

## RAJASTHAN ELECTRICITY REGULATORY COMMISSION

### NOTIFICATION

Jaipur, \_\_\_\_\_, 2021

**No. RERC/Secy/Reg - \_\_\_\_ -** In exercise of the powers conferred under Section 181(2)(za) read with section 57 (1), 57 (2), 59 and 86 (1)(i) of the Electricity Act, 2003 (Act 36 of 2003) and all other powers enabling it in this behalf, the Rajasthan Electricity Regulatory Commission, after prior publication, hereby makes the following Regulations, namely:

#### 1 Short title and applicability

- 1.1 These Regulations may be called as 'Rajasthan Electricity Regulatory Commission (Standards of Performance of Transmission Licensee) Regulations, 2021';
- 1.2 These Regulations shall come into force on the date of their publication in official gazette.

#### 2 Definitions

- (1) **"Act"** means the Electricity Act, 2003 (36 of 2003), including amendments thereto;
- (2) **"Affected Person"** means a User of State Transmission System, who is affected due to non-adherence to the Standards of Performance specified in these regulations by transmission licensee;
- (3) **"Delivery Point or Interconnection point"** means the point where electric power is supplied from State transmission system to the User.
- (4) **"EHV/EHT"** means Voltage level above 33,000 volts;
- (5) **"Force Majeure Event"** means, with respect to any party, any event or circumstance, which is not within the reasonable control of, or due to an act or omission of, that party and which, by the exercise of reasonable care and diligence, that party is not able to prevent, including, without limiting the generality of the foregoing:
  - (a) acts of God, including but not limited to lightning, storm, earthquakes, flood, drought and natural disaster;
  - (b) strikes, lockouts, go-slow, bandh or other industrial disturbances;

(c) acts of public enemy, wars (declared or undeclared), blockades, insurrections, riots, revolution, sabotage, vandalism and civil disturbance;

(d) unavoidable accident, including but not limited to fire, explosion, radioactive contamination and toxic chemical contamination;

(e) any shutdown or interruption of the grid, which is required or directed by the State or Central Government or by the Commission or the State Load Despatch Centre;

- (6) **“Intra-State Transmission Licensee” or “Transmission Licensee”** means a licensee including a deemed licensee authorized to establish, operate and maintain transmission lines within the State, as per the provisions of the Act.
- (7) **“Rajasthan Electricity Grid Code (REGC)”** means the Grid Code specified by Rajasthan Electricity Regulatory Commission under clause (h) of sub-section (1) of Section 86 of the Act, as amended from time to time;
- (8) **“RERC” / Commission** means Rajasthan Electricity Regulatory Commission referred to in sub-section (1) of Section 82 of the Act;
- (9) **“State”** means the State of Rajasthan;
- (10) **“State Load Despatch Center (SLDC)”** means the Centre established by the State Government for the purpose of exercising the powers and discharging the functions under Section 31 of the Act;
- (11) **“State Transmission System (STS)”** means the EHV/HV electric lines system and electrical equipments operated and/or maintained by Transmission Licensee for the transmission of electricity between Generating Stations, External Interconnections or the Distribution System or the connected Users within the State;
- (12) **“State Transmission Utility (STU)”** means the utility notified by the State Government under sub-section (1) of Section 39 of the Act;
- (13) **“System Average Interruption Duration Index” (SAIDI)** means the average duration of sustained interruptions at time occurring during the reporting period for a voltage class, determined by dividing the number of EHV sub-stations in service during the reporting period having that class of voltage supply;
- (14) **“System Average Interruption Frequency Index” (SAIFI)** means the average frequency of sustained interruptions at time occurring during the reporting period for a voltage class, determined by dividing the number of EHV sub-stations in service during the reporting period

having that class of voltage supply;

(15) **“User”** means any person who uses any segment/ element of the State Transmission System including Generating Station located in the State, Independent Power Producer(s), Renewable Energy Power Plant, Distribution Licensee, Deemed Licensee, Open Access customer interconnected to State Transmission System and entered into Transmission Service Agreement with Transmission Licensee.

