### बिहार स्टेट पावर ट्रांसिमशन कंपनी लिमिटेड



Bihar State Power Transmission Company Limited (निबंधित कार्यालय:-विद्युत भवन, बेली रोड, पटना)

(Regd. Office: Vidyut Bhawan, Bailey Road, Patna)

CIN-U74110 BR 2012 SGC 018889

Website:www.bsptcl.bih.inc.in

#### DEPARTMENT OF HR & ADMINISTRATION

पत्रांक —T-I/DP/CE-41004/2022

पटना, दिनांक:--

प्रेषक.

राजीव कुमार सिंह, उपमहाप्रबंधक(मा०सं० / प्रशा०)

सेवा में,

सभी महाप्रबंधक—सह—मुख्य अभियंता, सभी मुख्य अभियंता, सभी विद्युत अधीक्षण अभियंता, सभी विद्युत कार्यपालक अभियंता, सभी सहायक कार्यपालक अभियंता, सभी कनीय विद्युत अभियंता, बिहार स्टेट पावर ट्रांसमिशन कम्पनी लिमिटेड, पटना।

विषय:--

मानक संचालन प्रक्रियाओं के संबंध में।

महाशय,

निदेशानुसार, उपर्युक्त विषयक प्रबंध निदेशक, बिहार स्टेट पावर ट्रांसिमशन कम्पनी लिमिटेड के पत्रांक—1944 दिनांक—30.06.2014 (प्रति संलग्न) का कृपया संदर्भ लिया जाय। उक्त पत्र के माध्यम से ग्रिड उपकेन्द्रों के संचालन एवं रख—रखाव के लिए मानक संचालन प्रक्रियाएँ निर्गत की गयी है। परन्तु विगत कुछ वर्षों में सामने आए मामलों से परिलक्षित होता है कि लागू मानक संचालन प्रक्रियाओं का अनुपालन नहीं किया जा रहा है।

अतएव, इस संदर्भ में मुख्य अभियंता (O&M), BSPTCL के पत्रांक—433 दिनांक—26.09.2024 में खराब पावर ट्रांसफॉर्मर की मरम्मती के लिए वर्णित मानक प्रक्रिया तथा पूर्व में प्रचारित मानक संचालन प्रक्रिया की छायाप्रति संलग्न करते हुए अनुरोध है कि इनका अक्षरशः अनुपालन अपने स्तर से सुनिश्चित कराने की कृपा की जाय। साथ ही, अपने अधीनस्थ कर्मियों तथा ग्रिड उपकेन्द्रों में भी इसे प्रचारित करने की कृपा की जाय। अनु0—तथैव।

विश्वासभाजन ह0 / –

		5	90 / —	
		(राजीव	कुमार सिंह)	)
ज्ञापांक	5/ दिनांक		/	
	प्रतिलिपि:— अध्यक्ष सह—प्रबंध निदेशक के प्रधान आप्त सा	चिव / विशेष	कार्य पदाधि	ोकारी,
बिहार	रटेट पावर (होलिंडग) कम्पनी लिमिटेड / प्रबंध निदेशक के रि	वेशेष कार्य	पदाधिकारी,	बिहार
क्रिकेट १	गवर टांसमिशन कम्पनी लिमिटेड पटना को सचनार्थ प्रेषित।			

<sup>ह0 ∕ −</sup> उपमहाप्रबंधक(मा0सं0 ∕ प्रशा0) प्रतिलिपि:— निदेशक (परियोजना)/निदेशक (परिचालन)/मुख्य अभियंता (असैनिक)/ महाप्रबंधक (वित्त एवं लेखा)/अधीक्षण अभियंता (असैनिक)/ डी० बी० ए०, बिहार स्टेट पावर ट्रांसिमशन कम्पनी लिमिटेड, पटना को सूचनार्थ अनुलग्नक की प्रति सहित सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

2. डी0 बी0 ए0 से अनुरोध है कि इस पत्र की प्रति अनुलग्न सहित बेवसाईट पर अपलोड

करने की कृपा की जाय।

3. सहायक कार्यपालक अभियंता / कनीय विद्युत अभियंता, सभी ग्रिंड उपकेन्द्र से अनुरोध है कि इस पत्र की प्रति अनुलग्नक सहित अपने—अपने ग्रिंड के सूचना पट्ट पर चस्पा करवाने की कृपा की जाय।

अनु०—तथैव।

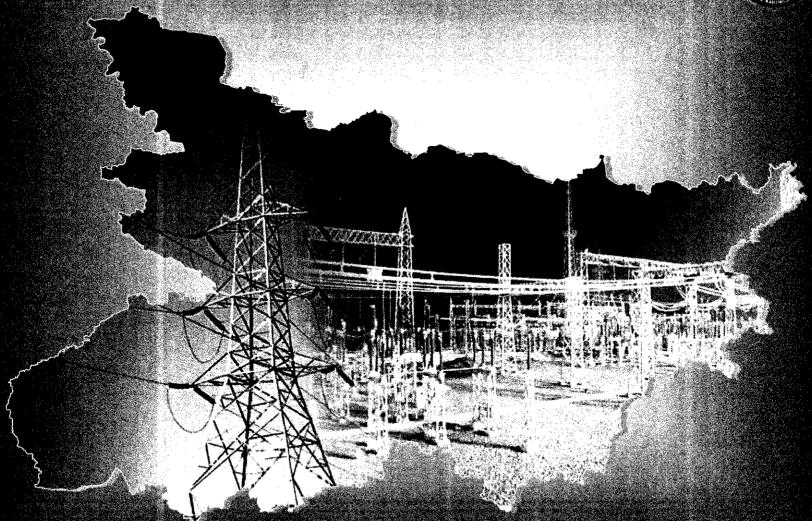
उपमहाप्रबंधक (मा०सं० / प्रशा०)

