



## दक्षिण पूर्व मध्य रेलवे

### SOUTH EAST CENTRAL RAILWAY

श्री. जितेन्द्र नाथ तिवारी, सहायक मंडल संकेत एवं दूरसंचार इंजीनियर, गोंदिया के द्वारा  
दिनांक. 23.02.2024 को "मुडिपार" स्टेशन का वार्षिक निरीक्षण

ANNUAL INSPECTION NOTE OF SHRI. JITENDRA NATH TIWARI, ADSTE-I/G AT  
"MURHIPAR" STATION ON 23.02.2024.

Last Date of Annual Inspection 24.02.2023

For lighting??

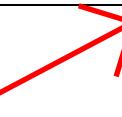
#### A1.0 Major deficiencies noted:

		Action by	
A1.1	No AT supply in old Goomty East & West.	ADEF/G	TDC
A1.2	At gate goomty LC-454, no AT supply is there.	ADEE/G	
A1.3	In SM room CLS panel not working in Auto mode at MUP .	ADEE/G	

#### B1.0 Point machine deficiencies:

B1.1	Point 42A : 1 no. hole for GTP insulation required	ADEN/DGG SSE/S/DGG JE/SIG/RSM	
B1.2	Point 43B– Burr formation on LH side stock rail	ADEN/DGG SSE/S/DGG JE/SIG/RSM	
B1.3	Point 33A- Packing required.	ADEN/DGG SSE/S/DGG JE/SIG/RSM	
B1.4	Point 32A-Bur formation in LH and RH stock rails	ADEN/DGG SSE/S/DGG JE/SIG/RSM	
B1.5	34A-Burr formation in RH stock rail.	ADEN/DGG SSE/S/DGG JE/SIG/RSM	

B1.6	41A-Burr formation in LH stock rail.	<b>ADEN/DGG SSE/S/DGG JE/SIG/RSM</b>	
			Must be done that day only



**C1.0 Other Deficiencies:**

C1.1	IPS battery -in Centre IPS battery is connected with single wire, from battery terminal to SMR.	<b>SSE/S/RJN JE/S/RSM</b>	15.3.24
C1.2	Wire Mesh required in IPS room.	<b>SSE/S/RJN JE/S/RSM</b>	31.3.24
C1.3	32AT- Track ckt TLJB broken, to be replaced	<b>SSE/S/RJN JE/S/RSM</b>	15.3.24
C1.3	31AT-Track ckt TLJB broken and fastened with wire- to be replaced.	<b>SSE/S/DGG JE/SIG/RSM</b>	
C1.4	33A cross over single wire bonding.	<b>SSE/S/DGG JE/SIG/RSM</b>	
C1.5	West Goomty stairs broken.	<b>ADEN/DGG</b>	
C1.6	One Ceiling fan required in west goomty.	<b>ADEE/NGP</b>	
C1.7	Painting of location box, points and signals are required.	<b>SSE/S/DGG JE/SIG/RSM</b>	

Summary for the whole jurisdiction:

Total deficiencies noted till date (2023-24) =36

Total deficiencies complied =9

Balance deficiencies to be complied =27

ADSTE-I/Gondia

Forwarded with remarks

whether quality of inspection is SATISFACTORY/NOT SATISFACTORY.

satisfactory with remarks by pankaj sharma

Sr. DSTE/NGP

## **Supervisor & Staff present during the Inspection:**

1. Shri. Abhishek Thakur (JE/SIG/RSM)
2. Shri. Brij kumar Bohat (Sr. Tech/SIG/MUP)
3. Shri. Yogesh Chelak (ESM-I/SIG/MUP)
4. Shri. Sagar Chouhan (ESM-III/SIG/MUP)
5. Shri. Jitenra Chandel (Assistant/MUP)
6. Shri. Shiv Prashad Yadav( Assistant/RSM)
7. Shri Tekchand, Asst/G

### **1. Brief on the Installation being inspected-**

<b>1.1</b>	<p>Date of commissioning of the Installation :</p> <p>i. "MUP" station was commissioned on 12.02.2018 with total routes 56 as per approved SIP.</p> <p>ii. Auto section between "MUP-RSM" was commissioned on 04.07.2022 up and dn line by Proj. NGP and joint line on 12.02.2018"and "MUP-PMS" up and dn line was commissioned on 04.07.22 by CONST. BIA by proj. NGP and joint line on 04.07.2022 by const. BIA.</p> <p>iii. Tentative Approved drawings up to last commissioning was available at station.</p> <p>iv. Date of commissioning of the installation (PI/EI/RRI, IBS, Interlocked LC gates, Auto section etc. as applicable).</p> <p>V. Whether approved drawing of to last commissioning available ( for item i to iv)</p>	<b>DOM/NGP ARM/G SSE/SIG/RJN</b>  <b>iii. Yes</b> <b>iv. 10.09.2020</b> <b>v. Yes</b>																								
<b>1.2</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; padding: 5px;">Sr.No.</th> <th style="text-align: center; padding: 5px;">Description</th> <th style="text-align: center; padding: 5px;">Features</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;">1</td> <td style="text-align: center; padding: 5px;">Class of station</td> <td style="text-align: center; padding: 5px;">SPL</td> </tr> <tr> <td style="text-align: center; padding: 5px;">2</td> <td style="text-align: center; padding: 5px;">Type of signaling</td> <td style="text-align: center; padding: 5px;">MACLS</td> </tr> <tr> <td style="text-align: center; padding: 5px;">3</td> <td style="text-align: center; padding: 5px;">Standard of inter locking</td> <td style="text-align: center; padding: 5px;">III(R)</td> </tr> <tr> <td style="text-align: center; padding: 5px;">4</td> <td style="text-align: center; padding: 5px;">Block signaling</td> <td style="text-align: center; padding: 5px;">Automatic</td> </tr> <tr> <td style="text-align: center; padding: 5px;">5</td> <td style="text-align: center; padding: 5px;">No. of EI Rack</td> <td style="text-align: center; padding: 5px;">05 Nos.</td> </tr> <tr> <td style="text-align: center; padding: 5px;">6</td> <td style="text-align: center; padding: 5px;">No. of running line</td> <td style="text-align: center; padding: 5px;">06 Nos.</td> </tr> <tr> <td style="text-align: center; padding: 5px;">7</td> <td style="text-align: center; padding: 5px;">No. of routes</td> <td style="text-align: center; padding: 5px;">56</td> </tr> </tbody> </table>	Sr.No.	Description	Features	1	Class of station	SPL	2	Type of signaling	MACLS	3	Standard of inter locking	III(R)	4	Block signaling	Automatic	5	No. of EI Rack	05 Nos.	6	No. of running line	06 Nos.	7	No. of routes	56	<b>DOM/NGP ARM/G SSE/SIG/RJN</b>
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	8	Optg.VDU	Dual 55 inch	
	9	Auto VDU	01 No. 43 inch	
	10	MSDACEC	16 Nos.	
	11	ELD	03 Nos.	
	12	No. of Motor point	17 Nos.	
	13	No. of Track circuits	33 Nos.	
	14	No. of Total Signals:	22+6 (Road signal)	
	a	Main Signal	14 nos.	
	b	Calling/On	02 nos.	
	c	Shunt signal	Independent shunt-05 Dependent shunt-01	
	15	LC gate	03 Nos.(ELB), 451,453,454.	
	16	IPS & make	01Nos.(StatCon Make at center) 02 Nos (HBL) at Gate	
	17	Data logger	05 Nos.(Efftronics make)	
	18	Air Conditioning	Not Available	
	19	Fire alarm system	Provided	
	20	EI Maintenance PC	01 Nos.	
	21	Data Logger Maintenance PC	Available	
	22	Type of Interlocking	Electronic Interlocking	
	23	Date of commissioning	12.02.2018	