(16) **“Year”** means financial year.

2.1 The words and expressions used in these Regulations and not defined herein, but defined in the Act or any other Regulations of the Commission, shall have the meaning assigned to them under the Act or any other Regulation of the Commission

### **3 Objective**

3.1 These standards of performance shall serve as guidelines for transmission licensee to operate its State Transmission System for providing an efficient, reliable, coordinated and economical system of electricity supply and transmission.

3.2 These standards set the levels of operational security and quality of supply, which licensee shall be obliged to maintain in making power available for the purposes of supply to/ receipt from user as laid down in the Transmission Licence. The objectives of the performance standards are:

(1) To ensure that the Grid Performance meets a minimum standard, which is essential for the Users' system demand and the equipment function properly.

(2) To enable the Users to design their systems and equipment to suit the electrical environment that they operate in.

(3) To ensure compliance of Standards of Performance by Transmission Licensees.

### **4 Scope**

The Standards of performance specified in these Regulations shall be applicable to all Transmission licensees in the State of Rajasthan.

## 5 Standards of performance

5.1 All transmission licensees shall comply with the following Standards of performance specified in these Regulations:

- (1) Availability
- (2) SAIFI and SAIDI
- (3) Restoration Time

Provided that Standards of performance as specified in these Regulations shall be minimum standards that transmission licensee shall achieve and maintain:

Provided further that any time limits set out in these regulations shall refer to maximum time permitted for performing activities to which they relate to:

Provided also that transmission licensee shall also comply “Standards for Operation and Maintenance of Transmission Lines” as specified in Central Electricity Authority (Grid Standards) Regulations, 2010, as amended from time to time.

5.2 Any failure to achieve and maintain the standards of performance specified in Clause (1) and (3) of Regulation 5.1 shall render the Transmission Licensee liable to payment of compensation as specified in these Regulations.

## 6 Availability

6.1 Availability of a transmission element/ System for a given period is the time during which transmission system is capable of transmitting electricity at its rated overage to the delivery point, which shall be computed as per regulation 6.3.

6.2. The element-wise monthly availability of the transmission system shall not be below the availability as given below:

<b>Transmission Elements</b>	<b>Availability (% of time)</b>
AC Transmission line	90
Power Transformer/Inter connecting Transformer (ICT)	90
Reactors	90
Static VAR Compensator	90
Series Compensator	90
HVDC (Back-to-back Stations and bi-pole links)	85

Note:

- (1) Tower collapse upto limit specified in Regulation 8 shall not be counted for the purpose of calculation of monthly availability of AC transmission line and HVDC bipole line under these Regulations.
- (2) Failure of Power Transformer and Reactor upto limit specified in Regulation 8 shall not be counted for the purpose of calculation of availability of Power Transformer and Reactor under these Regulations.

Provided that the element-wise availability and total system availability for month as well as for whole year shall be calculated by transmission licensee and duly certified by the SLDC:

Provided also that the norms of Availability of Transmission System for recovery of Annual Transmission Charges and Incentive shall be as specified in Transmission Service Agreement or Rajasthan Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2019, as amended from time to time.

### 6.3 Methodology for computation of Availability:

- 6.3.1 Transmission System Availability factor for  $n^{\text{th}}$  month or for a year ( $\text{TSAF}_n$ ) shall be calculated by transmission licensee and duly certified by the SLDC, separately for each AC and HVDC transmission system.
- 6.3.2 Transmission System Availability factor for  $n^{\text{th}}$  month or for a year ( $\text{TSAF}_n$ ) shall be calculated by considering the following:
  - (a) **AC transmission lines:** Each circuit of AC transmission line shall be considered as one element;
  - (b) **Power Transformer:** Each Power Transformer shall form one element;
  - (c) **Inter-Connecting Transformers (ICTs):** Each ICT bank (three single phase transformers together) shall form one element;
  - (d) **Static VAR Compensator (SVC):** SVC along with SVC transformer shall form one element;
  - (e) **Bus Reactors or Switchable line reactors:** Each Bus Reactors or Switchable line reactors shall be considered as one element;
  - (f) **Static Synchronous Compensation ("STATCOM"):** Each STATCOM shall be considered as separate element.