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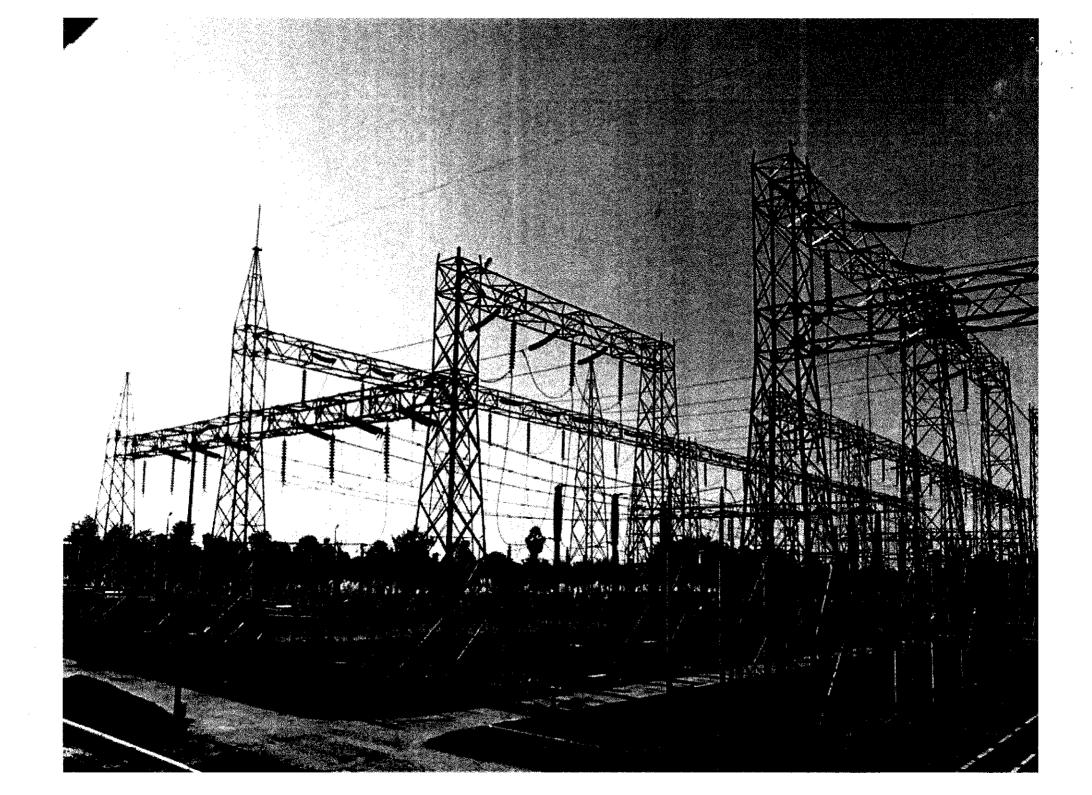


BHAR STATE POWER TRANSMISSION COMPANY LTD.





STANDARD OPERATING PROCEDURE



# Foreword...



It is indeed heartening to know that BSPTCL team has prepared a comprehensive Standard Operating Procedures (SOP) for attending the breakdowns of Grid Sub Stations and Transmission Lines. This is a remarkable effort made to set detailed standard operating procedures for each and every level of Transmission Company, right from an Assistant Executive Engineer to the Chief Engineers.

The SOP contains not only the details of possible defects in transmission system and the officials responsible to rectify them but also the time and information protocol for attending those defects.

I would like to congratulate Mr. Sanjay Kumar Singh, Managing Director and entire BSPTCL team for preparing such a valuable document.

I hope this SOP will certainly act as guide for all the engineers involved in operation and maintenance of transmission systems and will ultimately be helpful in providing quality and uninterrupted power supply to our valued consumers throughout the state.

With best wishes.

**Pratyaya Amrit, I.A.S**. Secretary, Energy-cum-CMD, BSP(H)CL

### From the desk of the Managing Director...

This is first attempt of BSPTCL to formulate a Standard Operating Procedure (SOP) for attending the breakdowns in transmission system. This SOP will not only be instrumental in rectification of various transmission breakdowns but also will be the key for improving the Asset Availability Factor of the Company. It will also help in providing quality and reliable power to the consumers.

The SOP contains stepwise detail of 'Time and Information Protocol' for attending the breakdowns in Gris Sub Stations and Transmission Lines.

The team of BSPTCL has tried to identify the possible breakdowns in Grid Sub Stations and Transmission Lines. It encompasses even the minor defects such as Replacement of Fuse, Leakages of T-Oils etc along with almost all significant defects likely to cause Transmission Line and Grid Breakdowns.



This SOP prescribes not only a specified time limit for rectification of breakdowns but also pinpoints the responsibility for attending the breakdowns.

Keeping in view the urgency of attending the breakdowns, the limits for financial powers of the concerned officials have also been increased at each level, so that desired work can be accomplished on time.

Trainings and Workshops are being organized to enhance the capacity & potential of transmission engineers and other technical staff to attend the breakdowns. For effective communication, CUG mobiles have been provided to all of them.

A specific direction to comply the SOP has been issued to the Engineers of Transmission Company. The concerned wings of the Company i.e. the Operation & Maintenance teams and Testing & Commissioning teams, both at field and head quarter level have already started to comply with the protocols of the SOP.

As it is our first attempt of framing such SOP, we would like to invite suggestions to make it more effective and useful document in future.

Sanjay Kumar Singh, I.A.S. Managing Director, BSPTCL

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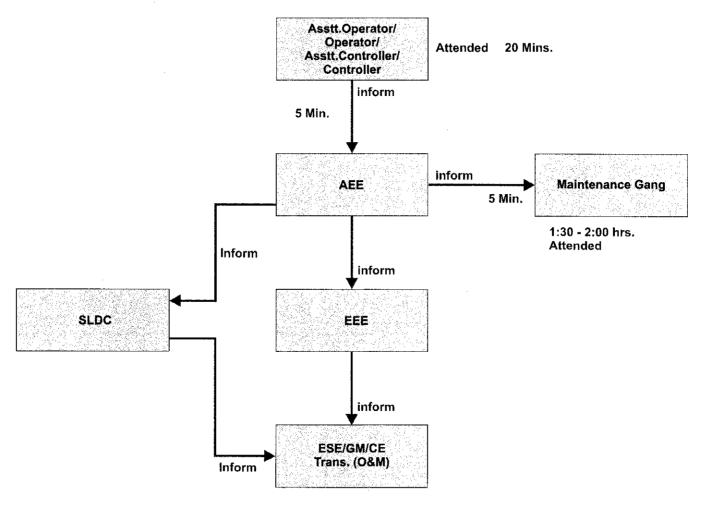
### I. Standard Operating Procedure for Breakdown in Grid Sub-Station

Sl No.	NAME OF DEFECT	TIME REQURED IN RECTIFICATION	RESPONSIBILITY	Remarks
1.	Problem in isolator, melting of isolator tips(male/female)	1:30 -2:00hrs.	AEE & EEE	Subject to availability of spares.
2.	Non-operation of isolator due to electrical and mechanical fault	1:30 -2:00hrs.	AEE & EEE	
3.	Minor oil leakage, Insulator, CT, PT	1:00-1:30 hrs.	AEE & EEE	
4.	Checking/Topping up of oil in transformer, CT, PT & Breaker	1:30 -2:00hrs.	AEE & EEE	If weather is favourable
5.	Problem in closing/opening coil of Breaker	1:00-2:00hrs.	AEE & EEE	Subject to availability of spares coils.
6.	Replacement of burnt motor of Isolator/ Breaker	2:00-3:00 hrs.	AEE and T&C	Subject to availability of spares.
7.	Snapping/cutting/melting of jumper/connectors of C.T, P.T, LA, Breakers, Transformers etc. in GSS	2:00-3:00 hrs.	AEE & EEE	Subject to availability of working gang .
8.	Snapping/cutting of drop jumpers of line in GSS	2:00-4:00 hrs.	AEE & EEE	After arrival of maintenance gang.
9.	Checking/ measuring of C.T.,PT, LA & Breaker	3:00-4:00 hrs.	AEE ,EEE,ESE and T&C	After arrival of T&C team
10.	Checking of operating circuit of Breaker	2:00 3:00 hrs.	AEE ,EEE,ESE and T&C	After arrival of T&C team

