
2	Capacity (MVA)	
3	Transformer Vector group	
4	Total no of taps	
5	Nominal Tap Position	
6	Present Tap Position	
9	Tertiary Winding Rating and Ratio	
10	% Impedance	

c. **Shunt / Series Reactor**

1	Substation Name / Line Name	
2	Voltage	
3	MVAR Rating	
4	Switchable / Non Switchable	
5	In case of Bus Reactor, whether it can be taken as line reactor	

(Name and Designation of the authorized person with official seal)

Annexure - A4

<Name of licensee>

List of SCADA points to be made available:

Station	Element to be charged	List of SCADA points to be made available	Remarks

(Name and Designation of the authorized person with official seal)

Annexure - A5

Please make a diagram to describe position of meter in bays.

Format II

<STATE LOAD DESPATCH CENTRE, PATNA>

Acknowledgement of Receipt by SLDC

This is to acknowledge that the intimation of likely charging of (Name of the transmission element)has been received from (Name of the owner of the transmission asset) on (Date).

Kindly complete the technical formalities in connection with energy metering, protection and real time data and communication facilities and inform us of the same three (3) days before charging of the abovetransmission element as per Formats III, IIIA, IIIB, IIIC and IIID.

Or

The intimation is incomplete and the following information may be submitted within three (3) daysof issue of this acknowledgment receipt.

1. _____

2. _____

3. _____

.....

Date

Signature

Name: Designation:

SLDC

Annexure B1

Format III

<Name of Transmission Licensee>

Request by Transmission Licensee for first time charging and start of Trial Operation

Past references:	:
Name of the transmission element	:
Type of Transmission Element	: Transmission Line / ICT / Bus Reactor / Line Reactor / Bus / Bay
Voltage Level	:
Owner of the Transmission Asset	:
Proposed Date and time of first time Charging	:
Proposed Date and time of Trial Operation	:

Place:

Date:

(Name and Designation of the authorized person with official seal)

Encl:

Annexure B2 : Undertaking in respect of Protective systems as per Format IIIA

Annexure B3 : Undertaking in respect of Telemetry and communication as per Format IIIB

Annexure B4: Undertaking in respect of Energy metering as per Format IIIC

Annexure B5: Undertaking in respect of Statutory clearances as per Format IIID

Annexure B2

Format IIIA

< Name and Address of Transmission Licensee> Undertaking by

Transmission Licensee in respect of Protective systems

The following transmission element is proposed to be charged on_____<date> tentatively around_____hours.

S no and Name of transmission element

1.0 It is certified that a l l the systems as stipulated in Part-III of the Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007 (as amended from time to time) have been tested and commissioned and would be in position when the element is taken into service.

The protective relay settings have been done as per the guidelines of the Regional Power Committee (RPC) as per section 5.2 I of the Indian Electricity Grid Code (IEGC). The necessary changes have also been made/would be made appropriately for the following linesat the following substations:

Sl No:	Name of the substation	Name of the line

Place:
Date:

(Name and Designation of the authorized person with official seal)

Annexure B3

Format IIIB

< Name and Address of Transmission Licensee>

Undertaking by Transmission Licensee in respect of Telemetry and communication

The following transmission element is proposed to be charged on_____<date> tentatively around_hours.

S no and Name of transmission element:

The list of data points that would be made available to SLDC in real time had been indicated vide communication dated_____. It is certified that the following data points have been mapped and real time data would flow to SLDC immediately as the element is charged and commissioned.

S no	Name of substation	Data point (analog as well as digital) identified in earlier Communication dated	Point to point checking done jointly with SLDC (Y/N)	Data would be available at SLDC (Y/N)	Remarks (path may be specified)
1	Sending end	Analog			
		Digital			
		SoE			
		Main Channel			
		Standby Channel			
		Voice Communication (Specify:)			
2	Receiving end	Analog			
		Digital			
		SoE			
		Main Channel			
		Standby Channel			
		Voice Communication (Specify:)			

It is also certified that the data through main channel is made available to SLDC as well as alternate communication channel is available for data transfer to SLDC to ensure reliable and redundant data as per IEGC (as amended from time to time). Also, Voice communication is established as per IEGC. The arrangements are of permanent nature. In case of any interruption in data in real time, the undersigned undertakes to get the same restored at the earliest.

Place:

Date:

(Name and Designation of the authorized person with official seal)

Annexure B4

Format IIIC

< Name and Address of Transmission Licensee> Undertaking by

Transmission Licensee in respect of Energy metering

The following transmission element is proposed to be charged on_____<date> tentatively around_____hours.