- (g) **HVDC Bi-pole links:** Each pole of HVDC link along with associated equipment at both ends shall be considered as one element;
- (h) **HVDC back-to-back station:** Each block of HVDC back-to-back station shall be considered as one element. If associated AC line (necessary for transfer of inter- regional power through HVDC back-to-back station) is not available, the HVDC back-to-back station block shall also be considered as unavailable;

6.3.3 The Availability of AC Transmission system shall be calculated by considering each category of transmission elements as under:

**Computation of Availability for AC System**

$$TSAFn \text{ (in \% for AC System)} = \frac{(o \times AV_o) + (p \times AV_p) + (q \times AV_q) + (r \times AV_r) + (u \times AV_u)}{o + p + q + r + u} \times 100$$

Where,

o = Total number of AC lines.

AV<sub>o</sub> = Availability of o number of AC lines.

p = Total number of bus reactors/switchable line reactors

AV<sub>p</sub> = Availability of p number of bus reactors/switchable line reactors

q = Total number of Power Transformers/ICTs.

AV<sub>q</sub> = Availability of q number of Power Transformers/ICTs.

r = Total number of SVCs.

AV<sub>r</sub> = Availability of r number of SVCs

u = Total number of STATCOM.

AV<sub>u</sub> = Availability of u number of STATCOMs

The availability for each category of transmission elements shall be calculated based on the weightage factor, total hours under consideration and non-available hours for each element of that category. The formulae for calculation of Availability of each category of the transmission elements are as under:

$$AV_o \text{ (Availability of } o \text{ nos. of AC lines)} = \frac{\sum_{i=1}^o W_i (T_i - TNA_i)/T_i}{\sum_{i=1}^o W_i}$$

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$$AV_q \text{ (Availability of } q \text{ nos. of Power Transformers/ICTs)} = \frac{\sum_{k=1}^q W_k (T_k - TN_{Ak})/T_k}{\sum_{k=1}^q W_k}$$

$$AV_r \text{ (Availability of } r \text{ nos. of SVCs)} = \frac{\sum_{l=1}^r W_l (T_l - TN_{Al})/T_l}{\sum_{l=1}^r W_l}$$

$$AV_p \text{ (Availability of } p \text{ nos. of Swieth Bus Reactors)} = \frac{\sum_{m=1}^p W_m (T_m - TN_{Am})/T_m}{\sum_{m=1}^p W_m}$$

$$AV_u \text{ (Availability of } u \text{ nos. of STATCOMs)} = \frac{\sum_{n=1}^u W_n (T_n - TN_{An})/T_n}{\sum_{n=1}^u W_n}$$

Where,

o = Total number of AC lines;

AV<sub>o</sub> = Availability of o number of AC lines;

p = Total number of bus reactors/switchable line reactors;

AV<sub>p</sub> = Availability of p number of bus reactors/switchable line reactors;

q = Total number of Power Transformers/ICTs;

AV<sub>q</sub> = Availability of q number of Power Transformers/ICTs;

r = Total number of SVCs;

AV<sub>r</sub> = Availability of r number of SVCs;

U = Total number of STATCOM;

AV<sub>u</sub> = Availability of u number of STATCOMs;

W<sub>i</sub> = Weightage factor for i<sup>th</sup> transmission line;

W<sub>k</sub> = Weightage factor for k<sup>th</sup> Power Transformers/ICTs;

W<sub>l</sub> = Weightage factors for inductive & capacitive operation of l<sup>th</sup> SVC;

W<sub>m</sub> = Weightage factor for m<sup>th</sup> bus reactor;

W<sub>n</sub> = Weightage factor for n<sup>th</sup> STATCOM.