SI No.	NAME OF DEFECT	TIME REQURED IN RECTIFICATION	RESPONSIBILITY	Remarks
11.	Meggering of control cable	2:00-3:00 hrs.	AEE ,EEE,ESE and T&C	After arrival of T&C team
12.	Replacement of control cable	3:00-4:00 hrs.	AEE ,EEE and T&C	After arrival of T&C team
13.	Checking of Relay Master Trip/Over voltage/over current/earth fault/differential protection, distance protection.	4:00-5:00 hrs.	AEE,EEE,ESE,T&C and CRITL	After arrival of T&C and CRITL team
14.	Alarm circuit of Low oil level winding temp., oil temp., Buchholz relay	2:00-4:00 hrs.	AEE,EEE,T&C and CRITL	After arrival of T&C and CRITL team
15.	Tap changer problem	2:00-4:00 hrs.	AEE,EEE,ESE,T&C and CRITL	After arrival of T&C and CRITL team
16.	Replacement of burnt/burst CT,PT & LA	6:00-8:00 hrs.	AEE , EEE and T& C	subject to availability of spares at site

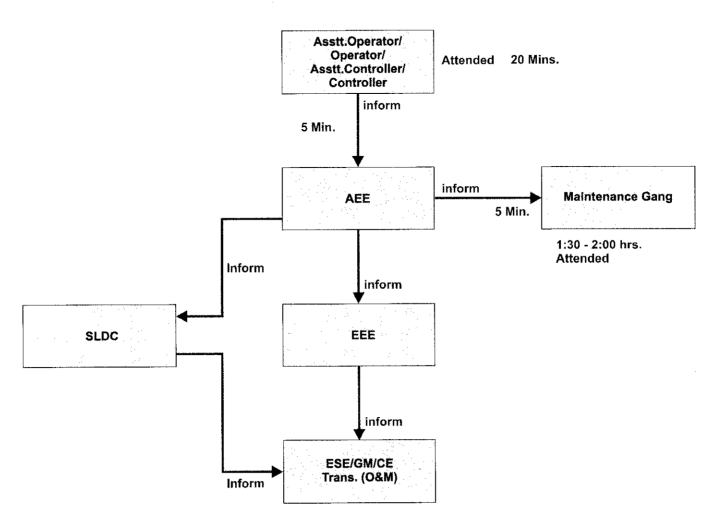
NOTE: Whenever a shutdown of equipment or bay is taken, the related others works must be completed within the same shutdown period.

