

RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LIMITED

[Corporate Identity Number (CIN) : U40109RJ2000SGC016485]

OFFICE OF THE SUPERINTENDING ENGINEER(QC-Inspection & Monitoring)

Regd. Office: VidyutBhawan, Jyoti Nagar, Jaipur -302005

(AN ISO 9001: 2008 CERTIFIED COMPANY)

E-mail: se.qc.insp@rvpn.co.in; Website: www.rvpn.co.in

No. RVPN/SE/QC-Insp.& Montg./ XEn-2/ISO/F.2/D474 Dated 31.3.17

The Zonal Chief Engineer
Ajmer/Jaipur/Jodhpur
RVPN.

Sub: Change in ISO documents.

On the captioned subject the change as approved are being issued with an issue change note No.11 for implementation (enclosed). The controlled copies of these documents may be sent to circles under your jurisdiction which may further distribute it to concerned division and subdivisions. The available obsolete copies of these documents may be destroyed/stamped "obsolete" and kept in as a record and information may be given to this office.

Encl: As Above.

(Nutan Kumar Gupta)
Superintending Engineer
(QC, Insp & Mont.)
RVPN, Jaipur



**Format For
Issue Change Note**

DOC : RVPN/MR/F/01-03
Issue No. : 01
Page No.: 1 of 1
Page Rev No. : 01
Effective Date : 01-04-2017

ICN NO: 11

Date: 31-03-2017

Following new / amended documents have been prepared and are being issued:

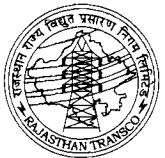
S. No.	Doc. Title	Version No.	No. of pages	Page No.	Page Rev.No.	Remarks/Nature of change
1.	Transformer Maintenance schedule of	02	03	1 to 3	01	Complete change
2.	Circuit Breaker	02	02	1 to 2	01	"
3.	C.V.T.	02	01	1	01	"
4.	C.T.	02	01	1	01	"
5.	L.A.	02	01	1	01	"
6.	Isolator	02	01	1	01	"

You are requested to insert these documents in the set of documents issued to you. Any available obsolete copies of these documents, if applicable, may be destroyed by you.

[Signature]
31/3/2017
(MR)

PREPARED BY <i>[Signature]</i> XEN(QC)	REVIEWED BY <i>[Signature]</i>	APPROVED BY <i>[Signature]</i> 31/3/17
Date:	Date:	Date:

CONTROLLED

	FORMAT FOR OPERATION & MAINTENANCE OF GRID SUB STATIONS	DOCUMENT NO : RVPN/T&C/F/02/02
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MAINTENANCE SCHEDULE OF CIRCUIT BREAKERS

Name of Sub Station:

PARTICULARS OF EQUIPMENT:

Make: Sr.No. Voltage Rating: Yr. of Manufacture:



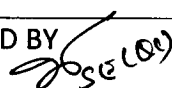
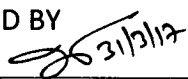
Dt. of Commissioning: Rupturing Capacity: Normal SF6 Pressure:

MONTHLY MAINTENANCE


S.No	Check / Activities	Data / Remarks											
		Date											
1	Record the counter reading												
2.	Cleaning and checking of Control Cubicle and tightening of connections therein												

QUARTERLY MAINTENANCE

S.No	Check / Activities	Data / Remarks			
		Date	Date	Date	Date
1	Measurement of Insulation Resistance between the upper & lower terminals of the same Pole (in case of V.C.B.) when the Circuit Breaker is in open position(it should be > 50 G Ohm).				
2.	Check air leakage from storage tank and pipe joints etc in case of pneumatic operated circuit breakers. To check V-belt tension(of air compressor) and replace it if required				
3.	Check Alarm & Indication circuits				
4.	Check/clean/tight control & relay panel wiring				
5.	Check operation of Circuit Breaker(through protection system) if it has not operated during the last three months				

PREPARED BY 	REVIEWED BY 	APPROVED BY 	ISSUED BY 
Date:	Date:	Date:	Date:

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HALF YEARLY MAINTENANCE

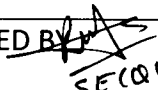

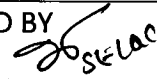
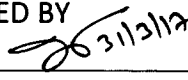
S.No	Check / Activities	Data / Remarks	
		Date	Date
1	Tightening of clamps, fixtures, jumpers etc and that of linkages and rods in the mechanism		
2.	Maintenance of Air Compressor		

YEARLY MAINTENANCE


S.No	Check / Activities	Data / Remarks
1	Check the Pole Discrepancy relay(220KV & above)	
2.	Check the operation times(C, O, C-O).	
3.	Check all operational lock outs.	
4.	Measurement of contact resistance	

Note: In addition to the routine maintenance as mentioned above, overhauling of circuit breakers is to be done as per its O&M manual provided by the manufacturer.