## 2. Essential Drawings/Documents/ Records as applicable:

		Site Condition	SSE/SIG/RJN																		
<u>2.1</u>	Approved SIP/ RCC/FPD/VDU layout/ SWR/SWRD	Available																			
<u>2.2</u>	Date of commissioning of the installation (PI/EI/RRI, IBS, Interlocked LC gates, Auto section etc. as applicable)  i. Relay rack layout & Relay Disposition plan ii. Cable termination detail in Relay Rooms. iii. Relay contact analysis chart iv. Power supply Distribution plan. v. Location wiring/ termination particular vi. Cable corage plan. vii. Cable route plan. viii. Track bonding Diagram	i. Available ii. Available iii Available iv. Available v. Available vi. Available vii. Available	SSE/SIG/RJN JE/SIG/RSM																		
<u>2.3</u>	Updated Checksum/CRC of EI was available at site.  <table border="1"> <thead> <tr> <th>System</th><th>Checksum</th><th>CRC</th></tr> </thead> <tbody> <tr> <td>C1</td><td>3481</td><td>6994</td></tr> <tr> <td>C2</td><td>877e</td><td>8113</td></tr> <tr> <td>C3</td><td>Doco</td><td>ec69</td></tr> <tr> <td>C4</td><td>e974</td><td>0b40</td></tr> <tr> <td>C5</td><td>7acb</td><td>0fd9</td></tr> </tbody> </table>	System	Checksum	CRC	C1	3481	6994	C2	877e	8113	C3	Doco	ec69	C4	e974	0b40	C5	7acb	0fd9	SSE/S/RJN JE/SIG/RSM	
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<u>2.4</u>	Previous inspection report of Sr. Officers of S&T & Other deptt (for observation on S&T items) & compliance report	-	SSE/S/RJN JE/SIG/RSM																		
<u>2.5</u>	Compliance of CMS report pertaining to the Station/Section.	--	SSE/S/RJN JE/SIG/RSM																		
<u>2.6</u>	Competency Cum training history book for maintainers	Available	SSE/S/RJN JE/SIG/RSM																		
<u>2.7</u>	Assurance certificates from staff	Available With SSE	SSE/S/RJN JE/SIG/RSM																		

<b><u>2.8</u></b>	Last Annual Inspection report of Sectional officer & Compliance there of.	23-02-2024 Compliances done	<b>SSE/S/RJN JE/SIG/RSM</b>
<b><u>2.9</u></b>	Pre-commissioning checklist i. EI ii. IPS iii. Data Logger iv. SSDAC - NA v. MSDAC Not available Vi. MF earth Vii. Any other equipment.	i. NA ii. NA iii. NA iv. NA v.NA vi. NA vii. NA	<b>SSE/S/RJN JE/SIG/RSM</b>
<b><u>2.10</u></b>	<b>Records &amp; Registers-</b> i. Deficiency cum compliance register. ii. Signal failure Register iii. Officer's Inspection Register iv. Joint Point & Crossing Inspection Register. v. Quarterly Joint Footplate Inspection Reports at SSE/Sig/DTI/LI level in the section. vi. Asset Register vii. Relay Room/Goomties key register. viii. Disconnection/ Reconnection Register. ix. Cable meggering register- x. Record of SIT of station. xi. IPS battery maintenance register. xii. Various Veeder Counter Register. xiii. AMC register of Equipments. xiv. Earth Testing Register. xv. Summer & Monsoon precaution register (As per latest instruction by Board)-.  Apart from above standard records & Registers, various maintenance Registers/ Cards of Signalling gears & Equipments (such as SSDAC, MSDAC, IPS, Point machines, Data Logger, LC gates, Block Inst., Track circuit, ELD, UFSBI, Colour light Signals, Control Panel, Cables etc) may also be checked.	i. Available ii. Available iii Avl and updated iv Avl. With SSE/DGG v. Avl vi Avl vii Avl viii Avl xi. Avl xi. NA xii.Avl with SM xiv. Avl and updated xv. Not Avl	<b>SSE/S/RJN JE/SIG/RSM</b>

### 3. SM's Room:

<p><b>3.1</b></p> <ul style="list-style-type: none"> <li>i. On duty Station Master, Shri. Nirmala Shrivastava was in proper uniform and he was alert on duty.</li> <li>ii. competency of SM: not due</li> <li>iii. Misc check on knowledge of SM on his response and command ( various emergency operations)</li> <li>iv. He had good knowledge of railway working.</li> </ul> <p>PME Done on :- 11.02.23      Due on:-12.02.27      Refresher Course Done on:- NA    Due on :- 05.06.2026</p> <p>Station Master was asked about emergency Crank handle and his answer was satisfactory.</p> <p>v. Station Master was asked about Jointly Correspondence Test Before Reconnection and his answer was satisfactory.</p>	DOM/NGP
<p><b>3.2</b> <b>CLS Panel</b></p> <ul style="list-style-type: none"> <li>i. Location of CLS Panel – It's indications are clearly visible to SM as he performs his duty.          CLS Panel to be provided in ESM/IPS room at Goomties.</li> <li>ii. Power supply instructions in Hindi are pasted on CLS Panel</li> <li>iii. MCBs are of adequate rating</li> <li>iv. Bi metallic strips are provided</li> <li>v. All cables/wires are properly soldered/dressed inside &amp; outside CLS Panel without any open joint</li> <li>vi. Any sign of burning or spark in the cable connection &amp; terminals</li> <li>vii. Joint Procedure order for electrical safety Audit of RRI/EI/PI (No: SECR/Elect/427 dtd. 03.08.2015 is being followed</li> <li>viii. Power to be extended to IPS from CLS Panel</li> <li>ix. Deficiency - Seen Not working DNAT in Auto mode.</li> </ul>	<p>i. Panel and its indications are clearly visible          Not applicable</p> <p>ii. pasted</p> <p>iii. yes</p> <p>iv. NA</p> <p>v. yes</p> <p>vi. No</p> <p>vii. Yes JPO followed</p> <p>viii. stand by not</p>

<b><u>3.3</u></b>	<p><b><i>CCIP (Wherever available)</i></b></p> <ul style="list-style-type: none"> <li>i. Layout matching with SIP</li> <li>ii. Cleanliness of Panel top cover.</li> <li>iii. Earthing connectivity to Panel being intact.</li> <li>iv. Proper sealing of Emergency operation buttons. -.</li> <li>Availability of button collars- Yes</li> <li>vi. Flashing indication or Audio visual alarm are available for ATs at connected IBS &amp; Auto huts ( HQ policy 03/2014)</li> <li>vii. All indications are illuminating properly</li> <li>viii. Flasher indications are in working order.</li> <li>ix. On opening the back cover, wiring to be in good laid out/dressed condition without any opening to avoid rodent entry.</li> <li>x. Buttons &amp; Keys are functioning properly (without having stuck up tendency).</li> <li>xi. All Audio/Visual alarms &amp; counters are functional and their readings are tallying with registers.</li> <li>xii. Redundant power supply to Panel processor (if available).</li> <li>xiii. Switching over control from CCIP to VDU is working satisfactorily-</li> <li>xiv. Emergency Crank handle release under route locked condition/under failure of EI, working satisfactorily.</li> <li>xv. Requirement of spares &amp; any other miscellaneous check.</li> </ul>	Not available	
<b><u>3.4</u></b>	<p><b><i>VDU (Main &amp; Std By)</i></b></p> <ul style="list-style-type: none"> <li>i. Layout is matching with SIP.</li> <li>ii. Cleanliness of VDUs. Resolution is optimum.</li> <li>iii. Wiring inside cupboard in good laid out/dressed condition without any opening to avoid rodent entry. FMS/Switches/DC-DC converters inside cupboard are neatly placed without accumulation of dust over them.</li> <li>iv. Availability of spare mouse &amp; key boards for emergency.</li> <li>v. Absolute segregation of power supply between VDUs and accessories (SECR/Policy circular 02/2020) in case of Dual VDU arrangement/110V for VDU segregated.</li> <li>vi. Operating PCs (Industrial grade) are of standard make &amp; capacity (TAN 3007). History of previous</li> </ul>	<ul style="list-style-type: none"> <li>i. Yes</li> <li>ii. Good</li> <li>iii. Yes</li> <li>iv. Not Available</li> <li>v. Yes</li> <li>vi. No failure</li> </ul>	TDC??