# 1. PROBLEM IN ISOLATOR, MELTING OF ISOLATOR TIPS (MALE/FEMALE)

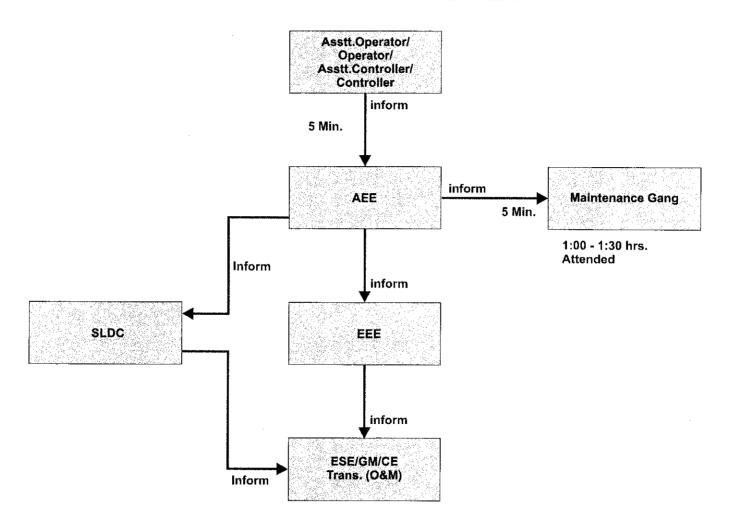


Subject to availability of spares

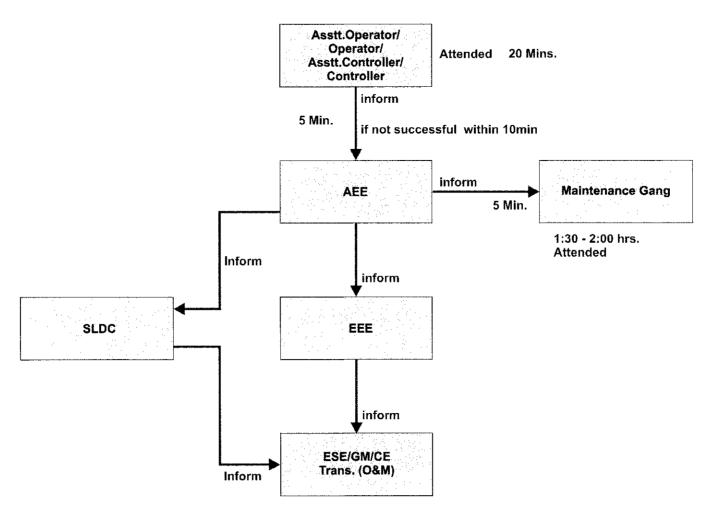
# 2. NON-OPERATION OF ISOLATOR DUE TO ELECTRICAL AND MECHANICAL FAULT



## 3. ATTENDING MINOR OIL LEAKAGE FROM CT, PT, TRANSFORMER & BREAKER

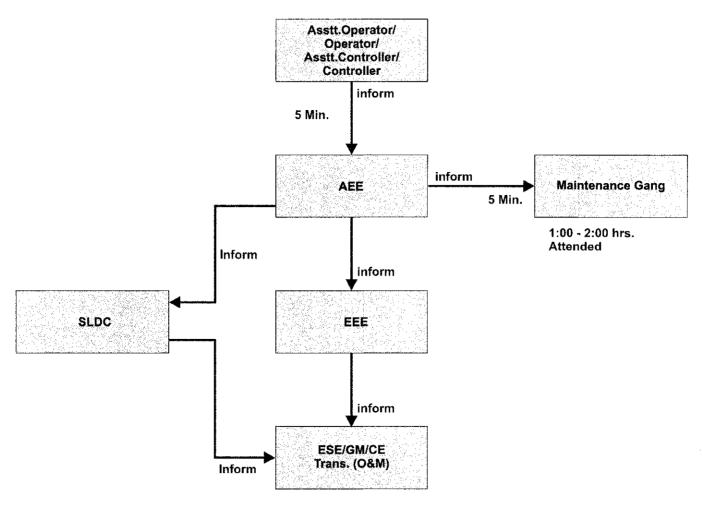


# 4. CHECKING/TOPPING OF OIL IN TRANSFORMER CT, PT & BREAKER



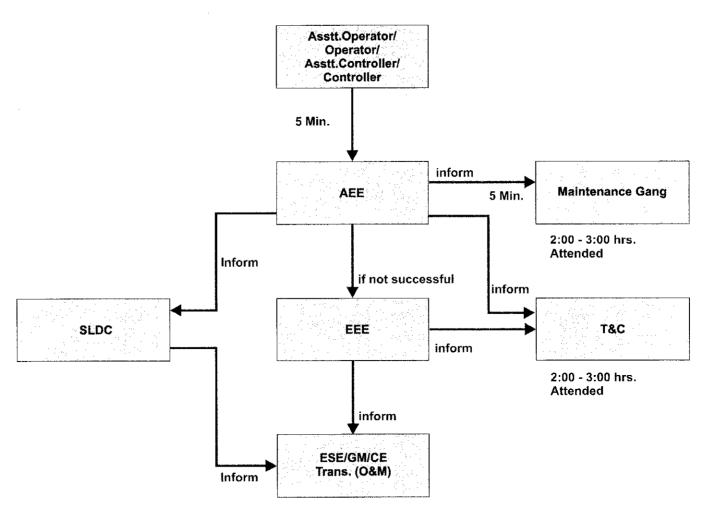
Subject to favorable weather condition

#### 5. PROBLEM IN CLOSING/OPENING COIL OF BREAKER



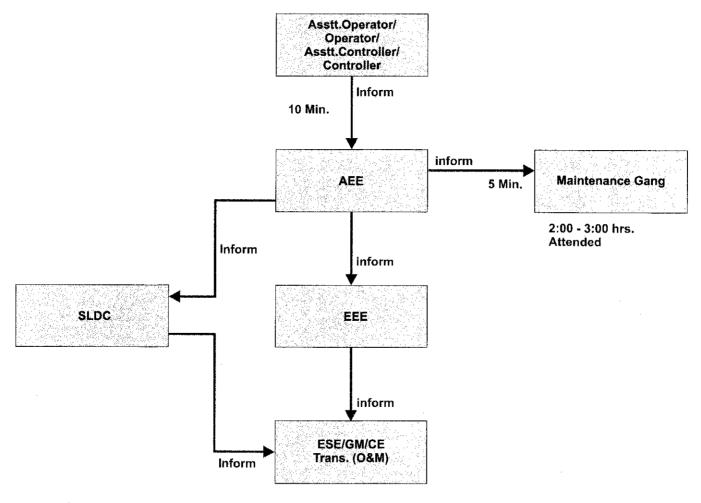
Subject to availability of spares coils

#### 6. REPLACEMENT OF BURNT MOTOR OF ISOLATOR/BREAKER



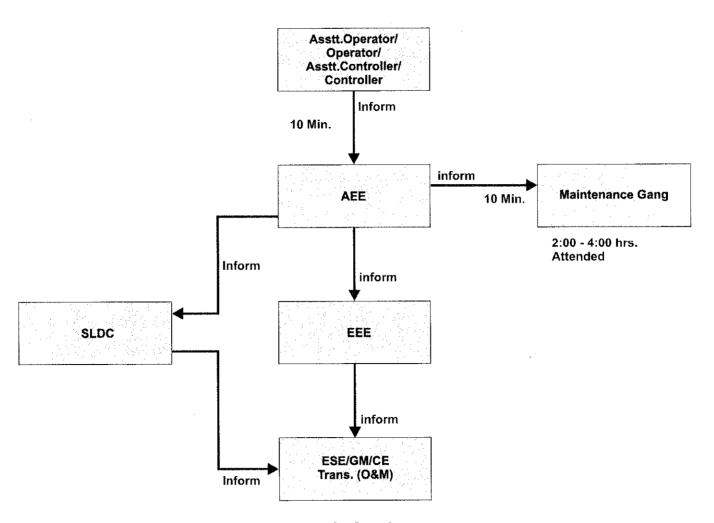
Subject to availability of spares

# 7. SNAPPING/CUTTING/MELTING OF JUMPER/CONNECTORS OF CT, PT, LA, BREAKERS AND TRANSFORMERS, Etc. IN GSS



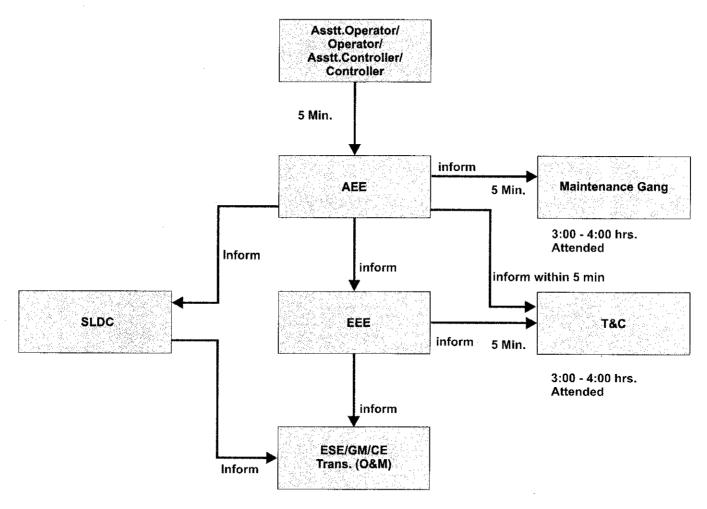