S no and Name of transmission element:

Special Energy Meters (SEMs) conforming to CEA (Installation and Operation of Meters) Regulations, 2006 have been installed and commissioned. The SEMs are calibrated in compliance of regulation 9 ofPart-I of CEA (Technical Standard for Grid Connectivity) Regulations 2007 as per the following details:

S no	Name of substation	Feeder name	Make of meter	Meter no	CT Ratio	PT/CVT Ratio
1	Sending end					
2	Receiving end					

Data Format Conformity: Yes / No
Polarity as per Convention: Yes / No
Time Drift Correction carried out: Yes/No

The data from the above meters would be forwarded on weekly basis to the SLDC as per section 6.4.21 of the Indian Electricity Grid Code (IEGC) (as amended from time to time) and also as andwhen requested by the SLDC.

(SLDC to indicate the email ids where the data has to be forwarded).

Place:

Date:

(Name and Designation of the authorized person with official seal)

Annexure B5

Format III D

< Name and Address of Transmission Licensee>

Undertaking by transmission licensee in respect of statutory clearances

It is hereby certified that all statutory clearances in accordance with relevant CERC Regulations and CEA standards/regulations for charging of_____have been obtained from the concerned authorities.

Place:

Date:

(Name and Designation of the authorized person with official seal)

Format IV

Approval for charging and trial run

<STATE LOAD DESPATCH CENTRE, PATNA>

Approval no:

To,

The Transmission Licensee,

Sub: Charging and trial run of <Name of Transmission element>----Provisional approvalRef: 1)

Your application dated in Format-I

2) SLDC response dated in Format-II

3) Your request and details forwarded on dated in Format III, IIIA, IIIB IIIC and IIID

Madam/Sir,

1) The above documents have been examined by SLDC and permission for charging of <Name of Transmission element> on or after_____ is hereby accorded. This approval is provisional and in the intervening period, if any of the conditions given in the undertakings submitted by you are found to be violated, the approval stands cancelled. Kindly obtain a real time code from the appropriate SLDC for each element switching as well as commencement of trial operation.

2) The following shortcomings have been observed in the documents at S no 3) above.

   a.
   b.
   c.

   Please rectify the above shortcomings at the earliest to enable SLDC to issue the provisional approval for test charging, commissioning and trial operation of <Name of transmission element>.

   Thanking you,

Yours faithfully,

(Name and designation of authorized personnel with seal)

Annexure C1

Format-V

Transmission Licensee request for issuance of successful trial operation certificate

<Name of transmission licensee>

To,

<Name of SLDC>

Sub: Successful trial operation of <Name of Transmission element>---request for issueof certificate.

Ref: i) Our application dated in Format-I
ii) Your acknowledgement dated in Format-II
iii) Our application dated ---- in Format-III along with Format IIIA, IIIB IIIC and IIID
iv) Provisional approval dated ---- issued by your office.
v) Real time codes from SLDC on

Madam/Sir,

Referring to the above correspondence, this is to inform you the successful charging and trial operation of <Name of Transmission element> from ----- to ----- (time & date). Please find enclosed the following :

1. A plot of the MW/MVAr power flow during the 24 hour trial operation based on the substation SCADA is enclosed at Annexure-B1.
2. The Energy Meter readings have already been mailed to your office on_____. The 15-minute time block wise readings for the trial operation period is enclosed at Annexure-B2
3. Event Logger and Numerical Relay or Disturbance Recorder outputs at Annexure-B3 indicating all the switching operations related to the element. It is further to certify that the time synchronization of numerical relay, event logger and disturbance recorder has been established.

It is requested that a certificate of successful trial operation may kindly be issued at the earliest.

Thanking you,

Yours faithfully,

( )

<Name and Designation of authorized person with official seal>

Encl: Annexure C2: Plot of MW/MVAr flow during 24 hour trial operation.
Annexure C3: Energy Meter
Annexure-C4: Reading Numerical relay or Disturbance Recorder (DR) output and EventLogger output.

Format-VI

<STATE LOAD DESPATCH CENTRE, PATNA>

Certificate Number:

Date:

Certificate of completion of Trial Operation of Transmission Element

Reference:

i. Communication dated_____from Transmission Licensee to SLDC in Format-I and IA.
ii. Communication from SLDC dated_____to Transmission Licensee in Format-II.
iii. Communication from Transmission Licensee to SLDC dated_____in Format III, IIIA, IIIB, IIIC and IIID.
iv. Provisional approval dated_____from SLDC to Transmission Licensee for chargingin real time in Format-IV.
v. Real time code issued by SLDC on
vi. Communication dated_____from Transmission Licensee in Format-V after trial operation.

Based on the above reference, it is hereby certified that the following Transmission element hassuccessfully completed the trial operation:

Name of the Transmission Asset:	
Owner of the Transmission Asset :	
Date and Time of Energization for commencement of successful trial run operation	
Date/time of completion of successful trial run operation	

This certificate is being issued in accordance with Regulation 5 of CERC (Terms and Condition of Tariff) Regulations, 2014 to certify successful completion of trial operation of transmission element. Usage of this certificate for any other purpose is prohibited.

Signature

Name and Designation of the issuing Officer with official seal

Place

Copy to:

I. Chief Engineer, STU, BSPTCL
II. Chief Engineer, O&M, BSPTCL
III. Any other agency, if required