	<p>failures in PCs/rectification/replacement details.</p> <p>vii. All EI related indications/buzzers are available &amp; SM is conversant with it (On line/Off line, Redundant link failure, Mismatch error, DC-DC conv. failure etc).</p> <p>viii. Flashing indication or Audio visual alarm are available to give alerts on failure of ATs at connected IBS &amp; flashing indication only on failure of ATs at Auto huts provided with RTU ( HQ policy 03/2014)-.</p> <p>ix. Switching over of control from VDU to VDU is working satisfactorily/switching over is being done once in 24 hrs.</p> <p>x. Standby VDU monitor to be kept off with its CPU being on so that operation can be shifted to Standby monitor by switching it on through remote.</p> <p>xi. Requirement of spares &amp; any other miscellaneous check.</p>	<p>vii. Available</p> <p>viii. Yes</p> <p>ix. Yes</p> <p>x. Yes</p> <p>xi. One auto VDU, mouse, keyboard required. Spare.</p>	
<b><u>3.5</u></b>	<p><b>Block Instruments/Block Panels</b></p> <p><b>a. DLBI</b></p> <ul style="list-style-type: none"> <li>i. DOH/Next due date.</li> <li>ii. Proper working of SM's Lock up key.</li> <li>iii. All Earthing are intact (Commutator Earth, PR Earth &amp; Filter unit Earth) &amp; measurement of Earth values are satisfactory.</li> <li>iv. 3 position relays are under sealed cover.</li> <li>v. Locking &amp; sealing are intact. Cross checking of Door lock keys &amp; SM's keys of one instrument with other instrument.</li> <li>vi. Polarised relay is returning to normal without line current.</li> <li>vii. Block telephones are in perfect order.</li> <li>viii. Commutator handle is getting locked when turned from LC to TOL.</li> <li>ix. Block Local/Block line voltages are optimum.</li> <li>x. Block free indication is not faulty.</li> <li>xi. Wiring inside Filter unit are in perfect order without dust.</li> <li>xii. Verify safety check/maintenance by staff as per periodicity.</li> <li>xiii. High Reliability Block release circuit/TOLR circuit.</li> <li>xiv. Previous failures of block instruments.</li> <li>xv. Check that LSS can not be taken off without Line Clear.</li> <li>xvi. Requirement of spares &amp; any other miscellaneous check</li> <li>xvii. Full deflection of needle.</li> </ul>	<p>a .NA</p>	<b>SSE/S/RJN JE/SIG/RSM</b>

<p><b>b. TLBI</b></p> <ul style="list-style-type: none"> <li>i. DOH/Next due date</li> <li>ii. All Earthing are intact (Filter Unit earth &amp; Equipment earth)</li> <li>iii. Proper working of SM's Lock up key.</li> <li>iv. Locking &amp; sealing are intact.</li> <li>v. Full deflection of needle indicator.</li> <li>vi. All relays inside the instrument are properly plugged with holding clips being intact.</li> </ul> <p>from SM's table.</p> <p>Working of releasing/locking of shunting key.</p> <ul style="list-style-type: none"> <li>viii. Cancellation timer is functional.</li> <li>ix. Measurement of Earth values.</li> <li>x. Block telephones are in perfect order.</li> <li>xi. Reliability of power supply arrangements.</li> <li>xii. Working of counters.</li> <li>xiii. Latest readings of line current/voltage/frequency at both receiving and transmitting end.</li> <li>xiv. Verify safety check/maintenance by staff as per periodicity.</li> <li>xv. Check by turning block handle with/without cooperation from other station.</li> <li>xvi. Previous failures of Block instrument for last 1 year.</li> <li>xvii. Check that LSS can not be taken Off without line clear.</li> <li>xviii. Requirement of spares &amp; any other miscellaneous check.</li> </ul> <p><b>c. SLBP/DLBP &amp; UFSBI (in relay/EI room)</b></p> <ul style="list-style-type: none"> <li>i. Visual inspection of Block Panel. Panel buttons/ Keys/ Indications are intact and in working order.</li> <li>ii. Failure Indications/ buzzers in Alarm Panel are in working order (Single CPU fail, Redundant DC-DC cov. Fail &amp; Link failure)</li> </ul>	<p><b>b. NA</b></p> <p><b>c. NA</b></p>	
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	<p>iii. PF contacts of Alarm Panel of UFSBI are wired in Data logger.</p> <p>iv. Block Telephone in perfect order.</p> <p>v. Effective working of SM's key, LCB key, SH key &amp; RKT for SLBP.</p> <p>vi. Media diversity available (Qd &amp; OFC) &amp; media changeover switch is available in SM's room.</p> <p>vii. Check media diversity.</p> <p>viii. All relays in UFSBI rack are properly plugged with holding clips being intact/ Working voltage/Current to UFSBI.</p> <p>ix. Output range of various voltage levels of DC-DC conv. card.</p> <p>x. Latest Quad cable/Communication channel testing records (by SSE/JE/Tele).</p> <p>xi. Previous failures of SLBP/DLBP for last 1 year.</p> <p>xii. Verify safety check/maintenance of staff as per periodicity.</p> <p>xiii. Check that LSS can not be taken Off without Line clear.</p> <p>xiv. Cancellation timer is working perfectly.</p> <p>xv. Earth resistance (UFSBI) should be less than 1ohm-0.5 ohm</p> <p>xvi. Media diversity for main &amp; standby BPAC- one on Quad cable with the other one being on OFC or both on OFC channels derived from two different MUX/Maple (where use of Quad cable is not feasible/applicable)</p> <p>xix. Requirement of spares &amp; any other miscellaneous check.</p> <p><b>d. Other Misc inspections</b></p> <p>i. Well framed yard layout diagram (Similar to Bandel yard/E.Rly) as communicated vide HQ ltr no.SECR/ S&amp;T/ Yard layout/1314 dtd. 09.02.2023, available in SM's room.</p> <p>ii. Fire Alarm system are provided and in working order</p> <p>iii. Alarm Panels of IPS (All IPS)/Fire Alarm system/Fuse Changeover system/ELDs, media changeover switch (UFSBI) etc are located at appropriate places and are in working order.</p> <p>iv. Sealing of Crank handle boxes (if available).</p> <p>v. Check working of Fire Alarm Panel.</p> <p>vi. Adequate lighting of SM's room.</p> <p>vii. Neatness of telecom wiring.</p> <p>viii. Arrangement of Telephones, Block instruments/Block Panels, A/c Reset boxes etc around CCIP are in order.</p> <p>ix. VHF sets, Walkie-Talkie sets/ Gate/IB Telephone, Control Phones are in perfect order without noise. Selected supply available for VHF Availability of Std by Section Control Telephones/Gate telephones.</p> <p>x. Standby Control telephones/Gate telephones are kept away from SM's table.</p> <p>xi. Any other misc check.sets/Control phones.</p>	<p>i. Yard lay out avl.</p> <p>ii. provided and working</p> <p>iii. yes</p> <p>iv.yes</p> <p>v.working</p> <p>vi.Adequate</p> <p>vii.neat</p> <p>viii.Telephone s-ok,BI, CCIP-NA</p> <p>ix. in order</p> <p>x.Yes</p> <p>xi.No</p>	
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#### 4. Relay/Electronic Interlocking:

