

# BIHAR STATE POWER TRANSMISSION COMPANY LTD: PATNA

Registered Office: 4<sup>th</sup> Floor, Vidyut Bhawan, Baily Road, Patna  
Corporate Identity No. (CIN) U40102BR2012SGC018889 Web site- www.bsptcl.in

19

## Standard Operating Procedure (S.O.P.)

### Case-I: In case of outage of 315 MVA ICT of Patna (PG) & 500 MVA ICT remaining in service

#### Action to be taken:

1. Simultaneous tripping of 220 KV Patna (PG) - Fatuha T/L may be done through relay to avoid overloading of 500 MVA ICT, as recommended by PGCIL. *in consultation with PGE SLDC*
2. (a) Khagaul GSS will shed Bihta & Digha GSS immediately to get instant relief of approx 150 MW.  
(b) In case of synchronized state of 220 KV Patna(PG)-Khagaul-Ara (PG) loop, if 500 MVA ICT still gets overloaded after operation of (a) then incomer of 220 KV Patna (PG) & Sipara line will be isolated at Khagaul GSS (in anticipation to post facto approval of ERLDC).  
(c) In case of Khagaul is not synchronised with Ara (PG), SLDC will reduce load of Sasaram(PG)-Ara(PG) both ckt, subsequently ERLDC shall be requested for extending power from Khagaul to Arrah(PG) for synchronization. Then incomer of 220 KV Patna (PG) & Sipara will be isolated at Khagaul GSS (in anticipation to post facto approval of ERLDC).  
(d) Then Power to Khagaul will be available from Ara (PG)  
(e) SLDC will reschedule all connected GSS to ensure power availability at Khagaul GSS.
3. After stabilization of system at Khagaul, Khagaul will take action for reduction of rural load & restoration of PSS connected to Digha & Bihta etc. as per availability of power and in guidance of SLDC.

### Case-II: In case of outage of 500 MVA ICT of Patna (PG) & 315 MVA ICT remaining in service

#### Action to be taken:

1. Simultaneous tripping of 220 KV Patna (PG)-Khagaul, 220 KV Sipara-Khagaul & 220 KV Patna (PG)-Fatuha Trans. Lines may be done through relay, as recommended by PGCIL.
2. Under this condition power to 220 KV Khagaul will remain zero from Patna (PG) and Sipara (BSPTCL).
3. 250 MW power will be available at Patna (PG) which will be used for 132KV power supply to Jakkanpur, Mithapur & Karbigahiya. All 33 KV feeders at Sipara GSS will be disconnected.
4. Since, Khagaul is not synchronized with Ara (PG), SLDC will reduce load of Sasaram(PG)-Ara(PG) both ckt, subsequently ERLDC shall be requested for extending power from Arrah (PG) to Khagaul.
5. After stabilization of system at Khagaul, Khagaul will take action for restoration of its own load along with that of Digha, Bihta GSS & Traction load, as per availability of power in accordance with guidance of SLDC.

### Case-III: In case of outage of both 315MVA & 500MVA ICT at Patna (PG)

#### Action to be taken:

- 1 Simultaneous tripping of 220 KV Patna (PG)-Khagaul, 220 KV Sipara-Khagaul & 220 KV Patna (PG)-Fatuha Trans. Line may be done through relay, as recommended by PGCIL.
- 2 Under this condition, power to 220 KV Khagaul will remain zero from Patna (PG) and Sipara (BSPTCL).
- 3 Sipara will avail power from 220 KV Sipara- Fatuha line, then after transformation to 132KV it will be extended to Jakkanpur.
- 4 In case of unavailability of 220 kV Sipara-Fatuha line:  
(a) Isolate Fatuha power which is being feed to Masaudhi via transfer bus of Sipara.

SA  
B.S.P.

a

- (b) Fatuha will extend power to Sipara (up to 125 MW) and subsequently Sipara will extend it to Mithapur, Karbigahia & Jakkanpur.
- 5 The load allocation to Mithapur shall be done by SLDC considering the limit of loading of Biharsarif(PG) & associated 220KV Biharsarif(SG)-Fatuha transmission line.
- 6 Masaudhi & Jahanabad GSS will avail power from Gaya GSS ( L-33) with suitable power allocation.
- 7 Isolation of rural load of Fatuha & Katra shall be done by respective GSS.