Subject to availability of working gang

#### 8. SNAPPING/CUTTING OF DROP JUMPERS OF LINE IN GSS



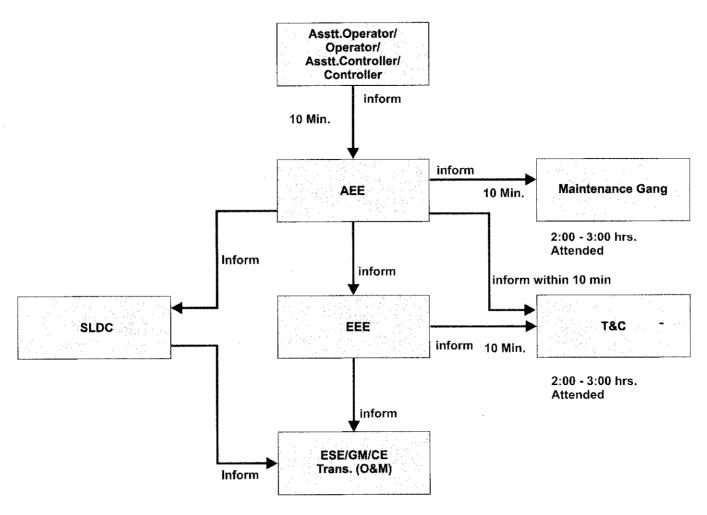
Subject to arrival of maintenance gang

#### 9. CHECKING/MEASURING OF CT, PT, LA & BREAKER



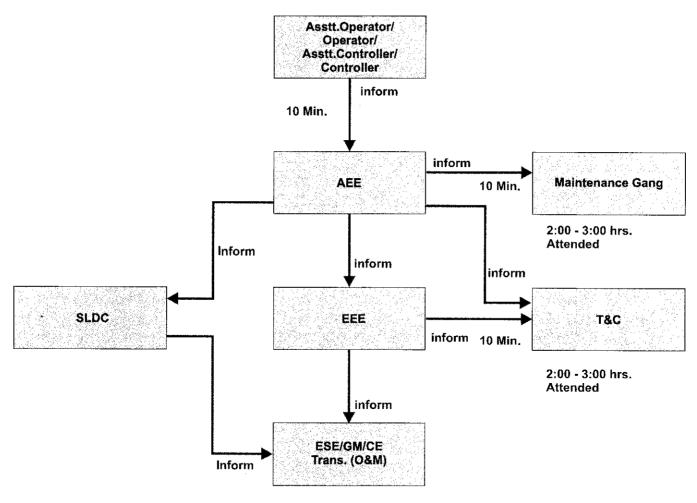
Subject to arrival of T&C team

### 10. CHECKING OF OPERATING CIRCUIT OF BREAKER



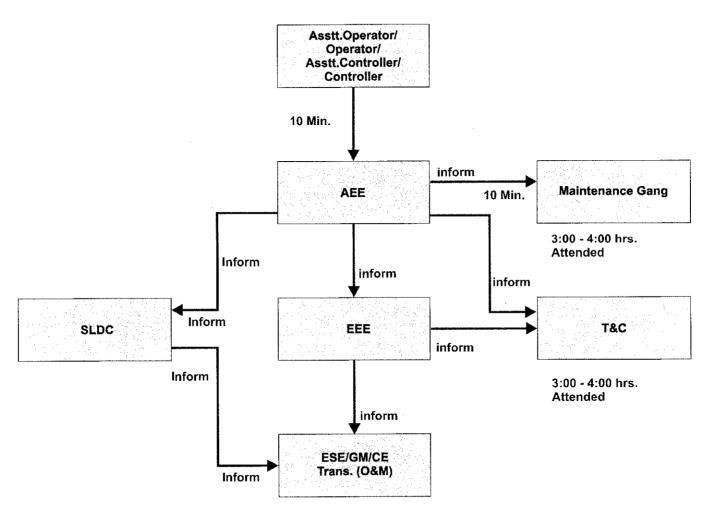
Subject to arrival of T&C team

#### 11. MEGGERING OF CONTROL CABLE



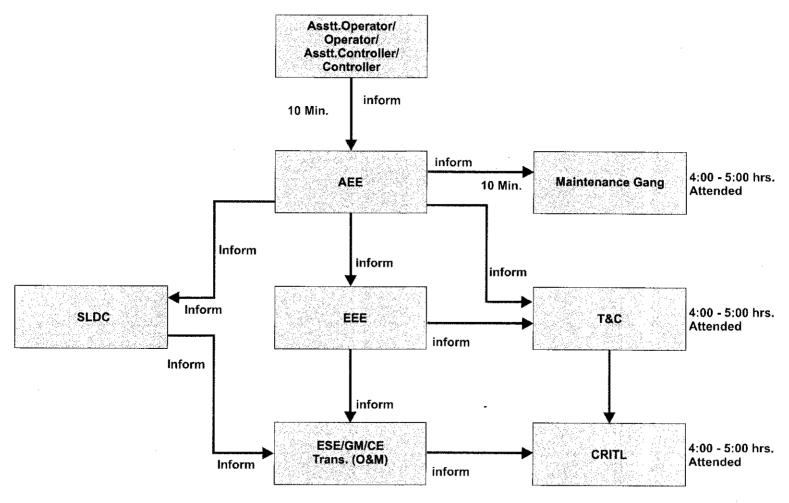
Subject to arrival of T&C team

#### 12. REPLACEMENT OF CONTROL CABLES



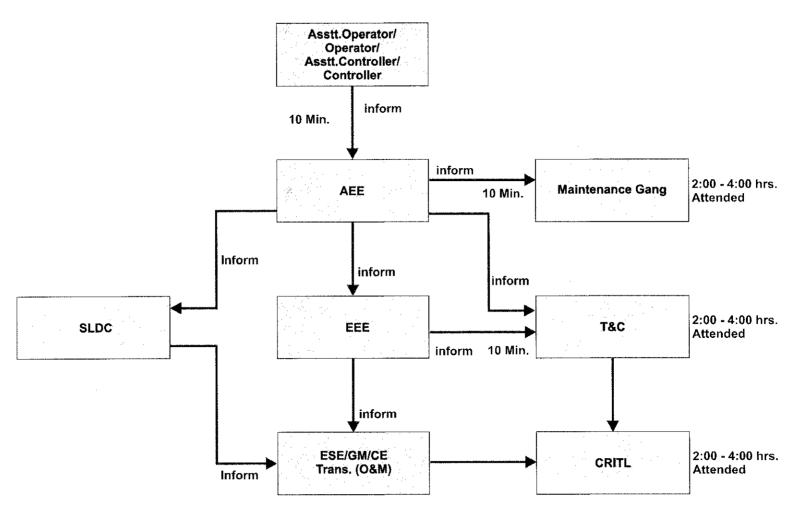
Subject to arrival of T&C team

#### 13. CHECKING OF RELAY-MASTER TRIP/OVER VOLTAGE/OVER CURRENT/ EARTH FAULT/DIFFERENTIAL PROTECTION/DISTANCE PROTECTION, Etc.



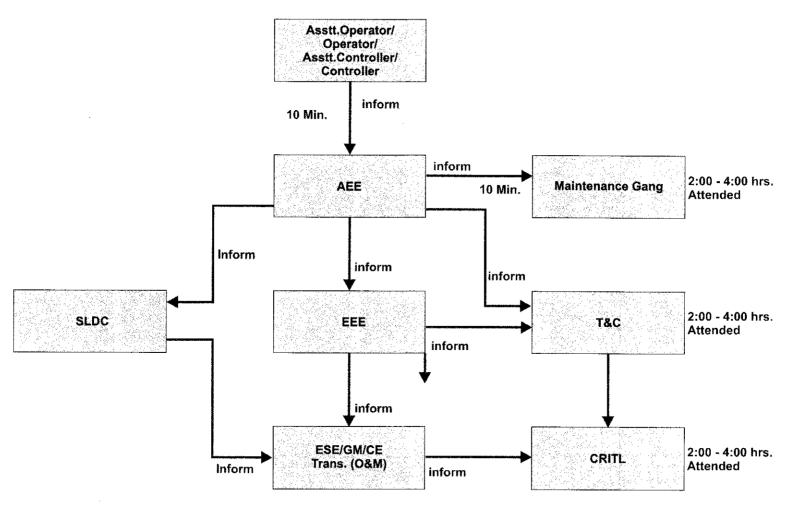
Subject to arrival of T & C and CRITL team

# 14. ALARM CIRCUIT OF LOW OIL LEVEL, WINDING TEMPERATURE, OIL TEMPERATURE, BUCHHOLZ RELAY, Etc.



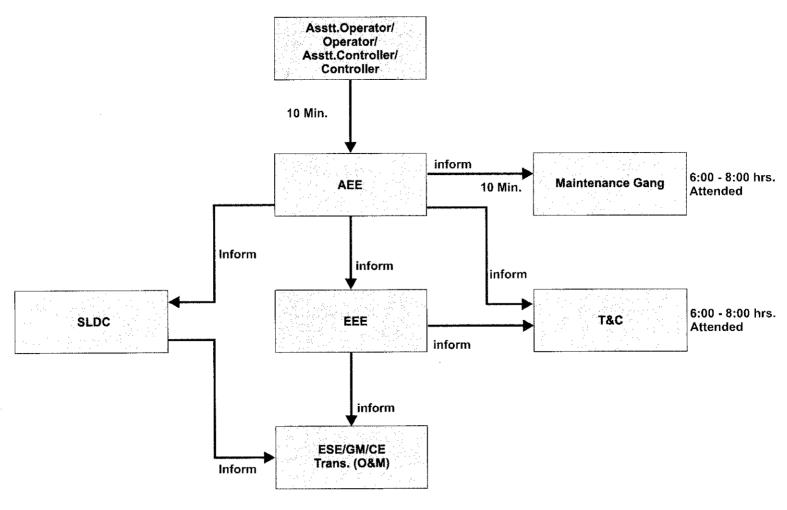
Subject to arrival of T & C and CRITL team

#### 15. TAP CHANGER PROBLEM



Subject to arrival of T & C and CRITL team

### 16. REPLACEMENT OF BURNT/BURST CT, PT & LA



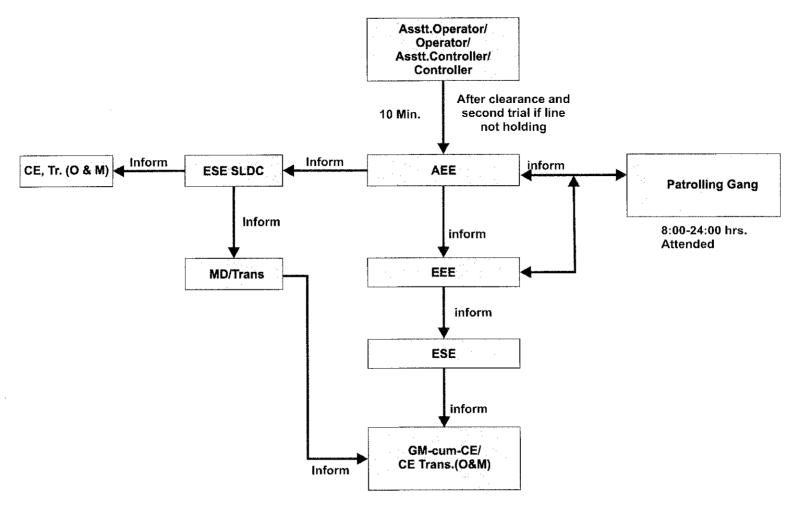
Subject to availability of spares at sites

### II. Standard Operating Procedure for Break Down in Transmission Line

Sl No.	NAME OF DEFECT	TIME REQURED IN RECTIFICATION	RESPONSIBILITY	Remarks
1.	Patrolling of Tr. Line, Insulators and towers	8:00-24:00 hrs.	AEE	subject to visibility and manpower
2.	Repair/ replacement of conductors, earth wire & insulator	12:00-24:00 hrs.	AEE & EEE	subject to availability of spares, agency and weather/site conditions.
3.	Replacement of burnt Jumper in line	4:00-6:00 hrs.	AEE & EEE	Subject to availability of agency
4.	Fitting of Missing tower member	6:00-8:00 hrs.	AEE	Subject to availability of spares
5.	Repair, Erection of damage /bent towers	4-5days	AEE to GM	subject to availability of spares and agency
6.	Erection /repair of tower leg	15-20 days	AEE to GM	After arrival of agency & availability of spares
7.	Pruning/cutting of tree branches and bushes near transmission line.	6:00-8:00 hrs	AEE	On daily basis depending upon the line length
8.	Thermo vision must be taken on monthly basis and rectification to be done accordingly		AEE	

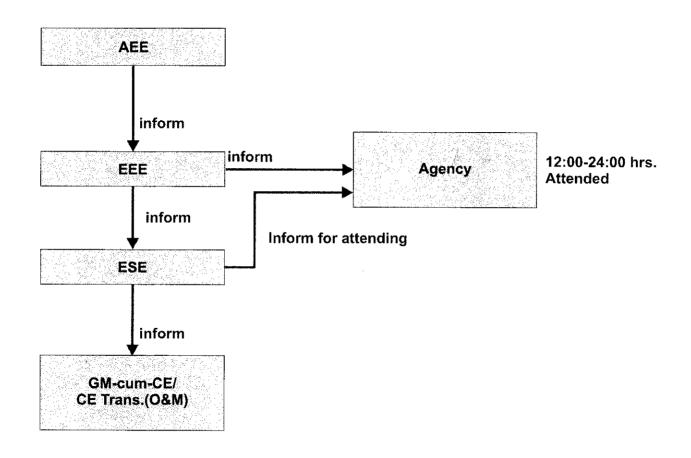
NOTE: Whenever a shutdown of equipment or bay is taken, the related others works must be completed within the same shutdown period.