<b>4.1</b>	<p><b>a. Relay/EI room</b></p> <ul style="list-style-type: none"> <li>i. Cleanliness of the Room &amp; Equipment</li> <li>ii. Check for any crack/seepage and issues for urgent attention Crack on wall of window</li> <li>iii. Condition of windows &amp; main door-Good</li> <li>iv. Working of Fan/ACs/Exhaust Fans/ other Electrical fittings and their adequacy in provision (AC to be provided in all EI rooms)-Good</li> <li>v. Power Supply &amp; Switch for ACs should be outside Relay/EI room-NA</li> <li>vi. ACs are installed on the wall away from Equipments &amp; wirings/4ft clearance is available between the equipment's &amp; the wall (on which ACs are fitted)/ no leakage water from AC inside the room</li> <li>vii. Lighting of Relay/EI room is 100% on AT supply.</li> <li>viii. Fire Alarm system provided and in working order.</li> <li>ix. Adequacy of floor space and height of building- Yes</li> <li>x. Plugging holes for rodent entry-yes</li> <li>xi. Relay/EI room double locked with Door sensor being wired in Data logger and working satisfactorily-yes</li> <li>xii. Any other miscellaneous check.</li> </ul> <p><b>b. Relay Interlocking (Plug in type)</b></p> <ul style="list-style-type: none"> <li>i. Visual inspection on condition of all relays (very old relays to be replaced as prudence, fungus, ant ingress, retaining clips, sealing are intact wherever applicable, loose/tilted, label on relays, charring of cover near contacts, cracks in components, black</li> </ul>	<ul style="list-style-type: none"> <li>i. Clean</li> <li>ii. crack in Window</li> <li>iii. Good</li> <li>vi Working</li> <li>v. NA</li> <li>vi. NA</li> <li>vii. Ye</li> <li>s VIII.</li> <li>Yes</li> <li>xi. Yes</li> <li>x. Yes</li> <li>xi. Yes</li> <li>xii. Mesh Provided.</li> </ul> <p>b.NA</p>	<b>SSE/S/RJN JE/SIG/RSM</b>  <b>AEN/DGG</b>
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	<p>spots etc)/Sealing of Pt group relays.</p> <p>ii. Bunching/availability of ferules/lacing of wires over ladders and near relay bases. Visually suspected loops/bypass arrangements.</p> <p>iii. Accuracy/availability of time delay circuits (120 secs/60 secs as applicable)</p> <p>iv. Sample check on final functional relay voltages for large circuits catering to multiple relay contacts in series.</p> <p>v. Verifying records of relay contact failure cases pertaining to the installation.</p> <p>vi. All relays are wired in Data logger/RTU. Relay non operated status checked for last 1 month. Validation report.</p> <p>vii. Intactness of Earthing to racks/cable armour/other equipments inside Relay room (Data loggers, UFSBI, RTUs etc) and sample check on earth values/connection of earth at Earth pits (intactness/rusty/loose)</p> <p>viii. Record of latest SIT.</p> <p>ix. Visual inspection of all fuses/terminations (proper rating/ rigidity of connections, trace of sparking/black spots etc)</p> <p>x. Voltage level at busbars of Relay Int/Ext, 110V AC/DC, 230V AC etc (as applicable). Its analog monitoring through Data logger.</p> <p>xi. Power segregation available (For redundant systems)</p> <p>xii. Proper gauge of power cables.</p> <p>xiii. FACS are provided adequately.</p> <p>xiv. High reliability Block release/TOLR ckt/Modified Calling on ckt/High reliability Signal lighting ckt/elimination of Adv Str replacement track ckt/calling on timer ckt (60 secs or 120 secs as applicable) etc available.</p> <p>xv. Requirement of spares &amp; any other miscellaneous check</p>	
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<p><b>c. Electronic Interlocking (Generic items for all make EIs)</b></p> <ul style="list-style-type: none"> <li>i. Representative of OEM to accompany the inspection.</li> <li>ii. Check AMC register and maintenance log sheet filled by OEM in latest visit.</li> <li>iii. ACs to be provided in all EI room irrespective of no of routes.</li> <li>iv. All modules are free from dirt/dust and are inserted properly.</li> <li>v. Refer para 4.1b(i) for visual inspection of Relays.</li> <li>vi. Visual inspection for intactness of identification markers/labels at all terminals.</li> <li>vii. Visual checking of indication of Comm. Switches.</li> <li>viii. Check that unused slots are covered with blank plates.</li> <li>ix. Check voltage levels at supply terminals (Refer para D1bx)</li> <li>x. Power from IPS to EI is extended by 4x16 Sqmm copper cable.</li> <li>xi. FANs provided for EI &amp; Embedded PCs (provided in cupboard) are in working order.</li> <li>xii. Visual checking of all indications on EI equipments.</li> <li>xiii. Patch cords used in EI should not be under tension/bent condition.</li> <li>xiv. Bit chart of appropriate size is fixed on EI rack/at a suitable place.</li> <li>xv. Testing of voltage at test points on EI modules (Sample check).</li> <li>xvi. Ensure that PCs of Optg/maintenance terminals are not loaded with external software.</li> <li>xvii. Check for proper functioning of MT.</li> <li>xviii. Fuse Alarm systems are provided including</li> </ul>	<p>i. <b>YES</b></p> <p>ii.<b>Provide</b></p> <p>iii.<b>Dust free</b></p> <p>dust free</p> <p>iv. <b>ok</b></p> <p>v. <b>done,</b></p> <p>ok vii.ok</p> <p>viii.<b>yes</b></p> <p>x.yes</p> <p>xi.working</p> <p>xii.ok</p> <p>xiii.not in tension</p> <p>xiv.fixed</p> <p>xv.done</p> <p>xvi.checked</p> <p>xvii.checked</p>	
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	<p>signal lighting circuits.</p> <p>xix. Checking for all fuses and its indications.</p> <p>xx. BRC &amp; its connectivity to ring earth &amp; EI equipments/Racks are intact with wires of suitable gauge as per RDSO guidelines (TAN 3006).</p> <p>xxi. Measured value of Ring Earth (should be less than 1 ohm)</p> <p>xxii. A Class protection is connected to separate Earth electrode (MF) other than Ring earth. Surge counter is in working condition.</p> <p>xxiii. Records on failure due to lightning for last 1 year/causes/action taken/suggestions.</p> <p>xxiv. All external relays are wired in Data logger/RTU. Validation report.</p> <p>xxv. Last record of system changeover (to be redone if required).</p> <p>xxvi. Power supply to EI is through duplicate cables.</p> <p>xxvii. Intactness of all surge protection devices for EI equipments.</p> <p>xxviii. Powering of PC monitors through 110V AC.</p> <p>xxix. Firmware version update done (As applicable)'</p> <p>xxx. Last record on SIT</p> <p>xxxi. Availability of anti static ESD wrist straps.</p> <p>xxxii. OFC laid for communication between Goomty &amp; Central EI (for distributed architecture is in shape of '8').</p> <p>xxxiii. Records on OFC damage for last 1 year.</p> <p>xxxiv. Specific checking of parameters typical to make of EI being inspected as per maintenance log sheet.</p> <p>xxxv. Safe storage of spare EI cards available at the</p>	<p><b>xviii.NOT PROVIDED</b></p> <p><b>xix.checked</b></p> <p><b>xx.intact</b></p> <p><b>xxi. less than1</b></p> <p><b>xxii.avl</b></p> <p><b>xxiii.no</b></p> <p><b>xxiv.yes</b></p> <p><b>xxv. checked</b></p> <p><b>xxvi.checke d</b></p> <p><b>xxvii.intact</b></p> <p><b>xxviii. avl</b></p> <p><b>xxix. planned</b></p> <p><b>7.7 to be done</b></p> <p><b>XXX. Not avl.</b></p> <p><b>xxxi. avl</b></p> <p><b>XXXii. Available</b></p> <p><b>Xxxiii. No OFC DAMAGE</b></p> <p><b>xxxiv. yes</b></p> <p><b>XXXv. At Store</b></p>	Reading of OFC carried out or not
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	<p>installation.</p> <p>xxxvi. Spare CPU card is loaded with running application logic for quick resumption of EI on failures of CPU cards.</p> <p>xxxvii. Records on all types of failures in EI for last 1 year/causes/action taken/suggestions.</p> <p>xxxviii. Competency of staff.</p> <p>xxxix. Requirement of spares &amp; any other miscellaneous check.</p>	<p><b>xxxvi. Not done</b></p> <p><b>xxxvi. provided</b></p> <p><b>xxxvii. Avl</b></p> <p><b>Avl with EI agency</b></p>	
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## 5. IPS:

<b>5.1</b>	<p>i. Check AMC register and maintenance log sheets filled by OEM in last visit.</p> <p>ii. Adequate lighting and working condition of exhaust fan</p> <p>iii. No dust accumulation on IPS equipments-yes</p> <p>iv. IPS front panel indications (ACDP/DCDP) are proper Indications are proper on all modules</p> <p>v. Checking wires/connectors/terminations inside IPS cabinets. No visually loose connections/smoke/black spots at I/O links. Connectivity to power distribution rack (if provided) are through wires of proper gauge as per load level- yes</p> <p>vi. DC-DC converters are provided in N+ 2 configurations for internal/External circuits. Segregated supply for Block /BPAC /UFSBI /MSDAC with redundant modules. Supply arrangement of BPAC (A&amp;B) systems on UP/DN/Jt lines are as per HQ policy. Check for abnormal heating of modules</p> <p>vii. Check I/P load to IPS from AC mains. Range of AC I/P voltage (170V-275V)</p> <p>viii. Check AC/DC loads on IPS. No of SMRs- adequate/surplus</p> <p>ix. Availability of spare Modules in wired slots on ACDP/DCDP</p>	<p><b>i.Checked last visit 22.02.2024</b></p> <p><b>ii. Good</b></p> <p><b>iii. Yes</b></p> <p><b>iv.yes</b></p> <p><b>v. no visually loose, wire of proper gauge</b></p> <p><b>vi. N+2 for internal, N+1 for external, no modules heating.</b></p> <p><b>vii. Checked</b></p> <p><b>i/o: 240VAC</b></p> <p><b>viii.Adequate</b></p> <p><b>ix.spare avl</b></p>	<p><b>ADEE/G SSE/S/RJN</b></p> <p><b>JE/SIG/RSM</b></p>
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	<p>x. Insulation of wiring ladder from IPS cabinets</p> <p>xi. Earth connectivity to IPS cabinet to be intact</p> <p>xii. Proper functioning of status monitoring panel (to be at SM room)</p> <p>xiii. Check for cleanliness of IPS room. cracks/seepage/entry for rodents etc-yes</p> <p>xiv. Check SPD Box. Earthing to be intact and proper. Indications in SPDs to be checked. Non- Indicative type SPDs to be tested by SPD life tester. PF contacts of SPD (wherever provided) is wired in Data logger/RTU</p> <p>xv. Check for availability of well framed IPS load diagram in IPS room</p> <p>xvi. Check for working of INV to INV &amp; INV to CVT changeover function</p> <p>xvii. Refer para E(i) for condition of battery room. Room is well ventilated with working condition of exhaust fans.</p> <p>xviii. Battery sets are clean without dust accumulation to avoid shorting of terminals &amp; Earth faults. Its DOI/No of sets/AH capacity.</p> <p>xix. Check battery sustainability report maintained by staff.</p> <p>xx. Check IPS auditing report (To be done by SSE if not available).</p> <p>xxi. Check battery maintenance register (to be available in AMC register)-yes</p> <p>xxii. Battery connecting terminals are provided proper sized nut &amp; bolts with petroleum jelly applied on it/Double lead wires for batteries provided-yes</p> <p>xxiii. Competency of staff.</p> <p>xxiv. All PF contacts are wired in Data logger. SMS alert feature is functional</p> <p>xxv. Requirement of spares &amp; any other miscellaneous check -Not required.</p>	<p><b>x. insulated</b></p> <p><b>xi. intact</b></p> <p><b>xii. working</b></p> <p><b>xiii. clean.</b></p> <p><b>xiv. intact</b></p> <p><b>xv. Updated flex board required</b></p> <p><b>xvi. load is shifted</b></p> <p><b>xvii. well ventilated</b></p> <p><b>xviii. dust free.</b></p> <p><b>xix. maintained</b></p> <p><b>xx. Load audit not avl</b></p> <p><b>xxi. available</b></p> <p><b>xxii. nut bolt ok , petroleum jelly avl</b></p> <p><b>xxiii. available</b></p> <p><b>xxiv. yes</b></p> <p><b>xxv. Not required.</b></p>	
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TDC??

	<p><b>IPS Parameters:</b> SMR OFF</p> <p>AC Input: 231.6 VAC /1.62A , DC Output: 108.7 V, 11.2 A(When SMR Off)</p> <table border="1"> <thead> <tr> <th></th><th colspan="2">Battery Set-1</th><th colspan="2">Battery Set-2</th></tr> <tr> <th></th><th>Voltage</th><th>Gravity</th><th>Voltage</th><th>Gravity</th></tr> </thead> <tbody> <tr> <td>1.</td><td>1.97v</td><td>1200</td><td>1.99V</td><td>1220</td></tr> <tr> <td>2.</td><td>1.97v</td><td>1190</td><td>1.97V</td><td>1220</td></tr> <tr> <td>3.</td><td>1.96v</td><td>1190</td><td>1.97V</td><td>1220</td></tr> <tr> <td>4.</td><td>1.99v</td><td>1210</td><td>1.96V</td><td>1220</td></tr> <tr> <td>5</td><td>1.96v</td><td>1190</td><td>1.99V</td><td>1220</td></tr> </tbody> </table>		Battery Set-1		Battery Set-2			Voltage	Gravity	Voltage	Gravity	1.	1.97v	1200	1.99V	1220	2.	1.97v	1190	1.97V	1220	3.	1.96v	1190	1.97V	1220	4.	1.99v	1210	1.96V	1220	5	1.96v	1190	1.99V	1220	SSE/S/RJN JE/SIG/RSM
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	6	2.00v	1210	1.98V	1240		
	7	2.00v	1200	1.99V	1240		
	8	1.96v	1190	2.00V	1240		
	9	1.97v	1210	1.97V	1220		
	10	1.99v	1210	1.97V	1220		
	11	1.99v	1200	1.97V	1220		
	12	1.98v	1180	1.97V	1220		
	13	1.98v	1200	1.98V	1220		
	14	1.98v	1200	1.99V	1240		
	15	1.99v	1200	1.99V	1240		
	16	1.98v	1220	1.98V	1240		
	17	1.98v	1210	2.00V	1240		
	18	1.98v	1210	2.00V	1250		
	19	1.98v	1190	1.99V	1240		
	20	1.97v	1190	1.97V	1220		
	21	1.99v	1200	1.96V	1220		
	22	1.96v	1210	1.97V	1220		
	23	1.99v	1200	1.98V	1200		
	24	1.97v	1200	1.97V	1220		
	25	1.99v	1200	1.99V	1230		
	26	1.98v	1190	1.96V	1220		
	27	1.99v	1200	1.96V	1200		
	28	1.98v	1210	1.96V	1200		
	29	1.98v	1200	1.97V	1200		
	30	1.97v	1190	1.98V	1210		
	31	1.97v	1200	1.95V	1210		
	32	1.97v	1210	1.97V	1210		
	33	1.97v	1200	1.99V	1220		
	34	1.97v	1200	1.97V	1230		
	35	1.97v	1180	1.97V	1220		
	36	1.97v	1210	1.97V	1220		

	37	1.98v	1210	1.99V	1240		
	38	1.97v	1220	1.96V	1200		
	39	1.97v	1200	1.96V	1220		
	40	1.98v	1190	1.97V	1200		
	41	1.99v	1200	1.99V	1220		
	42	1.98v	1200	1.97V	1220		
	43	1.97v	1210	1.97V	1220		
	44	1.97v	1210	1.98V	1220		
	45	1.98v	1200	1.98V	1220		
	46	1.98v	1210	1.98V	1220		
	47	1.98v	1210	1.98V	1220		
	48	1.97v	1220	1.99V	1220		
	49	2.02v	1210	1.99V	1210		
	50	2.01v	1210	2.01V	1220		
	51	2.01v	1210	2.00V	1200		
	52	2.01v	1210	2.01V	1220		
	53	2.02v	1210	2.01V	1210		
	54	2.02v	1210	2.01V	1220		
	55	2.00v	1200	2.00V	1220		
	<b>Total Batt - Vol.</b>	<b>108.5 V</b>		<b>108.4V</b>			

Cables:

<b><u>6.1</u></b>	<ul style="list-style-type: none"> <li>i. Check cable meggering register (It should be done as per periodicity/not in rainy or wet condition). Noted discrepancies/action taken.</li> <li>ii. All terminations at CTRs, location boxes/JBs to be checked for sulphation/Entries of cables in Relay room, cable pit, Location box/JB to be checked &amp; sealed.</li> <li>iii. Visual check of protective arrangements provided at track crossing/culverts/bridges/construction</li> </ul>	Site Condition <b>i. Checked ok</b> <b>New readings yet to be filled.</b>  <b>ii.Checked ok</b>  <b>iii.checked</b>	<b>SSE/S/DGG JE/SIG/RSM</b>
	<ul style="list-style-type: none"> <li>iv. Condition and fastening arrangements of pipes on bridges. --</li> <li>v. Verification of cable route plan.</li> <li>vi. Record on cable cut cases by outsiders &amp; executing agencies for last 1 year to be checked.</li> <li>vii. Record on signalling failures on account of cable low insulation cases for last 1 year to be checked. .</li> <li>viii. Check fault indications on ELD.</li> <li>ix. Requirement of spares &amp; any other miscellaneous check</li> </ul>	<b>iv. Ok</b> <b>v. ok</b> <b>vi. NIL</b> <b>vii. No</b>  <b>viii. No ind</b> <b>ix. No</b>	

## 7. Signals:

<b><u>7.1</u></b>	<ul style="list-style-type: none"> <li>i. Check for condition of Signal post/foundation/ladder. Alignment of Signal post to be proper.</li> <li>ii. Check for condition of Signal units (door closing/locking arrangement/ no access for rain water/rodent entry/gaskets are provided.-3</li> <li>iii. Clearance of signals from OHE wire to be checked</li> <li>iv. Painting of Signal post/unit/ladder/number plates is satisfactory.</li> <li>v. Integrated LED units are provided for all main aspects.-</li> <li>vi. Check for infringement of Signals w.r.t SOD. Implantations to be marked on signals on the side of the post facing the nearest track. In case of</li> </ul>	i.good ii.Checked ok iii. adequate iv.Not Satisfactory v. provided vi.	<b>SSE/S/DG JE/SIG/RSM</b>
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	<p>infringement, implantation to be marked in Red.-</p> <p>vii. Check for arrow mark on RHS Signals.-</p> <p>viii. Check that Wooden Cross is provided on signals not in use.</p> <p>ix. Earthing of Signal post &amp; unit to be intact without rust &amp; looseness at earth wire connecting terminals.</p> <p>x. Check maintenance record for measured V/I range for signal aspects during schedule maintenance.-</p> <p>xi. Carry out sample check on V/I range of aspects.</p> <p>xii. Check record on LED defective cases for last 1 year.</p> <p>xiii. Check record on unsafe incidences related to malfunctioning of Signal aspects for last 1 year.</p> <p>xiv. Check condition of Signal locations. It is to be perpendicular to track.</p> <p>xv. Loc box handle &amp; E-type lock are working properly.</p> <p>xvi. Lamp with switches should be provided in location boxes to facilitate rectification in case of exigencies at night.</p> <p>xvii. Relays in location boxes are fixed with spring washers &amp; check nuts/holding clips are <b>intact</b>.</p> <p>xviii. Cable termination chart displayed on inner side of the door.</p> <p>xix. Contact paralleling done for Relays in location box (as per feasibility).</p> <p>xx. Neatness of wiring/Gauge of wires to be proper/single wire or cable core to be inserted in holes on hylum sheets for wiring.</p> <p>xxi. Condition of wooden plank (if provided).`Good</p> <p>xxii. Sand filling/Plastering at cable entry not damaged</p> <p>xxiii. Requirement of spares &amp; any other miscellaneous check.</p>	<p>vii. S10, S3 RHS Up loop line str, Up main line str, arrow avl.</p> <p>viii. NA</p> <p>ix. OK</p> <p>x. Done</p> <p>xi.done, ok xii. Nil xiii.Nil</p> <p>xiv. Yes</p> <p>xv. Yes</p> <p>xvi. Not provided xvii. intact</p> <p>xviii.yes</p> <p>xix.done xx.neat</p> <p>xxi.Good</p> <p>xxii. OK</p> <p>xxiii.MSDAC,SPD required-04nos.</p>	
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<b>7.2</b>	<p>Checked following signals and Measured parameters, found ok:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Signal No.</th><th style="text-align: center;">Aspect</th><th style="text-align: center;">Voltage (V)</th><th style="text-align: center;">Current (A)</th></tr> </thead> <tbody> <tr><td>S-1</td><td>HG</td><td>110.7</td><td>134mA</td></tr> <tr><td>S-2</td><td>RG</td><td>109.8</td><td>131mA</td></tr> <tr><td>S-3</td><td>RG</td><td>109.6</td><td>132mA</td></tr> <tr><td>S-4</td><td>RG</td><td>110.3</td><td>131mA</td></tr> <tr><td>S-5</td><td>HG</td><td>108.7</td><td>129mA</td></tr> <tr><td>S-6</td><td>RG</td><td>110.3</td><td>136mA</td></tr> <tr><td>S-7</td><td>RG</td><td>109.6</td><td>331mA</td></tr> <tr><td>S-10</td><td>RG</td><td>109.3</td><td>128mA</td></tr> <tr><td>S-11</td><td>DG</td><td>110.2</td><td>131mA</td></tr> <tr><td>S-13</td><td>DG</td><td>109.6</td><td>135mA</td></tr> <tr><td>S-22</td><td>RG</td><td>110.7</td><td>133mA</td></tr> <tr><td>S-27</td><td>RG</td><td>109.6</td><td>132mA</td></tr> <tr><td>S-28</td><td>HG</td><td>110.5</td><td>137mA</td></tr> </tbody> </table>	Signal No.	Aspect	Voltage (V)	Current (A)	S-1	HG	110.7	134mA	S-2	RG	109.8	131mA	S-3	RG	109.6	132mA	S-4	RG	110.3	131mA	S-5	HG	108.7	129mA	S-6	RG	110.3	136mA	S-7	RG	109.6	331mA	S-10	RG	109.3	128mA	S-11	DG	110.2	131mA	S-13	DG	109.6	135mA	S-22	RG	110.7	133mA	S-27	RG	109.6	132mA	S-28	HG	110.5	137mA	<b>SSE/S/DGG JE/SIG/RSM</b>
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S-28	HG	110.5	137mA																																																							

## 8. Track Circuits:

Sr.	Track No.	Specific Gravity										TR Choke	TR Volt
		Charger Volt V	Charger Amp Amp	Resistance Ohm	Feed Choke V	TF Volt V	1	2	3	Total Volt	V		
i.	37T	7.41	-	.76	1.16	5.22	1210	1210	1210	6.46	1.17	4.90	
ii.	GLT1	7.32	-		1.17	5.36	1200	1200	1200	6.56	1.15	4.88	
iii.	GLT2	7.92	-		1.05	5.00	1210	1200	1200	6.29	0.99	4.75	
iv.	34BT	7.40	-		1.01	4.64	1210	1200	1220	6.63	0.98	4.31	
v.	CLT1	7.27	-		1.05	5.21	1200	1210	1200	6.34	1.15	4.89	
vi.	CLT2	7.15	-		1.14	4.82	1210	1220	1210	6.30	0.98	4.64	
vii.	27T	7.38	-		1.01	4.76	1200	1210	1200	6.45	1.00	4.36	
viii.	1AT	7.09	-		1.06	5.0	1200	1200	1210	6.54	1.03	4.45	
ix	1T	7.10	-		1.07	4.62	1210	1220	1210	6.45	0.97	4.53	
x	31BT	7.34	-		1.06	5.25	1220	1220	1200	6.32	1.12	4.44	
xi	2AT	7.23	-		1.03	5.21	1210	1200	1220	6.54	0.99	4.36	
xii	2T	7.19	-		1.15	5.25	1200	1220	1200	6.43	0.94	4.56	

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<b><u>8.1</u></b>	<p>i. Visual checking of condition of – Track lead JBs, track lead wires (double lead wires to be provided), S&amp;T bonds( transverse/continuity/structural bonds), intactness of OHE bonds, insulation sleeves on OHE bonds beneath rail, relevant Glued Joints, level of ballast below rail, provision of GFN liners, J-clip at GJs, GJs not on sleepers, insulation of stretcher bars/Gauge tie plate/Point roddings (For track circuits on turnouts)etc. Discrepancies to be noted.</p> <p>ii. GJs are provided on crossing portion in clear of fouling marks.</p> <p>iii. Track relay is not due for replacement. Check for dust on contacts/fungus/crack &amp; breakage of components.</p> <p>iv. Check condition of Location box (Feed end/Relay end/battery location)-</p> <p><b>Refer G(xiv to xxii)</b></p> <p>v. Check condition of wooden planks. It should not be sagging due to load.</p> <p>vi. DOI is painted on Track batteries/ 80AH cells are provided.</p> <p>vii. Check all voltage/current parameters of track circuit/Choke voltage and compare with previous measurements.</p> <p>viii. Check ballast resistance.</p> <p>ix. Check recent cable insulation reports of tail cables (recheck if required)</p> <p>x. Check TSR at Relay end/Feed end/ at other parallel portion of track/Check track locking of Point zone track circuits.</p> <p>xi. No dead zone for more than 1.8m.</p> <p>xii. Check gripping of feed end fuse (4A). Provision of PPTC fuses. Adequate voltage level for TPR circuit.</p> <p>xiii. Voltages at 1st TPRs in Relay room/Goomties for farthest end track circuits.</p> <p>xiv. Check for excitation of Track relay (not more than 300</p>	<p>i. <b>provided</b></p> <p>ii. <b>yes</b></p> <p>iii. <b>yes</b></p> <p>iv. <b>checked</b></p> <p>v. <b>Good</b></p> <p>vi. <b>yes</b></p> <p>vii. <b>checked</b></p> <p>viii. <b>check</b></p> <p>ix. <b>check</b></p> <p>x. <b>checked</b></p> <p>xi. <b>ensured</b></p> <p>xii. <b>check</b></p> <p>xiii. <b>26.4</b></p> <p>Below <b>300%</b></p> <p><b>Checked</b></p>	<p><b>SSE/S/RJN JE/SIG/RSM</b></p>
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	<p>% for QTA2 &amp; 235% for QBAT).</p> <p>xv. Check specific gravity/voltage of individual cells and compare with previous records.</p>		
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	xvi. Check for effectiveness of wiring of PF contacts of Track chargers.  xvii. Any other items & spare requirement.	<b>Checked</b>  <b>80AH cell 45 nos</b>	
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## 9.Points:

<b>9.1</b>	i. Check previous Jt. Pt & Crossing inspection register.  Discrepancies noted/progress on compliance/top sheet of register to contain discrepancies & compliance/miniature yard layout is available in register.- yes, 25.08.23  ii. Check the layout (Squareness/ballast clearance (50 mm)/Opening at toe/ Housing /packing/ clearance at JOH(for TWS)/Condition of P-Way fittings)- ballast clearance not 50 mm on all points.  iii. Fixing of point machine on sleepers to be proper without looseness/Clearance between sleepers 3&4 (685 mm- for Normal switches & 745 mm for TWS)-Proper  iv. Clearance between top edge of stretcher and bottom of the stock rail (1.5 to 3mm)- For 143 mm Normal switches.  v. Oiling of Point machine (Periodicity- half yearly)  vi. Length of feeding to be within limit for RE area- Within limit  vii. Check data in maintenance card for previous readings- checked  viii. Check Condition of SSD on sleeper 13 &14- it should be of latest type with insulations on arm(For TWS)  ix. Ground connection rods are free from ballast. Visual checking of insulations on Point roddings. Painting of roddings. Clearance between point roddings  x. Check operation by Crank handle. It should not be possible to insert crank handle without assigned key/ Crank handle assembly is clean  with adequate contact pressure.	<b>I .Avl</b>  <b>ii.Checked, ok</b>  <b>iiChecked, ok</b>  <b>iv. Within limit</b>  <b>v. done</b> <b>vi. within limit</b> <b>vii.checked ok</b>  <b>viii.SSD latest at point 33A, 43B, 42B</b>  <b>ix. clear</b>  <b>x. checked found ok</b>	<b>SSE/S/D G G JE/SIG/ RSM</b>
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	<p>xi. Measurement of operating values (Voltage &amp; Current) of point machine with &amp; without obstruction. Current on obstruction to be 1.5 to 2 times of normal value (Friction clutch to slip within this range). Difference between normal &amp; *obstruction current (should not be less than 0.5A). Measured values to be compared with previous readings. Obstruction test to be done with 5mm/1.6mm test pieces kept at 150 mm from the toe.</p> <p>xii. Voltage drop at far end points - It should not be less than 75% of its rated voltage for standard thrust load of 450 Kg (Normal switch) &amp; 550Kg (TWS)</p> <p>xiii. Smoothness of commutator &amp; carbon brushes/Contact pressure</p> <p>xiv. Previous record on meggaring of Point cables.-</p> <p>xv. Record on failure of the point for last 1 year/causes/action taken.</p> <p>xvi. Any other items &amp; spare requirement</p>	<p><b>xi. values taken and checked</b></p> <p><b>xii. within range</b></p> <p><b>] </b></p> <p><b>xiii. ok</b></p> <p><b>xiv. avl</b></p> <p><b>xv. taken</b></p> <p><b>xvi. Point JB required</b></p>	
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Sr. No.	Point No.	Working current (A)		Obstruction current (A)		Working Voltage (V)		Obstruction Voltage (V)		Opening of T/Rail & S/Rail (MM)	
		N/R	R/N	N/R	R/N	N/R	R/N	N/R	R/N	N/R	R/N
i.	31A	1.8	1.9	3.8	4.3	103	104	100	98	110	112
ii.	31B	2.0	1.9	4.6	4.4	1.6	108	89	87	115	113
iii.	32A	1.9	2.0	3.7	4.0	1.9	107	98	96	167	162
iv.	32B	1.80	2.0	3.6	3.9	107	104	9.9	92	115	116
v.	33A	1.9	1.8	4.2	4.2	106	105	100	96	165	163
vi.	34A	1.9	1.7	3.7	3.9	110	109	102	101	110	112
vii.	34B	18	1.9	3.6	3.7	106	108	101	98	116	113
viii.	41A	2.0	1.7	3.9	3.8	107	108	99	96	112	114
ix.	41B	1.9	1.8	3.6	4.0	110	102	89	92	110	116
x.	41A	1.7	1.6	3.8	3.9	109	104	93	91	112	113
xi.	42B	1.9	1.7	3.9	3.9	106	105	99	91	115	116
xii.	37	1.8	1.8	4.1	4.0	109	107	100	99	115	113

## 10.Electric lifting barrier & Sliding barriers:

<b><u>10.1</u></b>	<b>General:</b> LC-454 km- 881/3-9 TVU- 53402 DEC 2021  1. Gate Man, Shri. Nitin, was on duty. He was in uniform and alert on duty. He had good knowledge about railway working. PME date – 28.01.2021. Due- 27.01.2025 RC date – 12.05.2021 Due-11.05.2025  2. Safety equipment's according to the list were available and in good condition. – checked ok  3. GWR (both Hindi & English) was available. Protection diagram was available. OK  4. Visibility of road from Gate operating panel was good-OK  5. Condition of approach road was good	<b>ADEN/G</b> <b>SSE/S/RJN</b> <b>JE/SIG/RSM</b>
<b><u>10.2</u></b>	<b>Technical:</b>  1. Condition of Gate operating panel was ok. All indications and buttons were intact.- OK  2. Alignment of Booms was proper. fully open (85 to 90 degree)/fully closed (0 to 5 degree).-OK  3. Gate stops in midway on releasing Gate close button.-- Yes  4. Checked working of RKTs for emergency operation & Sliding barriers and found working ok.  5. Indications for RKTs provided.  6. Boom locking checked and found ok.  7. Sliding boom was easy to operate and travels smoothly in channel.  8. Retro reflective strips were provided on boom.  9. Pedestal, lock post & Gate Operating panel were earthed.  10. Pedestal of ELB to be connected to Rail earth.  11. Only AC immunized Relays are provided.	<b>SSE/S/DGG</b> <b>JE/SIG/RS</b> <b>M</b>

## 11. Miscellaneous Electrical/Electronic Equipment's:

<b><u>11.1</u></b>	<p><b>Datalogger:</b></p> <ol style="list-style-type: none"> <li>1. Data loggers were provided are of adequate capacity at center, east goomty and west goomty and provided at LC-454 auto Goomty.</li> <li>2. Proper cleaning of instrument was there and dust accumulation absent.</li> <li>3. All PCB cards were inserted properly.</li> <li>4. Power Supply to Datalogger was provided through Charger-Battery system.</li> <li>5. FAS (Fault analysis System) was connected to D/L and working.</li> <li>6. Check LED position of both side modems and found ok.</li> <li>7. All cable terminations (Analog &amp; Digital input) were tightly connected.</li> <li>8. Checked that NMDL software &amp; all utility program (Reports/Simulation) running smoothly at FAS. Yard layout was accurate &amp; updated.</li> <li>9. Sample check on functioning of SMS alert was checked and found ok.</li> </ol>	<b>SSE/S/RJN JE/SIG/RSM</b>
<b><u>11.2</u></b>	<p><b>MSDAC:</b></p> <p>a. <b>Outdoor:</b></p> <ol style="list-style-type: none"> <li>1. Track side Sensor (Tx/Rx coils) were found tightened properly.</li> <li>2. Distance between two adjacent axle detectors of different axle counters was found more than 2 mtr.</li> <li>3. Sensor cables, protective ducts including earthing connection were proper.</li> <li>4. Tightness of deflector plates was checked and found ok.</li> <li>5. Track side equipment box at locations was fixed properly on mushroom base plate.</li> <li>6. Condition of earth rod, earth pit, continuity of connection was checked and found ok.</li> </ol>	<b>SSE/S/RJN JE/SIG/RSM</b>

7. In-built trolley suppression is available.

**b. Indoor:**

1. All cable terminations were tight & properly connected in Relay room.
2. All fuses provided in Relay room/Evaluator PCBs were of proper capacity & tightened.
3. Redundancy available and redundant systems were powered through separate sources & cables.
4. Checked that the armour of Quad cable connecting DP location to Relay room was properly earthed & tightened.
5. All cards, PCBs & connectors were properly connected in Evaluators/ECs and free from dust.
6. Functioning of Reset indication and Counter was ok.
7. Checked quad cable maintenance record by SSE/Tele/DGG.  
Quad cable insulation was all pair between **MUP-DGG** are below 10M ohms and Loop resistance was not found .

**c. Miscellaneous:**

1. Maintenance record with JE/Sig/DGG was ok.
2. Parameters of all MSDAC were found to be within limit as per OEM log sheet.
3. Proper procedures were being followed for resetting failed track section in Automatic territory

MUP-RSM Auto section at MUP and following parameters were noted.

PARAMETERS	REFERENCE VALUE	ACTUAL VALUE	
		DP UAA25	DP UAA25
UAA25	30-72v	63.80V	63.58V
U24	21.0-22.4V	21.91V	21.92V
FS	42-43.2 KHZ	43.11KHZ	43.08KHZ
F1	3.4-3.53	3.51KHZ	3.50KHZ

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JE/SIG/RSM**

		<b>KHZ</b>			
<b>F2</b>	<b>6.31-6.43</b>	6.40KHZ	6.40KHZ		
	<b>KHZ</b>				
<b>UR1</b>	<b>3.25-3.65V</b>	3.41V	3.49V		
<b>UR2</b>	<b>3.05-3.45V</b>	3.20V	3.18V		
<b>UE1</b>	<b>60-150mV</b>	66.90mV	72.25mV		
<b>UE2</b>	<b>60-150mV</b>	66.40mV	70.05mV		
<b>UL</b>	<b>0.48-1.80V</b>	1.39V	1.38V		
<b>Negativ e Earth</b>	Available	Available			
<b>11.3</b>	<b>Earth Leakage Detector:</b>				
	1. ELD is installed in IPS room & wired in Datalogger.	1.Yes			SSE/S/RJN JE/SIG/RSM
	2. Bus bar name stickers on channel modules were available.	2.Not			
	3. ELD equipment was free from dust and Bus bar indications was available on channel modules.	3.Yes			
	4. Checked earth connections to ELD through E1 & E2 to be at different points. continuity of earth connecting wires was proper.	4.Yes			
	5. Normal LED was glowing on channels.	5.Yes			
	6. if fault LED was glowing, corrective action to be taken.	6.Inermittend			
	• ELD module may be defective.				
	• Power supply to ELD not available.				
	• There is heavy leakage in connected supply busbar.				
	7. Channels not in use were switched off.	7.Yes			

<b><u>11.4</u></b>	<b>Fuse auto Changeover System:</b>		
	1. FACS were provided in all Auto-cum gate Goomties.	1. Yes only in auto goomty	
	2. FACS module was neatly fixed on the rack without accumulation of dust over it.	2. Yes	
	3. All cards & G-type fuses were properly inserted.	3. Yes	
	4. 'Power on' LED indication was lit on Power card.	4. Yes	
	5. Checked condition of all LEDs by pressing test button on Power card.	5. Yes	
	6. Checked Reset push button on cards and buzzer reset push button on power card by simulating fuse blown up case	6. Yes	
	7. All wiring from relay racks to FACS is soldered directly to cards and mother board PCB.	7. Yes	

## 12. Telecom:

<b><u>12.1</u></b>	<p><b>OFC hut:</b></p> <ol style="list-style-type: none"> <li>1. Checked various maintenance registers maintained in OFC hut and found well maintained:             <ul style="list-style-type: none"> <li>• Battery Testing Register- <b>Available</b></li> <li>• 6 Quad Cable Testing Register (Continuity test, Attenuation Test, Insulation, Cross Talk)- <b>not found.</b></li> <li>• Earth testing Register- <b>Yes avl</b></li> <li>• Emergency Socket Testing Register – <b>Yes avl</b></li> <li>• Station Maintenance register-Not Available</li> <li>• OFC Equipment Maintenance register-NOT Available</li> </ul> </li> <li>2. Cleanliness of OFC Hut and their Equipment's was proper- yes</li> <li>3. Battery bank checked and found parameters within limit. (SPG Range- 1180 to 1220 /Cell voltages range-1.98 to 2.2V). yes</li> <li>4. Battery Backup Test register was checked and found ok.</li> <li>5. Battery connecting Terminal were provided with proper sized nut and bolts with petroleum jelly applied on it.</li> <li>6. Battery sets are to be clean without dust accumulation to avoid shorting of terminals and Earth faults.</li> <li>7. Date of Installation and Number of Sets and AH Capacity was mentioned in OFC Room.</li> <li>8. Proper wiring and lacing of Cables inside the room was available.</li> <li>9. DOI of OFC equipment to be mentioned in OFC Room.</li> <li>10. Entry for rodents inside OFC room was sealed properly.</li> <li>11. Exhaust fans were in working condition.</li> </ol>	<b>SSE/Tele/RJ N</b>
<b><u>12.2</u></b>	<p><b>SM's Room:</b></p> <ol style="list-style-type: none"> <li>1. All Control and Standby Telephones were checked and found working properly. Wiring of Telephones between Way Side Station Equipment to SM Panel were dressed properly</li> <li>2. Hot Line Telephones were checked and found ok.</li> <li>3. Driver Guard Communication with SM was checked in 25 W VHF set.</li> <li>4. LC Gate Telephone and Standby telephones sets was tested with respective adjacent LC Gates connected</li> </ol>	<b>DOM/NGP SSE/Tele/G/E</b>

	with Stations.	
<b><u>12.3</u></b>	<p><b>Passenger Amenities at Station: Manual PA system only</b></p> <ol style="list-style-type: none"> <li>1. Passenger Amenities daily checking register is available.</li> <li>2. No Passenger Amenity system to be out of order for more than two hrs plus travel time of maintenance staff- <b>yes</b></li> </ol> <ul style="list-style-type: none"> <li>• <b>UTS/Booking Office: working well</b> <ol style="list-style-type: none"> <li>i. Cleanliness of Datacom Equipments was checked and found ok.</li> <li>ii. Upkeep of Routers, Switch, Modems and UP was proper.</li> <li>iii. No Cracks/Seepage /entry for rodents was available.</li> </ol> </li> <li>• <b>Wi-Fi: ok</b> <ol style="list-style-type: none"> <li>i. Working of Wi-Fi installed at Station premises was monitored by connecting with mobile set and found working ok.</li> </ol> </li> </ul>	<b>SSE/Tele/RJN</b>
<b><u>12.4</u></b>	<p><b>Emergency Sockets: working satisfactorily</b></p> <ol style="list-style-type: none"> <li>1. Testing of Emergency Control communication was done and found working ok.</li> <li>2. To be checked Monthly by Supervisor Level and Twice a month in Technician Level.</li> <li>3. Emergency Sockets Mast were painted and direction of nearest (Telephone Indication/Marker) for Emergency socket on OHE Masts was available.</li> </ol>	<b>SSE/Tele/RJN</b>
<b><u>12.5</u></b>	<b>LC Gate connected with Stations.</b>	

	<ol style="list-style-type: none"> <li>1. Ring and Speech was checked and found ok.</li> <li>2. Proper wiring and lacing of Cables inside the room was available.</li> </ol>	<b>SSE/Tele/R JN</b>
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### **Counseling & staff grievances:**

<b><u>13.1</u></b>	<p>Counselling Staff on following lines was done –</p> <ul style="list-style-type: none"> <li>• Safety norms to be adhered to during rectification of failures &amp; day to day maintenance activity.</li> <li>• Requirement of disconnection for various activities.</li> <li>• Personal safety when on &amp; around the track.</li> <li>• Not to use mobile, ear phones when working on track.</li> <li>• Attending night failures jackets laminated must.</li> <li>• JPOs on joint works with Engg for Point &amp; track renewal/machine packing works.</li> <li>• Fire safety.</li> <li>• Procedures to be followed during non-signed movement of trains in the yard.</li> <li>• Any other issues to be discussed- advised to be stress free.</li> </ul>	<b>SSE/S/RJN JE/SIG/RS M</b>
<b><u>13.2</u></b>	<p>Grievances of staff to be noted for redress: Only one staff (Yogesh)Quarter is available at MUP, 3 more quarters type II, required.</p>	<b>ADEN/DG G</b>

Copy to –

- i. P.S. to Sr. DSTE/NGP for kind information please.
- ii. DOM/NGP for kind information please.
- iii. ARM/G for kind information.
- iv. ADEN/G for kind information and necessary action please.
- v. ADEE/G/G for kind information and necessary action please.
- vi. SSE/S/DgG, SSE/Tele/RJN/, JE/S/RSM