**Case-IV: In case one ckt of 220 KV D/C Patna (PG)-Sipara goes under breakdown.**

**Action to be taken:**

- 1. Simultaneous tripping of 220KV Patna (PG)-Khagaul & 220KV Sipara-Khagaul line may be done through Relay.
- 2. Power to Khagaul from Patna(PG) will then be zero to avoid bulk load & tripping on overloading.
- 3. Then, Khagaul will avail power through 220 KV Patna (PG)-Khagaul line keeping Bihta and Digha GSS shaded.
- 4. After stabilization of system at Khagaul, Khagaul will take action for reduction of rural load & restoration of PSS connected to Digha & Bihta etc. as per availability of power and in guidance of SLDC.

**Case-V: In case of 220KV D/C Patna (PG)-Sipara both goes under breakdown.**

**Action to be taken:**

- 1. Simultaneous tripping of 220KV Patna (PG)-Khagaul & 220KV Sipara-Khagaul line may be done through Relay.
- 2. Power to Khagaul from Patna (PG) will be zero to avoid tripping of line in overload due to bulk load and reverse power flow i.e. from Khgaul to Sipara (on single ckt of Patna(PG)-Khagaul).
- 3. Since, Sipara is powerless, it will avail power through 220 KV Sipara – Fatuha line then after transformation to 132KV it will be extended to Jakkanpur. Simultaneously, rescheduling of load at Fatuha, Katra, Gaighat, Jakkanpur, Mithapur & Karbigahiya will be done.
- 4. In case of unavailability of 220 kV Sipara-Fatuha line:
  - (a) Isolate Fatuha power which is being feed to Masaudhi via transfer bus of Sipara.
  - (b) Fatuha will extend power to Sipara (up to 125 MW) subsequently Sipara will extend it to Mithapur, Karbigahia & Jakkanpur.
- 5. The load allocation to Mithapur shall be done by SLDC considering the limit of loading of Biharsarif(PG) & associated 220KV Biharsarif(SG)-Fatuha transmission line.
- 6. Masaudhi & Jahanabad GSS will avail power from Gaya GSS ( L-33) with suitable power allocation.
- 7. Isolation of rural load of Fatuha & Katra shall be done by respective GSS.
- 8. Then, Khagaul will avail power through 220 KV Patna (PG)-Khagaul line keeping Bihta and Digha GSS shaded.
- 9. After stabilisation of system at Khagaul, Khagaul will take action for reduction of rural load & restoration of PSS connected to Digha & Bihta etc. as per availability of power and in guidance of SLDC.

**Case-VI: In case of 132KV D/C Sipara-Jakkanpur goes under breakdown.**

**Action to be taken:**

- 1. Extend Mithapur Power to Jakkanpur via Karbigahia , The total load of Jakkanpur will be restricted to 70 MW only & 33 kv Power for Karbigahia shall be regulated as per instruction of SLDC

Handwritten initials in blue ink: "AA" and "AB" with a signature below.

Case-VII: In case of 220KV D/C Biharsarif-Fatuha line goes under breakdown.

Action to be taken:

1. Isolation of Masaudhi & Jahanabad from Fatuha and shall be shifted on Gaya GSS with suitable power allocation.
2. GSS Katra, Gaighat & Fatuha shall be rescheduled by SLDC as per availability of power at Patna (PG).

Case-VIII: In case of either 13KV Fatuha-Gaighat or Fatuha-Katra line goes under breakdown.

Gaighat GSS & Katra GSS are interconnected at 132 KV level as such these grids can share load available at other end.

Case I:-In case 132 KV Fatuha-Gaighat lines goes under breakdown, Gaighat can draw full load from GSS Katra as the transmission line capacity of 132 Fatuha-Katra is 150 MW.

Case II:-In case 132 KV Fatuha-Katra line goes under breakdown, GSS Katra may avail load up to the extent load of Katra & Gaighat is 120 MW. As soon as load reaches peak of 120 MW, some rural feeder of Katra may be shaded or Katra PSS may be shifted on Fatuha GSS.



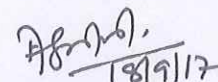
(Perwez Alam)  
ESE, Telecom & ULDC



(A. K. Choudhary)  
ESE, TC, Patna



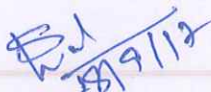
(Premjeet Kumar)  
ESE, SLDC



(R. K. Gopal)  
ESE, Tr. (O & M)



(H. R. Panday)  
CE (SO)



(S.B. Prasad)  
CE, Trans (O & M)



(J.P. Singh)  
GM-cum-CE Trans Zone, Patna