

Maintenance of Motor

S.No	Work Description	Activity By
1.	Each person involved in the maintenance should get a tool box	Engineer
2.	Verify that the feeder is isolated by removing the control and space heater fuses, turning the isolator/MCCB off.	Electrician
3.	Motor	
a.	In the field, physically compare the tag numbers on the authorization and the motor.	Electrician
b.	Verify the status of the motor emergency pushbutton.	Electrician
c.	Use a multimeter to test for voltage. Make sure there is no voltage.	Electrician
d.	Use a discharge rod to disconnect the motor and power cord.	Electrician
e.	Clean the motor canopy by removing it	Electrician
f.	Remove the fan cover. Clean the fan, and motor.	Electrician
g.	Verify the condition of the motor cables, terminal box, and motor/EPB earthing.	Electrician
h.	Check the condition of the motor shaft seals (e.g., V-ring or radial seal).	Electrician
i.	Check that Motor is good condition.	Electrician
j.	Open the terminal box of the motor. Check for any sign of dust / moisture inside the terminal box.	Electrician
k.	Examine and make a note of the motor connection's terminal box.	Electrician
l.	Examine the device for any indication of lugs, cable ends, delta links, internal leads, etc. for any burning smells. After communicating with the in-charge Engineer, take the necessary action (such as re-lugging, re-taping, etc.). Additionally, examine the terminal connections for any looseness and tighten them with the proper pressure, being careful not to overtighten.	Electrician
m.	Check the tightness of the terminal connections and the health of the terminals by opening the terminal box.	Electrician
n.	With sealant and aluminium tape, secure the terminal boxes for the motor.	Electrician
o.	Clear the motor body completely of any accumulated dirt.	Electrician
p.	Make that the motor body is being earthed at two different positions.	Electrician
q.	Re-install the motor rain canopy.	Electrician
4.	From the feeder end, verify and record (in the checklist) the following:	
a.	Clean the cable and feeder chamber.	Electrician
b.	Check all the tools to make sure it is in good working order.	Electrician
c.	Inspect the tightness of the control wire at each connector and component connection.	Electrician
d.	Inspect the current condition of electrical parts, such as the contactors and relays. Replace as required.	Electrician

Maintenance of Motor

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e.	Check the Start and Stop push buttons are free to operate & check the contact make & break using multimeter. If any mislead, replace the contact element.	Electrician
f.	Check the Motor and Cable Insulation Resistance	Electrician
g.	Using a digital multimeter, check the resistance of the motor winding between each phase.	Electrician
h.	Check the tightness of the CT terminal. The secondary CT circuit was measured as follows: Measurement of Parallel Resistance (Ph-N).according to the prescribed procedure. No interruption. After opening the series links, measure the CT secondary resistance (Ph-N). After opening the series links, measure the load resistance (Ph-N). Series Resistance (link Open): Measure the resistance on the CT secondary plus load side after opening the series links. Link Resistance: After connecting a series link and a regular connection. After connecting the series link and regular connection, measure the parallel resistance (Ph-N).	Electrician
g.	Check the condition by opening the power contactor.	Electrician
5.	Complete the checklist with all the required information.	Electrician
6.	Perform adequate housekeeping in the area.	Electrician

Maintenance of Motor

Checklist

MOTOR TAG NO:
Motor KW:
Motor Sr. No:

DATE OF COMMISSION:
FEEDER NO:
MOTOR FLC:

1.	PRECAUTIONS TO BE FOLLOWED BEFORE PM	
a.	The feeder has been isolated.	Yes / No
b.	Emergency The pushbutton has been pressed.	Yes / No
c.	Using a multimeter, check for the existence of voltage.	No Voltage Present
d.	The discharge motor and the power cord.	Yes / No
2.	IN INSPECTION FIELD	
A.	MOTOR	
a.	Clean the motor body, fan, fan cover, and terminal box.	Yes / No
b.	Connections to the motor body's earthing.	Tight / Loose
c.	The motor cables, terminal box, and motor / EPB earthing are all in fine working order.	Yes / No
d.	The motor shaft seals (e.g., V-ring or radial seal) are in good condition.	Yes / No
e.	Main TB Power Cable Connection	Tight /Loose/Overheat
f.	Indication of moisture, dust, or contaminants into the TBs	Yes / No
g.	Look for any indications of abnormalities or overheating.	Yes / No
h.	TBs have been sealed.	Yes / No
i.	The Motor Canopy has been reassembled.	Yes / No
j.	Connection Diagram for Motor Terminal Box:	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">R ●</div> <div style="text-align: center;">Y ●</div> <div style="text-align: center;">B ●</div> </div>
3.	MOTOR HEALTHINESS CHECK	
a.	In connection to the earth, check the motor's I.R. value. (Make sure the field's motor terminal box is closed.)	_____ MΩ
b.	Inspect the resistance of the motor windings.	RY : _____ Ω