### 1. PATROLLING OF TRANSMISSION LINE, INSULATOR AND TOWERS



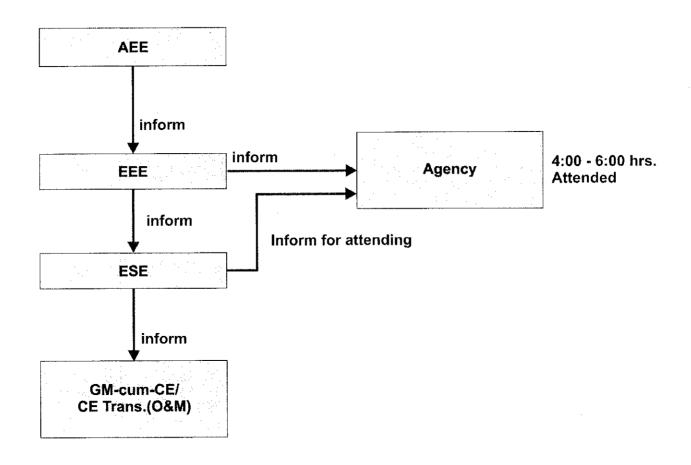
Subject to visibility and manpower

# 2. REPAIR/REPLACEMENT OF CONDUCTORS, EARTH WIRE AND INSULATOR



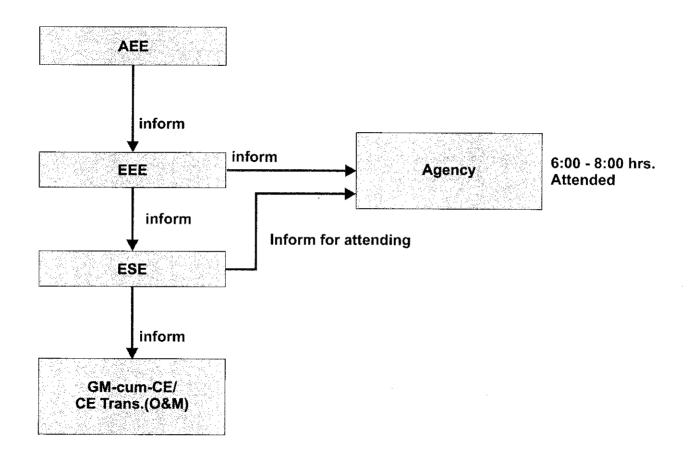
Subject to availability of spares, agency and weather/site condition

### 3. REPLACEMENT OF BURNT JUMPER IN LINE



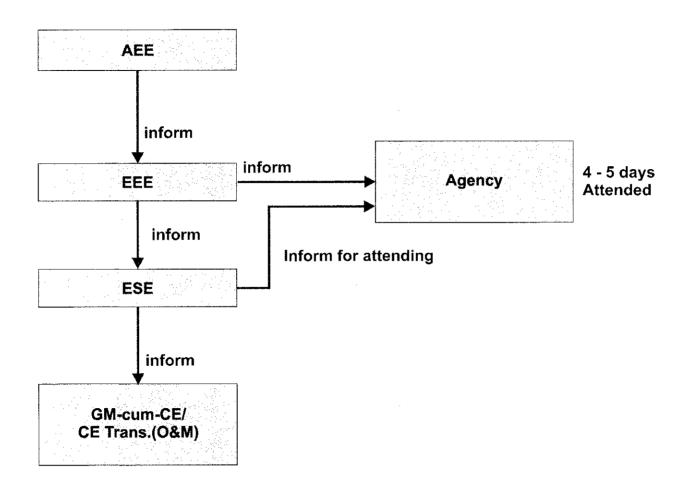
Subject to availability of agency

#### 4. FITTING OF MISSING TOWER MEMBER



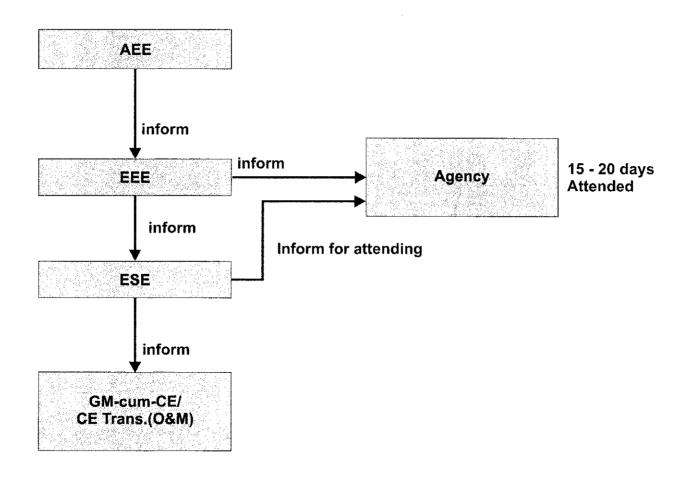
Subject to availability of spares

### 5. REPAIR, ERECTION OF DAMAGE/BENT TOWERS



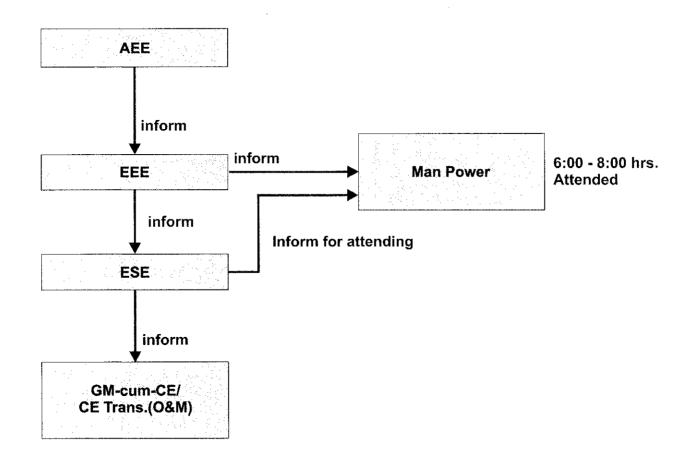
Subject to availability of spares and agency

#### 6. ERECTION/REPAIR OF TOWER LEG



Subject to availability of spare and arrival of agency

# 7. PRUNING/CUTTING OF TREE BRANCHES AND BUSHES NEAR TRANSMISSION LINES



Subject to daily basis depending upon the line length

#### 8. THERMO VISION REPORT

# THERMO VISION MUST BE TAKEN ON MONTHLY BASIS AND RECTIFICATION TO BE DONE ACCORDINGLY



## BIHAR STATE POWER TRANSMISSION COMPANY LIMITED, PATNA Regd. Office :- Vidyut Bhawan, Bailey Road, Patna-21

LottorNo	1944	/Patna
Letter No	19 <del>44</del>	/Pallia,

Date.....30.06.2014..../

From,

Sanjay Kumar Singh, Managing Director.

To.

G.M.-cum-C.E..

Transmission Zone Patna/Muzaffarpur.

Electrical Superintending Engineer,

Transmission Zone, Patna/Muzaffarpur/Purnea/Dehri-on-Sone/

Bhagalpur/Biharsharif/Gaya.

All Electrical Executive Engineer,

Transmission Division.

All Assistant Executive Engineer,

Transmission Sub-division/Sub-stations.

Sub: Strict Compliance of Standard Operating Procedure (SOP) issued and circulated to all.

Sir,

As you are aware that, SOP related with maximum time limit allowed for restoration of break down in GSS Switch Yard equipments, Bus Bars, Jumpers and also of Transmission lines, Towers etc., has been prepared and circulated to all Transmission Zones/ Circles/ Divisions/Sub-divisions for its compliance. But it has been found that this SOP is only on paper and concerned Executive Engineers/Assistant Engineers are not adhering to the time limits as specified in SOP.

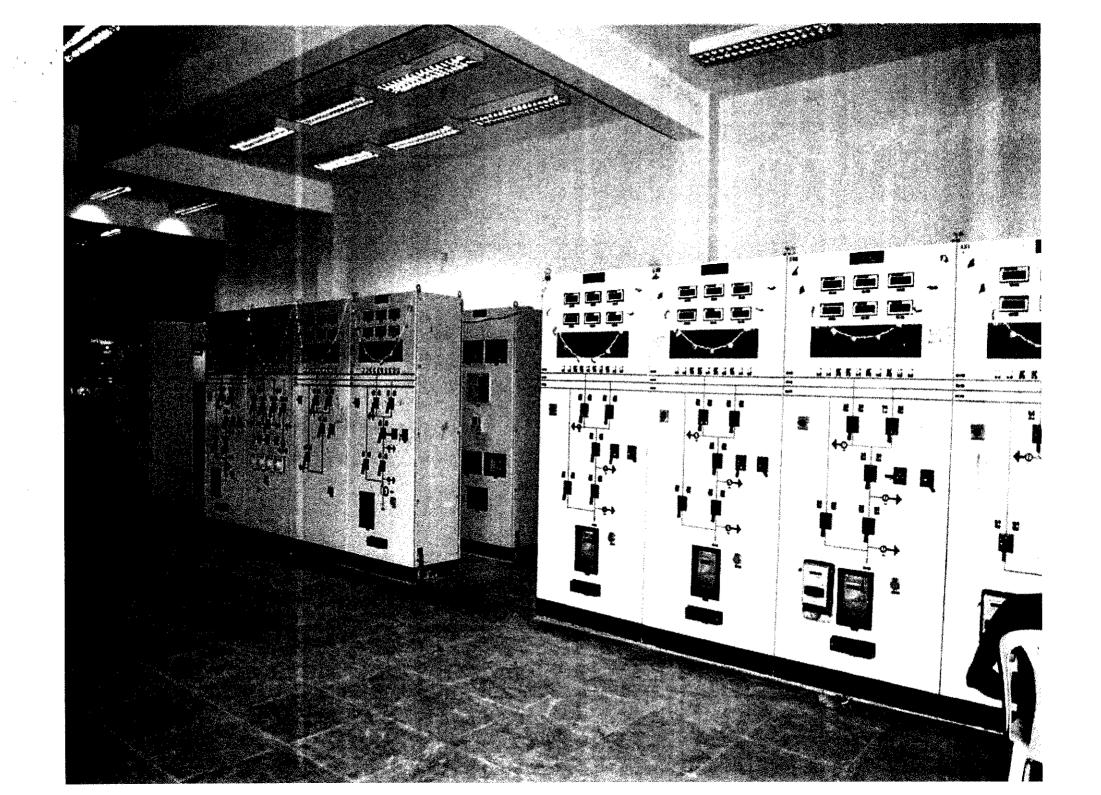
To enforce SOP in its true perspective, you all are hereby again directed to maintain the maximum time limits as has been fixed in the SOP. In case of any deviation the following action will be taken as detailed given below:

1. AEE

(i) One yellow card for each delay in restoration of Breakdown.

	(ii) One red card after issue of four yellow cards wi	th initiation of Departmental Proceeding.
2. EEE	: (i) One yellow card for every two yellow cards issu (ii) One red card after issue of four yellow cards wi	
3. ESE	: (i) One yellow card for every two yellow cards issu (ii) One red card after issue of four yellow cards wi	
4. G.Mcum-C.E., Trans. Zone	: (i) One yellow card for every two yellow cards issu (ii) One red card after issue of four yellow cards wit	
5. C.E., Trans. (O & M), HQ.:	: (i) One yellow card for every two yellow cards issum Muzaffarpur.	ued to any G.Mcum-C.E., Trans. Zone, Patna/
	(ii) One red card after issue of four yellow cards wi	th initiation of Departmental Proceeding.
	of one yellow card, the concerned officer will submit a pted, his yellow card will be withdrawn.	detail report about the cause of delay. In case his
		Yours faithfully, Sd/- (Sanjay Kumar Singh) Managing Director
Memo No	/Patna,	Date/
	ded to Director (Projects), BSPTCL, Patna/ C.E. (Trans kind information & necessary action.	mission)/C.E., Trans. (O & M)/DGM (HR & Adm.),

Sd/-(Sanjay Kumar Singh) Managing Director







#### BIHAR STATE POWER TRANSMISSION COMPANY LTD., PATNA

Regd. Office- Head Office, Vidyut Bhawan, Bailey Road, Patna - 21 CIN - U74110BR202SGC018889

E-mail - operation.maint@bsptcl.bihar.gov.in,

Website: www.bsptcl.in

From,

Deepak Kumar Jha, Chief Engineer (O&M)

To.

Deputy General Manager. HR/Admin., BSPTCL

Sub: Regarding provision of SOP of BSPTCL.

Your letter no- T-I/DP/CE-41004/2022/2323 dated 10.09.2024 Ref:

Sir.

With reference to letter under reference, please find enclosed herewith approved SOP regarding operation and maintenance of GSS and lines of BSPTCL.

Further, in case of repair of damaged Power Transformer, following procedures may be followed: -

- 1. Inspection/Testing of Power Transformer is done by CRITL /T&C team. They repairs/ resolve issues found in Transformer and if Transformer seems unrepairable, then CRITL /T&C team recommend to contact OEM or authorized repair workshop regarding repair of Transformer.
- 2. Insurance claim is intimated to insurance agency by field officials if any type of loss or any damage of Power Transformer occurs at sites of BSPTCL.
- 3. Repair of Transformer-
  - Damaged Transformer may be repaired at sites/sent to factory by taking quotation from Original Equipment Manufacturer after physical verification at sites of BSPTCL. All the terms & conditions are mentioned in Work order.

OR'

Damaged Transformer may be repaired by inviting bids through e-tendering process. All the terms & conditions are mentioned in Work order.

Transit policy is issued by insurance agency on request of field officials before transportation of damaged Transformer to factory of OEM.

After repair of Transformer, insurance claim is settled by insurance agency on basis of actual cost incurred in repair of damaged Transformer.

This is for your kind information and needful.

Encl: As above

8071/US-7 30/09/24

Yours faithfully.

(Deepak Kumar Jha) Chief Engineer, (O&M)