T<sub>i</sub>, T<sub>k</sub>, T<sub>l</sub>, T<sub>m</sub>, T<sub>n</sub> - The total hours of i<sup>th</sup> AC line, k<sup>th</sup> Power Transformers/ICTs, l<sup>th</sup> SVC, m<sup>th</sup> Switched Bus Reactor & n<sup>th</sup> STATCOM blocks during the period under consideration (excluding time period for outages not attributable to transmission licensee for reasons given in the following paras)

TNA<sub>i</sub>, TNA<sub>k</sub>, TNA<sub>l</sub>, TNA<sub>m</sub>, TNA<sub>n</sub> - The non-availability hours (excluding the time period for outages not attributable to transmission licensee taken as deemed availability as per following paras) for *i*th AC line, *k*th Power Transformers/ICTs, *l*th SVC, *m*th Switched Bus Reactor and *n*th STATCOM.

6.3.4 The Availability of HVDC Transmission system shall be calculated by considering each category of transmission elements as under:

**Computation of Availability for HVDC System**

$$TSAFn \text{ (in \%)} \text{ for HVDC System} = \frac{\sum_{x=1}^s Cx_{bp}(\text{act}) \times AVx_{bp} + \sum_{y=1}^t Cy_{btb}(\text{act}) \times AVy_{btb}}{\sum_{x=1}^s Cx_{bp} + \sum_{y=1}^t Cy_{btb}} \times 100$$

Where

Cx<sub>bp</sub>(act) = Total actual operated capacity of *x*th HVDC pole

Cx<sub>bp</sub> = Total rated capacity of *x*th HVDC pole

AVx<sub>bp</sub> = Availability of *x*<sup>th</sup> HVDC pole

Cy<sub>btb</sub>(act) = Total actual operated capacity of *y*<sup>th</sup> HVDC back-to-back station block

Cy<sub>btb</sub> = Total rated capacity of *y*<sup>th</sup> HVDC back-to-back station block

AVy<sub>btb</sub> = Availability of *y*<sup>th</sup> HVDC back-to-back station block

s = Total no of HVDC poles

t = Total no of HVDC Back to Back blocks

The availability for each category of transmission elements shall be calculated based on the weightage factor, total hours under consideration and non-available hours for each element of that category. The formulae for calculation of Availability of each category of the transmission elements are as under:

$$AVx_{bp} \text{ (Availability of an individual HVDC pole)} = \frac{T_x - TNA_x}{T_x}$$

$$AVy_{btb} \text{ (Availability of an individual HVDC back - to - back blocks)} = \frac{T_y - TNA_y}{T_y}$$



### For HVDC Transmission System

For the new HVDC commissioned but not completed twelve months;

For first 12 months:  $[(AV_{x\text{bp}} \text{ or } AV_{y\text{btb}}) \times 95\%/85\%]$ , subject to ceiling of 95%.

T<sub>x</sub>, T<sub>y</sub> - The total hours of xth HVDC pole and yth HVDC back-to-back blocks during the period under consideration (excluding time period for outages not attributable to transmission licensee for reasons given in the following paras)

TN<sub>Ax</sub>, TN<sub>Ay</sub> - The non-availability hours (excluding the time period for outages not attributable to transmission licensee taken as deemed availability as per following paras) for xth HVDC pole and yth HVDC back-to-back block.

6.3.5 The weightage factor for each category of transmission elements shall be considered as under:

- (a) For each circuit of AC line - ckt-km;
- (b) For each HVDC pole- The rated MW capacity x ckt-km;
- (c) For each Power Transformer/ICT - The rated MVA capacity;
- (d) For SVC- The rated MVAR capacity (inductive and capacitive);
- (e) For Bus Reactor/switchable line reactors - The rated MVAR capacity;
- (f) For HVDC back-to-back station connecting two Regional grids- Rated MW capacity of each block; and
- (g) For STATCOM - Total rated MVAR Capacity.

6.3.6 The transmission elements under outage due to following reasons shall be deemed to be available:

- (a) Shut down availed for maintenance of another transmission scheme or construction of new element or renovation/upgradation/additional capitalization in existing system approved by the Commission:

Provided that, if the other transmission scheme belongs to the transmission licensee, SLDC may restrict the deemed availability

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period to that considered reasonable for the work involved:

Provided further that, in case of dispute regarding deemed availability, the matter shall be referred to SPC within thirty (30) days.

- (b) Switching off of a transmission line to restrict over voltage and manual tripping of switched reactors as per the directions of SLDC or NRLDC.
- (c) Shutdown of healthy circuit in double circuit line for attending breakage in one circuit.

6.3.7 For the following contingencies, outage period of transmission elements, as certified by SLDC, shall be excluded from the total time of the element under period of consideration :

- (a) Outage of elements due to acts of God and force majeure events beyond the control of the transmission licensee. However, whether the same outage is due to force majeure (not design failure) will be verified by SLDC. A reasonable restoration time for the element shall be considered by SLDC and any additional time taken by the transmission licensee for restoration of the element beyond the reasonable time shall be treated as outage time attributable to the transmission licensee:

Provided that SLDC may consult the transmission licensee or any expert for estimation of reasonable restoration time:

Provided further that circuits restored through ERS (Emergency Restoration System) shall be considered as available.

- (b) Outage caused by grid incident/disturbance not attributable to the transmission licensee, e.g., faults in substation or bays owned by other agency causing outage of the transmission licensee's elements, and tripping of lines, Power Transformer/ICTs, HVDC, etc. due to grid disturbance. However, if the element is not restored on receipt of direction from SLDC while normalizing the system following grid incident/disturbance within reasonable time, the element will be considered not available for the period of outage after issuance of RLDC's direction for restoration:

Provided that in case of any disagreement with the transmission licensee regarding reason for outage, same may be referred to SPC

within 30 days. The above need to be resolved within two months:  
Provided further that where there is a difficulty or delay beyond sixty days, from the incidence in finalizing the recommendation, the SLDC shall allow the outage hours on provisional basis till the final view.

## **7 System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI)**

7.1 SAIFI and SAIDI shall be calculated on monthly basis as per following formula -

(a) System Average Interruption Frequency Index (SAIFI)

$$SAIFI = \Sigma I / N$$

Where,

$\Sigma I$  = Sum number of interruptions exceeding 5 minutes at a time duration in the month for the voltage class.

N = Number of EHV sub stations in service at the beginning of month having that class of voltage supply.

(b) System Average Interruption Duration Index (SAIDI)

$$SAIDI = \Sigma D / N$$

Where,

$\Sigma D$  = Sum of duration all interruptions of exceeding 5 minutes at a time in the month for the voltage class.

N = Number of EHV sub stations in service at the beginning of month having that class of voltage supply.

Provided that all interruptions of duration exceeding 5 (five) minute at a time shall be considered for computation of indices:

Provided further that interruptions due to scheduled outage (including three shift operation of agriculture pump sets), load shedding to meet capacity shortage, failure of inter-state transmission system or failure of generating units (leading to grid failure or system islanding) shall be excluded:

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7.2 The monthly SAIFI and SAIDI for the transmission system shall not exceed standards as given in the Table below:

<b>SAIFI</b>	<b>SAIDI</b>
2 interruptions per month	30 minutes per month

7.3 SAIFI and SAIDI shall be calculated by Transmission Licensee on monthly basis for each voltage class and duly certified by SLDC.

**8 Restoration Time**

Restoration time for different types of failures of transmission line, power transformers and reactors shall not exceed the following time limit:

<b>Sl. No.</b>	<b>Type of Failures</b>	<b>Restoration Time (Days)</b>
1.	Insulator failure	
	Plain Terrain	1
	Hilly/Desert Terrain	2
2.	Tower after collapse by Emergency Restoration System (ERS)	12
3.	Tower after collapse	
	Plain Terrain	30
	River Bed	50
	Hilly/Desert Terrain	50
4.	Phase conductor broken	
	Plain Terrain	2
	Hilly/Desert Terrain	3
5.	Failure of earth wire	
	Plain Terrain	2
	Hilly/Desert Terrain	3
6.	Failure of Power Transformer	
	Restoration of failed Power Transformer	120
7.	Failure of Reactors	
	Restoration of the failed reactor	120

Note: Hilly/Desert terrain shall be as per notification issued by Central/State government from time to time.

## 9 Payment of Compensation

Any failure by the transmission licensee to maintain the standards of performance specified in Regulation 6 and/or 8 shall render the said licensee liable to payment of compensation to an affected person claiming such compensation under the provisions of the Act.

Provided that any claim for such compensation shall be accompanied by the certification of SLDC.

Provided further that the payment of compensation by the transmission licensee shall be without prejudice to any penalty, which may be imposed or any prosecution which may be initiated by the Commission as provided in the Act.

## 10 Methodology for Compensation

10.1 An affected person may make an appropriate Petition to the Commission under Regulation 9 above for award of compensation along with necessary documentary evidences of being affected because of non-adherence of Standards of Performance.

10.2 The Commission shall determine the compensation after giving reasonable opportunity to the transmission licensees of being heard:

Provided further that the compensation to be paid by the transmission licensee to the affected party shall be limited to 1.5 times of the applicable transmission charges for the affected person during such period of non-adherence of Standards of performance:

Provided further that the transmission licensee shall not be entitled to recover the amount of compensation awarded through tariff from the users of the transmission of electricity:

Provided also that no claim for compensation shall be entertained, if the application for the claim is filed after expiry of a period of ninety (90) days from the end of the month when the availability of the transmission system falls short of the availability specified in Regulation 6 and ninety (90) days from the date of restoration of transmission element, as the case may be, for the standards prescribed in Regulation 8 of these regulations.

10.3 In case of non-compliance of the order/ direction passed by the Commission, proceeding under Section 142 of Act will be initiated.

## 11 Time frame for certification by SLDC:

Following schedule shall be followed for certification of Availability, SAIDI and SAIFI by SLDC:

- (a) Submission of Availability, SAIFI & SAIDI supported by outage data by Transmission Licensees to SLDC - By 15<sup>th</sup> of the following month;
- (b) Verification & issue of above certificate by SLDC - by 25<sup>th</sup> of the following month

Provided that total transmission availability for the year shall be calculated with the calculation of last month by transmission license and certified by SLDC.

## 12 Information to be furnished by Transmission Licensees

12.1 All transmission licensees, in accordance with Section 59 of the Act, shall furnish to the Commission,

- (1) The level of performance achieved regarding element wise system availability, total availability of transmission system, SAIFI and SAIDI;
- (2) Details of element where restoration time has exceeded the standards specified in Regulation 8;
- (3) Details of compensation paid by the Transmission Licensee.

Provided that such information shall be submitted in the formats in the Schedule of these regulations.

12.2 Such monthly information in the requisite formats shall be submitted to the Commission twice during the financial year, on six monthly basis by 31<sup>st</sup> October and 30<sup>th</sup> April for the periods April to September and October to March respectively:

Provided that such information also be displayed by the Commission on its website.

12.3 All transmission licensees shall display on their websites the actual performance against the specified Standards of Performance on a monthly basis and the aggregate amount of compensation paid, if any, in the formats enclosed in the Schedule.

## 13 Annual Review of Performance Standards

State Power Committee shall review the performance of each transmission licensee every year and submit its recommendations, if any,

to the Commission.

#### **14 Force Majeure**

The Commission may, if it considers necessary or expedient to do so and for the reasons to be recorded in writing, relax adherence to any specific Standard of Performance during Force Majeure event:

Provided that the transmission licensee shall not be discharged from its liability on account of its failure to maintain the Standards of Performance under these regulations, if such failure can be attributed to the negligence or deficiency or lack of preventive maintenance of the State transmission system or failure to take reasonable precaution which has resulted in loss to the affected person.

#### **15 Power to remove difficulties:**

If any difficulty arises in giving effect to these regulations, the Commission may suo-moto or on an application filed by any affected party, issue such directions as may be considered necessary in furtherance of the objective and purpose of these regulations.