Maintenance of Motor

		YB : ____ Ω BR : ____ Ω ____ A
c.	Check the setting for the bimetal overload relay.	
d.	Considering the FLC and load current, the setting for the overload relay is good.	Ok / Not Ok
4.	FUSE CONDITION CHECK	
a.	Check fuses: (R) Phase : ____ A (Y) Phase : ____ A (B) Phase : ____ A	Ok / Blown Out Ok / Blown Out Ok / Blown Out
b.	Check control fuse / MCB : ____ A	Ok / Blown Out
c.	Check D.C. fuses (if any): ____ A	Ok / Blown Out
5.	MCC FEEDER	
a.	Cleaning the Feeder and Cable box.	Yes / No
b.	Checked each of the devices to make sure they are in good working order.	Ok / Not Ok
c.	All wire was checked for wear & cuts and was found to be okay.	Ok / Not Ok
d.	Petroleum jelly is used to clean and lubricate contacts.	Yes / No
e.	Feeder was inspected for signs of overheating, arcing, or insulation failure and confirmed to be in good condition.	Ok / Not Ok
f.	Telescoping rails and racking screws are greased.	Yes / No
A.	POWER CABLE CIRCUIT	
a.	Connectivity of power cables at cable alley's outgoing terminals.	Tight / Loose / Over-Heat
b.	Outgoing jaw connectors on power cables terminate inside the module.	Good / Over-Heat
c.	Power termination at the power contactor's incoming and outgoing terminals.	Good / Over-Heat
d.	Power contactors (contacts) and arc chute condition	Ok / Not Ok
e.	Continuity of every pole of the power contactor after maintenance is completed	Ok / Not Ok
f.	Power contactor Coil Resistance	_____ Ω
g.	The condition of the power contactor's auxiliary contact	Ok / Not Ok
h.	Continuity of each overload relay pole after maintenance is completed	Ok / Not Ok

Maintenance of Motor

B.	CONTROL CIRCUIT	
a.	All control wires' connection tightness at fixed and moving contacts	Tight / Loose
b.	All control wire connections at auxiliary and power contactors are required to be tight.	Tight / Loose
c.	Tightness of the wire connections at the overload and numerical relay	Tight / Loose
d.	Tightness of the control wire connections at control and neutral connections	Tight / Loose
e.	Tightness of the cable connections at metering and protection CT	Tight / Loose
f.	Tightness of the control wire connections at the earth leakage relay and CBCT	Tight / Loose
g.	Tightness of the control wire connections at the indicator bulb and push buttons	Tight / Loose
h.	Control the testing process in Test mode with the Test Push Button.	Ok / Not Ok
i.	Overload resetting works.	Ok / Not Ok
j.	The feeder's overall cleanliness	Ok / Not Ok
k.	Control contactor / relay coil resistance: Contactor Number:	Resistance (Ω)
l.	CT The secondary circuit is in satisfactory condition and is not open. Resistance was tested as shown below & determined to be adequate. Resistance in parallel (Ph-N) CT Resistance (Ph-N)sec Load Resistance (Ph-N) Resistance in series (open link) Resistance of the link (after connect)	Ok / Not Ok R Y B
	REMARKS:	

Maintenance of Motor

Note:

PM – Preventive Maintenance

TB – Terminal Box

MTB – Main Terminal Box

MCC – Main Circuit Chamber

Ph – Phase

N - Neutral

Electrician Signature

(Name with Date)

Engineer Signature

(Name with Date)