Sign. of JEN (M)	Sign. of AEN(M)	Sign. Of S/S Incharge
	S/S Incharge	

PREPARED BY  SE(O&M)	REVIEWED BY 	APPROVED BY  SE(O&M)	ISSUED BY 
Date:	Date:	Date:	Date:

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MAINTENANCE SCHEDULE OF TRANSFORMER

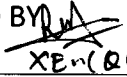

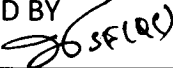
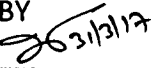
Name of Sub-Station _____

DETAILS OF PARTICULARS

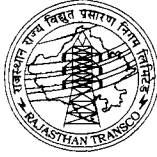
MAKE /CAPACITY	VOLTAGE RATIO :	(%) IMPEDANCE :
NO. OF TAPS :		
SR. NO :		
DATE OF COMMISSIONING :		
DATE OF ANY MAJOR REPAIRING/OVERHAULING :		
BUSHING's TYPE (CONDENSER TYPE/HERMETICALLY SEALED/UNSEALED)		

MONTHLY MAINTENANCE

S.No.	Check / Activities	Date / Remarks									
		Date									
1.	Check oil level in the Main Conservator tank										
2.	Check oil level in breather cup between lower and upper markings at glass.										
3.	Check condition of silicagel(change if required).										
4.	Check oil level in the OLTC conservator tank.										
5.	Observe air in the Main Conservator oil(if oil level in oil sight glass is not full, air is present).										
6.	Check auto starting of cooler oil pumps and fans in local/remote/auto modes.										
7.	Cleaning of marshalling box/control cubicle & tightening of connections therein										
8.	Check Nitrogen Pressure in case of transformers provided with fire protection system										

PREPARED BY  XEN(RC)	REVIEWED BY 	APPROVED BY  SF(RC)	ISSUED BY  26/3/17
Date:	Date:	Date:	Date:

CONTROLLED

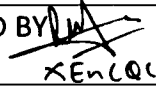

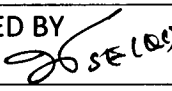
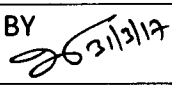
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QUARTERLY MAINTENANCE


S.No.	Check / Activities	Data / Remarks			
		Date	Date	Date	Date
1.	Check bushings for cracks & clean dirt deposits.				
2.	To check oil level in the bushings.				
3.	Record the counter reading of OLTC.				
4.	Check the OLTC driving mechanism for any loosening of nuts & bolts etc.				

HALF YEARLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks	
		Date	Date
1.	Electrical checking/testing of P.R.D., Buchholz Relay and OLTC Surge Relay		
2.	Measure the Insulation Resistance(IR) of the windings with the help of a 5KV Megger(also mention winding temp. at the time of IR Measurement).		
3.	Tightening of nuts & bolts of clamps, fixtures, jumpers etc.		
4.	Perform BDV and DGA tests of the oil of the main tank(Two sample – Top & Bottom). The samples should be taken during clear weather.		
5.	Check and adjust(if required) temperature settings for the operation of cooling fans and oil pumps		
6.	Maintenance of OLTC driving mechanism, i.e., motor, shaft, gear, coupling etc.		

PREPARED BY  XEN(O)	REVIEWED BY 	APPROVED BY  SE(O)	ISSUED BY 
Date:	Date:	Date:	Date:

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YEARLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks
1.	External cleaning of Radiators	
2.	Check oil in the temperature pockets and calibrate the WTI & OTI meters.	
3.	Measure Earth Resistance of neutral(it should be less than one ohm	
4.	Test Buchholz relay by draining oil from it & the PRD for its healthiness by operating its plunger	
5.	Perform mock drill operation of fire protection system	

Activities to be performed once in two years

S.No.	Check / Activities	Data / Remarks
1.	Replace the oil of the diverter compartment, irrespective of its condition, with fresh and filtered oil.	
2.	Measure Capacitance and Tan Delta of the Bushings of Transformer.	

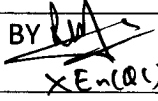

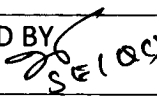
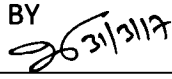
Activities to be performed once in four years

S.No.	Check / Activities	Data / Remarks
1.	Clean and check the diverter contacts for any wear and tear. Replace the worn out contacts.	

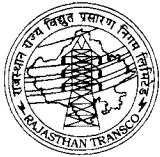
Sign of JEN(M)

Sign of AEN(M)

Sign of Incharge GSS

PREPARED BY  XEN(QC)	REVIEWED BY 	APPROVED BY  SE(QC)	ISSUED BY  26/3/2017
Date:	Date:	Date:	Date:

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MAINTENANCE SCHEDULE OF CURRENT TRANSFORMER(CT)

Name of GSS

Particulars of Equipment:-

Make: Location: CT Ratio:

Sr.No. Yr of Manufacture: Date of Commissioning:

QUARTERLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks			
		Date	Date	Date	Date
1.	Check oil level				
2.	Cleaning of marshalling box/junction box and tightening of terminals.				