#### **16 Power to amend**

The Commission may, at any time, vary, alter, modify or amend any provision of these Regulations.

#### **17 Repeal and Savings**

17.1 On commencement of these Regulations, the Rajasthan Electricity Regulatory Commission (Transmission Licensee's Standards of Performance) Regulations, 2004 and subsequent amendments shall stand repealed. Notwithstanding such repeal, anything done or any action already taken under the repealed regulations shall be deemed to have been done or taken under these Regulations.

17.2 Any reference to the Rajasthan Electricity Regulatory Commission (Transmission Licensee's Standards of Performance) Regulations, 2004 and subsequent amendments in any of the Regulations, standards, codes or procedures of the Rajasthan Electricity Regulatory Commission shall deemed to be replaced by the Rajasthan Electricity Regulatory Commission (Standards of Performance of transmission licensee) Regulations, 2021.

**By Orders of the Commission,**

**Secretary**

**SCHEDULE A**

**Information to be furnished by Transmission Licensee to SLDC**

**Outage Details of AC Transmission Line/ Power Transformers/ Static VAR Compensator/ Series Compensator/ HVDC (Back-to-Back Stations and Bi-Pole Links)/ Line Reactors/ Bus Reactors for the month of \_\_\_\_\_**

(I) Element wise Availability

Element Name	Outage	Restoration	Reason of Outage	Duration of Outage Attributable to				Weightage factor (w)	% Availability
	Date Time	Date Time		Transmission Licensee	Others	Force Majeure Conditions	Deemed Available as per Reg 6.3.6 & 6.3.7		
				Hrs:Min	Hrs:Min	Hrs:Min	Hrs:Min		

(II) The restoration times for different types of failures of a transmission line and failure of power transformer and reactor in the following format:

Sl. No.	Types of failures	Restoration time in Regulation 8		Actual restoration time (in days)
		Table Ref. No.	Specified time (in days)	
1.	Insulator failure			
2.	Tower after collapse by Emergency Restoration System (ERS)			
3.	Tower after collapse			



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<b>Sl. No.</b>	<b>Types of failures</b>	<b>Restoration time in Regulation 8</b>		<b>Actual restoration time (in days)</b>
		<b>Table Ref. No.</b>	<b>Specified time (in days)</b>	
4.	Phase conductor broken			
5.	Failure of earth wire			
6.	Failure of Power Transformer			
	Restoration of failed Power Transformer			
7.	Failure of Reactors			
	Restoration of the failed reactor			

**SCHEDULE B**

**Information to be submitted by Transmission Licensee to the Commission**

**Outage Details of AC Transmission Line/ Power Transformers/ Static VAR Compensator/ Series Compensator/ HVDC (Back-to-Back Stations and Bi-Pole Links)/ Line Reactors/ Bus Reactors for the month of \_\_\_\_\_**

(I) Element wise Transmission System Availability

Particulars	Total outage time during month (minutes)	Total outage time during month considered for computation of Availability (minutes)	% Availability during the month	Remarks, if any
AC Transmission line				
Power Transformer/ Inter connecting Transformer (ICT)				
Reactors				
Static VAR Compensator				
Series Compensator				
HVDC (Back-to-back Stations and bi-pole links)				

*Note – Total Outage time shall be summation of outage time of all elements during the month*

(II) Availability of the AC and HVDC Transmission System

	Year	% Availability
AC Transmission System		
HVDC Transmission System		

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(III) SAIFI and SAIDI of the Transmission System

Month	SAIFI (in Numbers)	SAIDI (in mins)

(IV) Details of Elements where restoration time has exceeded the standards specified in Regulation 8.

Element Name	Restoration time as specified in Regulation 8 (in days)	Actual restoration time (in days)

(V) Details of compensation paid by the transmission licensee

Element Name	Violation of Regulation 6		Violation of Regulation 8		Compensation Paid (in Rs.)
	% Availability Prescribed	Actual % Availability	Restoration time as per Regulation (in days)	Actual restoration time (in days)	
Total					