HALF YEARLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks	
		Date	Date
1.	Cleaning terminal box(at the bottom of the CT) and tightening of terminals. Ensure that no hole in the plate cover is open which was not needed for wiring		
2.	Measurement of Insulation Resistance(IR).		
3.	Tightening of primary clamp, jumper etc.		
4.	Cleaning of Bushing and checking it for cracks etc.		

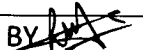

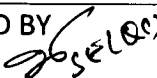
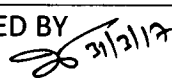
Activities to be performed once in two years:-

S.No.	Check / Activities	Data / Remarks & Date
1.	Capacitance and tan delta measurement	

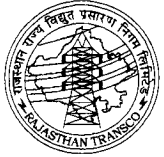
Sign of JEN(M)

Sign of AEN(M)

Sign of Incharge GSS

PREPARED BY  XEN(QL)	REVIEWED BY 	APPROVED BY  SE(LQ)	ISSUED BY 
Date:	Date:	Date:	Date:

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MAINTENANCE SCHEDULE OF CAPACITOR VOLTAGE TRANSFORMER(C.V.T.)

Name of S/S : _____

PARTICULARS OF EQUIPMENTS:

MAKE : _____ Sr.No.: _____ Location: _____

VOLTAGE RATIO : _____ IMPULSE WITHSTAND VOLTAGE : TYPE _____

HF CAPACITANCE: _____ OPERATING VOLTAGE : _____ TEST VOLTAGE : _____

DATE OF MFG: _____ PRIMARY CAPACITANCE : _____

SECONDARY CAPACITANCE: _____

QUARTERLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks			
		Date	Date	Date	Date
1.	Check oil level				
2.	Visual checking of earthing of HF point				
3.	Measure voltage at CVT junction box and at C&R panel				

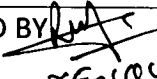

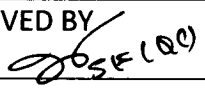
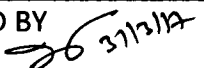
HALF YEARLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks	
		Date	Date
1.	Tightening of terminal connections		
2.	Cleaning of Bushing and checking it for cracks etc.		


Sign of JEN(M)

Sign of AEN(M)

Sign of Incharge GSS

PREPARED BY  XEN(OC)	REVIEWED BY 	APPROVED BY  JOSEF(OC)	ISSUED BY 
Date: _____	Date: _____	Date: _____	Date: _____

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MAINTENANCE SCHEDULE OF ISOLATORS & EARTH SWITCHES

PARTICULARS OF EQUIPMENT

MAKE : _____ TYPE : _____ SR.NO : _____
 RATED AMPS : _____ VOLTAGE : _____ LOCATION IDENTIFICATION : _____
 YR. OF COMMISSIONING : _____
 CONNECTING _____ TO _____

QUARTERLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks			
		Date	Date	Date	Date
1.	Cleaning of operating box, auxiliary contacts etc.				
2.	Check the contacts for tightness				

HALF YEARLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks	
		Date	Date
1.	Tightening of Clamps, jumpers etc & cleaning of insulators & check them for cracks etc.		
2.	Cleaning of main contacts(Male and Female) by CCL4 or other suitable agent to minimise the rusting effect. Immediately replace the contacts with deep pitting/burning		
3.	Check and correct(if required) the alignment of the isolator& earth switch.		
4.	Check mounting bolts for tightness		
5.	Greasing/lubrication of moving parts		

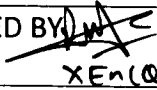


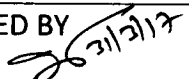
YEARLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks
1.	Maintenance of motor, coupling etc in case of motorized Isolators & earth switches	

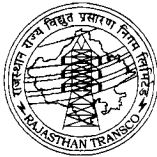
Sign of JEN(M)

Sign of AEN(M)

Sign of Incharge GSS

PREPARED BY  XEN(QC)	REVIEWED BY 	APPROVED BY 	ISSUED BY 
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MAINTENANCE SCHEDULE OF LIGHTENING ARRESTORS(LA)

1. Make :
2. Sr.No. :
3. Type :
4. Rating :
5. Year of Manufacture :
6. Date of commissioning:
7. Location :

MONTHLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks									
		Date									
1.	Record the surge counter reading										
2.	Check the leakage current indicator										

HALF YEARLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks	
		Date	Date
1.	Check healthiness of the surge counter		




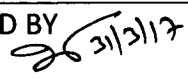
YEARLY MAINTENANCE

S.No.	Check / Activities	Data / Remarks
1.	Measurement of earth resistance	
2.	Cleaning of Insulator stack and checking for cracks etc.	
3.	Tightening of clamps.	
4.	Checking the health of LA by LA Analyser	

Sign of JEN(M)

Sign of AEN(M)

Sign of Incharge GSS

PREPARED BY  <small>XE1(RL)</small>	REVIEWED BY 	APPROVED BY 	ISSUED BY 
Date:	Date:	Date:	Date: