EAST COAST RAILWAY
WALTAIR DIVISION

STATION WORKING RULES OF KORUKONDA [KUK] STATION

No.WTP/5/SWR/KUK

Date of Issue: _____

Date brought into force:_____

NOTE:-

The Station Working Rules must be read in conjunction with General & Subsidiary rules and Block Working Manual. These rules do not in any way supersede any rules in the above books.

(1) STATION WORKING RULE DIAGRAM

i] Station Working Rule Diagram No : SI/WRD/23133Alt-'H'

ii] CSTE/E.Co.Rly /Drg. No : 23133 Alt-'H'

iii] Date up to which corrected :

(2) **DESCRIPTION OF THE STATION:**

2.1 **GENERAL (LOCATION)**

i]	Name of the Station:	:	KORUKONDA
ii]	Class of station	:	'SPL' Class
iii]	Section:	:	HOWRAH-CHENNAI
Iv]	Double /Single/Multiple	:	Multiple line
v]	Electrified/Non Electrified	:	Electrified
vi]	Gauge BG/MG/NG	:	BG
vii]	Railway	:	East Coast railway
viii]	Route	:	'B' Route.
ix)	Situated at	:	KM 828.84
x]	Reckoned from	:	HOWRAH
xi]	Operation	:	Centrally operated with Visual Display Unit (VDU)
xii)	Standard of Interlocking	:	STD-III (R)

2.2 **BLOCK STATIONS ON EITHER SIDE AND THEIR DISTANCE, IBH, IBS & OUT LYING SIDING.**

S. No.	BLOCK STATION		DISTANCE			DIRECTION
A	ALAMANDA	:	7.105 KM.			VSKP END
B	VIZIANAGARAM	:	10.540 KM.			HWH END
C	Provision of IBS	:	NIL			
D	Automatic signals	:	**KUK-ALM**	**UP**		**UA-830/31, UA-832/11, UA-833/21.**
				DN		**DA-833/24A, DA-832/18A, DA-831/16A**
				MID LINE	**UP**	**MUA-830/32, MUA-832/12, MUA-833/18.**
					DN	**MDA-833/26, MDA-832/20, MDA-831/18**
			KUK-VZM	**UP**		**UGA-821/3, UA-822/17, UGA-823/27, UA-826/5**
				DN		**DA-826/20A, DGA-824/8A, DA-822/28A, DGA-821/18A**
				MID LINE	**UP**	**MUGA-821/4, MUA-822/20, MUGA-823/30, MUA-826/6.**
					DN	**MDA-826/18, MDGA-824/10, MDA-822/28, MDGA-821/18.**
E	D.K Stations /Outlaying sidings	:	NIL			

Automatic signaling arrangement is provided between KUK-ALM and KUK-VZM. Further, KUK-ALM and KUK-VZM section all lines have been divided into series of Automatic signaling section. Entry into Each of the running line portion is governed by two consecutive Auto signals. (Details of each signals is mentioned above).

2.3 **DIRECTION SETTING PANEL FOR BI-DIRECTIONAL SINGLE LINE** :

Direction of traffic for middle lines between KUK-ALM & KUK-VZM sections are to be established by a pair of direction setting Panels available at Station master VDU Panel room.

- For single Automatic block section between ALM-KUK, KUK will be the controlling station and ALM will be controlled station.
- For single Automatic block section between KUK-VZM, VZM will be the controlling station and KUK will be controlled station.

(Details of indications and operations of direction setting panel is given in Para No. 8.4 of Appendix-B)

2.4 **BLOCK SECTION LIMITS ON EITHER SIDE OF THE STATION ON DIFFERENT SECTIONS :**

Between Stations	The Point from which "Block Section" Commences	The Point at which "Block Section" Ends
KUK-ALM UP LINE	From UP Advanced starter signal No.SA-25 of KUK.	Up to BSLB of ALM.
KUK-ALM DN LINE	From DN Advanced starter signal No.SA-38 of ALM.	Up to first facing point no. 52A of KUK.
KUK-ALM MIDDLE LINE (UP)	From UP Advanced starter signal No.S-27 of KUK.	DN Advanced starter signal No. S-40 of ALM.
KUK-VZM DN LINE	From DN Advance starter signal No. SA-26 of KUK.	Up to first facing point No.156B of VZM.
KUK-VZM UP LINE	From UP Advanced starter signal No. SA-49 of VZM.	Up to first facing point No.51A of KUK.
KUK-VZM MIDDLE LINE (DN)	From DN Advanced starter signal No.S-28 of KUK on Middle line.	UP Advanced starter signal No. S-47 of VZM.

2.5 **GRADIENTS WITHIN STATION LIMITS:**

Gradient from the center of the station building.

i) Towards ALM end (UP Line).

From	To	DISTANCE	GRADIENT
0.000 M (CSB)	250 M	250.000 M	1 in 430 Falling
250 M	609 M	359.000 M	Level
609 M	702 M	93.000 M	1 in 400 Raising
702 M	1200 M	498.000 M	1 in 224 Raising
1200 M	1560 M	360.000 M	Level
1560 M	1780 M	220.000 M	1 in 200 Falling
1780 M	2220 M	440.000 M	1 in 400 Falling
2220 M	2390 M	170.000 M	Level
2390 M	2630 M	240.000 M	1 in 100 Falling
2630 M	3830 M	1200.000 M	1 in 250 Falling
3830 M	In to the Section	---	1 in 800 Falling

ii) Towards ALM end (DN LINE).

From	To	DISTANCE	GRADIENT
0.000 M (CSB)	250 M	250.000 M	1 in 430 Falling
250 M	702 M	452.000 M	Level
702 M	948 M	246.000 M	1 in 251 Raising
948 M	1170 M	222.000 M	1 in 600 Falling

1170 M	1300 M	130.000 M	Level
1300 M	1964 M	664.000 M	1 in 200 Raising
1964 M	2290 M	326.000 M	Level
2290 M	2669 M	379.000 M	1 in 160 Falling
2669 M	3710 M	1041.000 M	1 in 800 Falling
3710 M	In to the section	---	1 in 360 Raising

iii) Towards ALM end (MID LINE).

From	To	DISTANCE	GRADIENT
0.000 M (CSB)	250 M	250.000 M	1 in 430 Falling
250 M	607 M	357.000 M	Level
607 M	702 M	95.000 M	1 in 950 Falling
702 M	850 M	148.000 M	Level
850 M	1250 M	400.000 M	1 in 2100 Raising
1250 M	1550 M	300.000 M	1 in 400 Raising
1550 M	1720 M	170.000 M	Level
1720 M	2160 M	540.000 M	1 in 250 Raising
2160 M	3020 M	860.000 M	1 in 800 Raising
3020 M	3920M	900.000M	1 in 200 Falling
3920 M	In to the section	---	1 in 300 Falling

iv) Towards VZM end (UP LINE, DN LINE & MIDDLE LINE).

From	To	DISTANCE	GRADIENT
0.000 M (CSB)	128 M	128.000 M	1 in 430 Raising
128 M	615 M	487.000 M	1 in 260 Raising
615 M	1562 M	947.000 M	1 in 150 Raising
1562 M	2352 M	790.000 M	1 in 350 Raising
2352 M	2712 M	360.000 M	1 in 1750 Raising
2712 M	4707 M	1995.000 M	1 in 200 Raising
4707 M	In to the section	---	Level.

vii) Auto section gradients for section ALM-KUK (UP line):

From	To	Distance	Gradient
KM 829.610	KM 829.910	300M	1 in 200 Falling
KM 829.910	KM 830.160	250M	Level
KM 830.160	KM 830.520	360M	1 in 200 Falling
KM 830.520	KM 830.740	220M	1 in 400 Falling
KM 830.740	KM 831.180	440M	Level
KM 831.180	KM 831.350	170M	1 in 150 Falling
KM 831.350	KM 831.590	240M	1 in 250 Falling
KM 831.590	KM 832.790	1200M	1 in 800 Falling
KM 832.790	KM 833.650	860M	1 in 200 Raising
KM 833.650	KM 834.550	900M	1 in 300 Raising
KM 834.550	KM 835.410	860M	1 in 175 Raising

viii) Auto section gradients for section ALM-KUK (For Middle Line):

KM 829.788	KM 830.010	222M	1 in 600 falling
KM 830.010	KM 830.140	130M	Level
KM 830.140	KM 830.804	664M	1 in 200 raising
KM 830.804	KM 831.130	326M	Level
KM 831.130	KM 831.509	379M	1 in 160 falling
KM 831.509	KM 832.550	1041M	1 in 800 falling
KM 832.550	KM 833.040	490M	1 in 360 raising
KM 833.040	KM 834.840	1800M	1 in 200 raising
KM 834.840	KM 835.072	232M	Level

ix) Gradients For ALM-KUK AUTO SECTION (For DN Line):

KM 834.600	KM 833.320	1280M	1 in 175 falling
KM 833.320	KM 832.420	900M	1 in 300 falling
KM 832.420	KM 831.560	860M	1 in 200 falling
KM 831.560	KM 830.120	1440M	1 in 800 raising

x) Gradients For KUK-VZM AUTO SECTION (For UP Line):

KM 817.790	KM 821.090	3300M	Level
KM 821.090	KM 823.690	2600M	1 in 350 falling
KM 823.690	KM 825.210	1520M	1 in 200 falling
KM 825.210	KM 826.310	1100M	1 in 200 falling
KM 826.310	KM 827.610	1300M	1 in 400 falling

xi) Gradients For KUK-VZM AUTO SECTION (For Middle Line):

KM 819.952	KM 820.446	494M	1 in 870 raising
KM 820.446	KM 821.042	596M	1 in 250 falling
KM 821.042	KM 822.942	1900M	1 in 330 falling
KM 822.942	KM 824.147	1205M	Level
KM 824.147	KM 826.142	1995M	1 in 200 falling
KM 826.142	KM 826.502	360M	1 in 1750 falling
KM 826.502	KM 827.407	905M	1 in 330 falling
KM 827.407	KM 827.991	584M	1 in 150 falling

x) Gradients For KUK-VZM AUTO SECTION (For DN Line):

KM 827.530	KM 826.230	1300M	1 in 150 Raising
KM 826.230	KM 824.710	1520M	1 in 400 Raising
KM 824.710	KM 823.610	1100M	Level
KM 823.610	KM 821.010	2600M	1 in 350 Raising
KM 821.010	KM 817.760	3250M	Level

2.6 LAY OUT:

(A) RUNNING LINES IN THE MAIN YARD.

Sl. No.	Name of the line	Electrified/ Non Electrified	Platforms with length
1	Line No.-1 UP Loop)	Electrified	High Level (342.0 M x 7.0 M)
2	Line No.-2 (UP Main)	Electrified	Island High Level (337.45 M x 10.67 M)
3	Line No.3 (Middle Line)	Electrified	
4	Line No.4(Common Loop)	Electrified	Rail Level (350.9 M x 10.67 M)
5	Line No-5 (DN Main)	Electrified	

2.6.1 RUNNING LINES, DIRECTION OF TRAFFIC, HOLDING CAPACITIES IN CSL.

Sl. No.	Running Lines	Name of the Line	CSL in Mtrs.	Direction of Movements
1	Line No.1	UP Loop Line	762.43 (STR-SS)	(a) Trains coming from VZM and proceeding towards ALM are UP trains. (b) Trains coming from ALM and proceeding towards VZM are DN trains.
2	Line No.2	UP Main Line	777.29 (STR-SS)	
3	Line No.3	Middle Line	712.56 (STR-STR)	
4	Line No.4	Common Loop	724.90 (STR-STR)	
5	Line No.5	DN Main Line	871.19 (STR-SS)	

2.6.2 NON RUNNING LINES: -NIL-

2.6.3 ANY SPECIAL FEATURES IN THE LAY OUT:

Starter signal No.s 19 & 16 are placed at a distance of 3M from the replacement track circuit glued joint (in order to increase CSL).

2.7 LEVEL CROSSINGS:

The details of L.C. Gates are given in the Appendix 'A' of this SWR.

(3) SYSTEM OF WORKING AND MEANS OF WORKING:

System of working in force	KUK-ALM	Automatic Block System of Working
	KUK-VZM	
Double line/single line/multiple line	KUK-ALM	Double line (UP& DN) and Single line (Middle Line)
	KUK-VZM	Double line (UP& DN) and Single line (Middle Line)

(4) SYSTEM OF SIGNALLING AND INTERLOCKING:

4.1 SYSTEM OF SIGNALLING AND INTERLOCKING:

1	Standard of Interlocking	Standard – III(R)
2	Type of Signaling	MACLS
3	Mode of Operating the signals	Visual Display Unit (VDU)
4	Provision of Calling –On signals	Calling-on signals are provided below Home signals (i.e. in both UP & Down directions) and below starter signal no.19, 21, 23 & 20, 24, 26, 30 as per GR.3.13 (1) (b), (2)(3)(4) & (6) (b). In the event of failure of main reception/dispatch signal or admission on blocked line/ Shunting purpose calling–on signals may be utilized. Calling-on signal will be taken-off after the train has come to foot of reception/dispatch signals. The signal will take-off after a lapse of 60 Sec. for reception signals and for dispatch, will take off immediately. Detail procedure is available in Para --- of Appendix-B.
5	Provision of Shunt signals	Shunt back signals SH-6A/B/C/D, SH-8A/B and dependent shunt signals SH-19A/B, SH-17A/B, SH-15, SH-13 are provided towards VSKP end. Shunt back signals SH-5A/B, SH-7A/B and dependent Shunt signal SH-14, SH16A/B, SH18 are provided towards HWH end for shunting purpose.
6	Track circuits	All berthing portion of line No.1 to Line No.5 are track circuited. In addition there are short length track circuits in advance of Advanced Starter Signals and Home signal in both the directions are also provided. For Calling-on signals (Five Rail length) track circuits are also provided in rear of the Home signals in both directions. From last trailing point/fouling mark in either side of Yard to Advanced Starter Signals are also track circuited in UP middle line, UP line and Down lines respectively). Indications for the above track circuits/Axle Counters are available on VISUAL DISPLAY UNIT at SM's office. White indication on the VISUAL DISPLAY UNIT indicates track clear and Red light indicates track occupied condition.

<table>
<tr><td>7</td><td>Axle counters</td><td>Auto block sections between KUK-ALM and KUK-VZM are provided with Multi section digital axle counters/MSDAC.
For KUK-ALM SEC:- Each line in the section is divided into 4 track sections.
For KUK-VZM SEC:- Each line in the section is divided into 5 track sections.</td></tr>
<tr><td>8</td><td>Crank handle</td><td>When any point fails to operate normally by the Route Setting operation or through the concerned point button through VDU, it is inevitable to operate the points with crank handle. The SM on duty shall personally ensure clamping and padlocking of all facing and trailing points on the route. Crank handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle for motor operated points shall be followed as per operating manual Para-2.18 & 2.19 and Para No. 3.5, 4.2.3 of Appendix-B of this SWR for complete details.
<table>
<tr><th>Crank Handles</th><th>Points</th></tr>
<tr><td>CH1</td><td>51</td></tr>
<tr><td>CH2</td><td>53</td></tr>
<tr><td>CH3</td><td>55</td></tr>
<tr><td>CH4</td><td>57</td></tr>
<tr><td>CH5</td><td>52</td></tr>
<tr><td>CH6</td><td>54</td></tr>
<tr><td>CH7</td><td>56</td></tr>
<tr><td>CH8</td><td>58</td></tr>
</table></td></tr>
<tr><td>9</td><td>Emergency Point operation:</td><td>Emergency point operation facility is provided to operate the point from the VDU in case of failure of point controlling track circuit. Each operation of emergency point operation shall be recorded in the station diary and in the register meant for this purpose. (Refer 4.2 of Appendix-‘B’).</td></tr>
<tr><td>10</td><td>Showing of Veedor Counters</td><td>One counter icon has been provided on the VDU. When selected a drop down menu will appear indicating the following counters.
1. Emergency Route Release.
2. Emergency Point Operation.
3. Calling on counter (DN LINE)
4. Calling on counter (UP LINE)
When the pointing device is placed any one of the menu the latest counter number will pop-up on VDU.
Each operation of emergency is recorded by registering the next higher number. All such operations and the new number should be recorded in the train signal register, SM Dairy and register meant for this purpose.</td></tr>
<tr><td>11</td><td>Emergency route release indication:</td><td>The Electronic interlocking is based on the principle of ‘DEAD APPROACH LOCKING’. As such when a route is set and signal is taken ‘OFF’ on the route, the route gets locked. Normally the route is released by the passage of the train over the route.
When it becomes necessary to alter the route after the signal has been taken ‘OFF’ vide SR 3.36.02(a), click on the concerned signal. After clicking by the left button on the</td></tr>
</table>

		mouse a pop-UP menu will appear as shown above- Click on the cancellation menu (Main/Calling on) of the concerned signal, the signal will immediately go to ON aspect. After doing so click on the route release menu, the route locked indication will start flashing for 120 second. After completion of 120 seconds, the White light along with the White strip of light will disappear suggesting the route has been released. This action will be recorded in a counter. The counter will increment the number for each and every such action. In case the route illumination (white strip lights) does not disappear, it suggests that the route is not released/cancelled. In such case the concerned S&T staff should be advised immediately to release the route. Each operation of emergency cancellation of route should be recorded in the emergency route release counter register by registering the next higher number. All such operations and the new number should be recorded in the station diary Veeder counter register and in the train signal register.
12.	Emergency Gate Release	L.C. Gate control can be released and the gate can be opened by this operation when LC gate control remains in locked condition due to setting of any of the signal routes over it or otherwise. For releasing the gate by the Emergency operation the SM on duty has to cancel the signal by signal cancellation control of the relevant signal. Then he has to click the Emergency Gate release control in the Gate pop-up menu. Now the 'LOCKED' (Red) indication will flash for 120 seconds & after the time has elapsed the 'LOCKED' (Red) indication will vanish. Now the SM on duty shall transmit the 'GATE CONTROL' in this condition and 'KEY IN' indication starts flashing. Now the KEY can be extracted from the RKT at Gate Lodge and gate can be opened. This action will be recorded in a counter. The counter will increment the number for each and every such action and also, this number should be recorded by the SS/SM manually in a register. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Emergency Gate Operation along with the latest counter no. in a register
13.	Emergency Crank Handle Release	Emergency crank handle release operation facility is provided to operate the point by using the crank handle in case of Route locked condition. For Emergency crank handle operation the procedure laid down in Para No. 4.2.3 of Appendix-'B' shall be followed. Each operation of emergency crank handle operation shall be recorded in the TSR, station diary and in the register meant for this purpose.

4.2 CUSTODY OF RELAY ROOM KEY AND PROCEDURE FOR ITS HANDING OVER AND TAKING OVER BETWEEN STATION MASTER AND S&T MAINTENANCE STAFF:

Custody of Relay room key and procedure for its handover and taking over between SM and S&T staff has to follow the procedure as per JPO issued by COM and CSTE vide no. JPO/02/2012 dated 29.08.2012.

Relay room is provided with two independent locks. The key of one lock shall be in the personnel custody of Station Master on duty and the key of other lock shall be in the custody of S&T Maintainer. In the event of necessity such as for attending failure, or regular maintenance, on being requisitioned by S&T maintainer, SM shall hand over the key to the Maintainer. On completion of the work, maintainer shall lock the relay room and shall return the key to SM. The particulars of such transactions shall be entered by the SM in the relay room key register vide OM 2015 Para No.13.16

4.3 POWER SUPPLY:

A change over is provided in the Station Master's Office with the three power supplies viz., UP AT, DN AT and Local, for changing the switch to the required Supply position. A luminous indicator above the circuit breaker for each Supply indicates the availability of the Supply. The power supply arrangement for this station is described in detailed in the Para 23 & 24 of Appendix-B.

(5) TELECOMMUNICATIONS:

a) The Station is connected to VSKP -PSA Main line Control Circuit.
b) Railway Auto telephone is provided at the station.
c) Hot line telephone communication is provided between KUK-ALM and KUK-VZM stations.
d) Telephone communication is provided between Station Master and UP & DN CH locations.
e) Telephone attached to L.C. Gate No. ML-469 & ML-466.
f) The station is connected to VSKP - PSA traction power control circuit.
g) Station is provided with CUG.
h) 25 W VHF set is provided at the station.

(5.1) FAILURE OF COMMUNICATION :

A) Failure of all signals likely to last for some time and cause delay when no means of communications are available.	Refer G&SR 9.12.02
B) Procedure for working trains under Automatic Block system (Double Line) during obstruction of one line when no means of communication are available.	Refer G&SR 9.12.04
C) Working of trains under Automatic Block System (Double Line) during failure of the means of communication when signals are operative.	Refer G&SR 9.12.05
D) Procedure for working of trains under automatic block system (single line) during suspension of the panel working and when no means of communication are available.	Refer G&SR 9.12.06

(6) SYSTEM OF TRAIN WORKING:

The movement of trains is controlled by section controller on duty whose orders shall be complied with provided they do not contravene any provisions of General Rules, Subsidiary Rules, Station Working Rules, Block working manual and any other safe working instructions issued from time to time.

In the event of suspension of control working the Station Master on duty shall work independently in conjunction with the Station Master of adjoining Block Stations and shall be responsible to ensure that there is no undue delay to train operation in general.

6.1 DUTIES OF TRAIN WORKING STAFF:

The duty of the train working operational staff in detail is described in Appendix 'D' of this SWR.

6.1.1 TRAIN WORKING STAFF IN EACH SHIFT:

COMPLEMENT OF STAFF	STAFF IN EACH SHIFT
SS/SM	01
POINTS MAN	01

TRAFFIC GATE KEEPER	01

The above staff shall work as per roster issued from time to time by Divisional Railway Manager (P) and these rosters shall be conspicuously displayed in the SMs office and in Gate lodge for traffic gate man (Details of duties are given in APPENDIX-D').

6.1.2 RESPONSIBILITY FOR ASCERTAINING CLEARANCE OF LINES AND ZONES OF RESPONSIBILITY:

The SS/SM on duty is responsible to ascertain the clearance of the nominated line from home signal to advanced starter signal in each direction. The private number book should be under custody of SM on duty that is authorized to use it.

Sufficient P.No. Books and identification number sheets in sealed cover shall always be kept in stock by SM under lock and key by maintain register for this purpose.

6.1.3. ASSURANCE OF THE STAFF IN THE ASSURANCE REGISTER:

All staff before taking up independent charge of their duties at this station shall, make a written declaration in the Assurance Register that they have read the SWR thoroughly and understand the system of working in force at the station and must sign such declaration.

No Railway servant shall be entrusted with any duty involving the safety of the public unless the SM (In-Charge) is satisfied that the concerned staff is competent for the post. No Railway servant unless duly examined and certified shall be allowed to work the points and signals. The SM (In-Charge) is responsible to see that all the staff are well conversant with the Station Working Rules of the Station and their signature obtained in the Assurance Register after he is satisfied that they have thoroughly understood the working Rules of the Station. In case of Class-IV staff, their signature thumb impression must be obtained after explaining full about their duties and responsibility.

The SM (In-Charge) is personally responsible for maintaining the Assurance Register and for obtaining declaration from the staff working under him. The Assurance Register must be maintained in two parts and for Group-C staff and other for Group-D staff & duplicate copy of the Assurance Register must be maintained and kept in the personal custody by the SM (In-Charge).

Fresh assurance shall be obtained in the Assurance Register when:

1. He joins at the station as a new member.
2. There is any change in the Station Working Rules.
3. He resumes duty at the station after an absence of 15 consecutive days or more.

However, in the event of any corrections or modification in the SWR is involved the assurance of all staff whoever is entrusted the work of train passing duty shall be obtained a fresh in the assurance register by the in charge of the station before they are allowed to work vide SR-5.01.02.

6.2 CONDITION FOR GRANTING LINE CLEAR:

A. DOUBLE LINE AUTOMATIC BLOCK SECTION (For section KUK-ALM & KUK-VZM:

Taking/Granting line clear to UP and DN trains are not required during normal working as per BWM 7.05(1) and GR 9.01 (c)(i) & 9.01(2).

B. SINGLE LINE SECTION:

Line clear is required for establishing direction of traffic. Before granting line clear to a UP/DN trains, SM on duty at panel room shall ensure that block section is clear and private number shall be exchanged. (Refer GR 9.13(1)(2) and BWM 7.15 & 7.17).

C. ADEQUATE DISTANCE FOR RECEPTION OF TRAINS AT ALM

BERTHING LINE	FOR UP TRAINS		FOR DN TRAINS	
	FROM	TO	FROM	TO
UP LOOP Line No.1	STR SIG No. 13	End of Sand Hump Or UP Adv. Str. Sig. No. SA-25	---	---
UP MAIN Line No.2	STR. SIG. No. SA-15	UP Adv. Str. Sig. No. SA-25	---	---
MIDDLE LINE Line No.3	MAIN STR. SIG No. 17 A/B	UP Adv. Str. Sig. No. SA-25 Or UP Adv. Str. Sig. No. S-27	STR. SIG. No S-18	DN MID ADV STR SIG. No. S-28
Common Loop Line No.4	STR. SIG. No. 19 A/B	End of Over run line Or UP Adv. Str. Sig. No. SA-25 Or UP Adv. Str. Sig. No. S-27	STR SIG. No. S-16	End of Over Run Line. Or DN MID ADV STR SIG. No. S-28 Or DN ADV STR SIG. No. SA-26
DN Line No.5	---	---	STR SIG. No SA-14	DN ADV STR SIG. No. SA-26

6.2.1 <u>ANY SPECIAL CONDITIONS TO BE OBSERVED WHILE RECEIVING OR DESPATCHING A TRAIN</u>: NIL

6.2.1.1 <u>SETTING OF POINTS AGAINST BLOCK LINE</u>:

When a running line is blocked by stabled load, wagon, vehicle or by a train which is to cross or give precedence to another train or immediately after the arrival of a train of the station etc., the points in rear on double line sections and at either end in single line sections should be immediately set against the blocked line except when shunting or any other movement is required to be done on that line.[Refer GR 3.51.06(a)].

If all the lines at a station happen to be blocked, when line clear has been granted to a train, the point should be set for the line occupied by a stabled load or a Goods train. [Refer SR. 3.51.06 (b)].

The above precautions shall be taken in addition to the observance of other precautions. [Refer SR 5.04.01 & SR 5.23.01].

<u>Safety Point Alarm Unit (SPAU)</u>:

A safety point alarm is provided on the panel board with different indications:

1. On complete arrival of a train at the station, the SM has to set the points immediately against the occupied line.
2. In case the SM forgets to alter the points, after a time lag of 02 minutes, an audible buzzer will be heard from this instrument along with the ‘RED” indication of the line on which the train has arrived.
3. The SM shall then press ‘ACK’ button to mute the buzzer, and immediately set the required points against the line on which the train has arrived.
4. On setting the points against the occupied line, the RED indication will disappear.
   In case SM fails to set the required points against the occupied line a fault message will be triggered SMS will be sent to concerned station mobile and all concerned staff. Action will be taken against.

6.2.1.2	**RECEPTION OF A TRAIN ON BLOCKED LINE:** Trains are to be admitted on a blocked line, by taking off calling-on signal as per GR 5.09(2)(a) or if calling on signal cannot be taken off, trains are to be piloted in on a written authority on Form T/509 given by SM on duty and delivered by a competent railway servant to the Loco pilot of the train as per GR 5.09 (2)(c)(3)(4)(5) and SR 5.09.01.
6.2.1.3	**RECEPTION OF TRAIN ON NON-SIGNALLED LINE:** Before receiving a train on non-signaled line, the SM shall ensure that - a) The train is brought to a stand at the first stop signal. b) The line on which it is intended to receive the train is clear up to the trailing points or up to the place at which the train is required to come to a stand. c) All points over which the train has to pass are correctly set, the facing and trailing points are clamped and padlocked and d) The Loco pilot is authorized to pass the approach stop signals at 'ON' through a written authority. [Refer GR 5.10].
6.2.1.4	**DESPATCH OF TRAIN FROM NON-SIGNALLED LINE.** Whenever a train is to be dispatched from a non-signaled line, a Starting Order on form T-511 shall be given to the Driver to start from the non-signaled line. [Refer SR.5.11.1]
6.2.1.5	**DESPATCH OF TRAIN FROM LINE PROVIDED WITH COMMON STARTER SIGNAL: -NIL-.**
6.2.1.6	**ANY OTHER SPECIAL CONDITIONS.** **(A) SPECIAL INSTRUCTIONS:**
	1 No train or vehicle shall be stabled on non-isolated lines without a live engine attached. Otherwise, vehicle shall be secured as per Railway Board letter No. 2012/Safety/A&R/19/1, Dtd. 04.12.2018. 2 As per GR 5.20 (b) no shunting at VZM end should be allowed unless a locomotive is attached towards falling side of gradient. Also at VZM end trains should not be drawn up to the last stop signal and held up on the steep gradient in order to clear reception line for giving permission to approach to the following train. Following precautions must also be observed over and above those prescribed under approved special instructions. [Ref. RB Lr. No.2012/Safety (A&R)/19/1 dated 24.02.2012.] i) Before vehicles are uncoupled, the hand brakes should be applied wooden wedges/skids should also be used to prevent vehicles from rolling down. ii) As per as possible, the vehicle/load/train should be stabled on a line which is isolated from other lines, particularly running lines. 3. Vide CRS sanction letter No.1213 dated 04.12.2014 for infringement of gradient of KUK station yard steeper than 1 in 400 i.e. 1 in 260 on Existing/New track from CH.128 m to CH.615m in KUK yard (VZM end), the following stipulations should be followed.\ a) For shunting in falling gradient, engine should be kept to the lower end of the load from the point of view of gradient. b) Locomotive attachment/detachment or reversal must be avoided unless becomes inescapable. In case locomotive, attachment/detachment or reversal becomes inescapable adequate precaution as laid down in G&SR shall be strictly observed. **(b) SPECIAL RESTRICTIONS: -NIL-**
6.3	**CONDITIONS FOR TAKING OF APPROACH SIGNALS:**
The SM on duty shall nominate a clear line not only up to the starter but also for an adequate distance beyond it for reception of trains. [Refer GR 3.36, 3.38, 3.40, 4.17 and SR 3.36. 01, 3.36.02, 3.36.04, 3.40.01, 3.40.02, 3.47.01, 4.17.02, and Block Working Manual].	

6.3.1	**RESPONSIBILITY OF STATION MASTER FOR RESTORATION OF SIGNALS TO ON"** If a signal once taken 'OFF" for reception/dispatch of a train, and in emergency it required to put back to 'ON' in case of reception signal, the route over which the train would pass shall not be altered until the train has come to stand unless the route has to be altered to avert an accident. In case of departure signal, before changing the points or allowing any other movements the "Authority to Proceed" if any, handed over to the LP must be withdrawn and the Driver of the train concerned shall be advised of the change in writing and his acknowledgement will be obtained in a memo. [Refer SR 3.36.02 (a) & (b)].

6.4	**SIMULTANEOUS RECEPTION/DESPATCH, CROSSSING AND PRECEDENCE OF TRAINS.**			
	According to the existing interlocking at this station the simultaneous reception and dispatch of trains is permitted as stipulated below:			
	a)	Reception of a DN train from DN line on line No.3 (Middle line)	&	Dispatch of a DN train from line No.4/5
	b)	Reception of a DN train from DN line on line No.4 (Middle line) setting ORL.	&	Dispatch of a DN train from line No.3/5
	c)	Reception of an UP train on line No.4 (setting ORL)	&	Dispatch of another UP train from line No.3 or 2 or1.
	d)	Reception of an UP train on line No.1 (setting Sand Hump)	&	Dispatch of another UP train from line No. 2

6.5	**COMPLETE ARRIVAL OF THE TRAINS:** The entire block section between KUK-ALM and KUK-VZM on both UP, DN, and Middle lines are provided with Multi Section axle counters (MSDAC). The position of Auto signals and axle counters display is provided at SM Room through separate monitors. The position of the auto section whether 'occupies' or 'clear' is indicated in separate monitor provided at SM's room. Both side Advanced Starters are controlled by signal in advance of Auto section. As soon as train occupies the first auto section, the 'RED' indication appears in the VDU. After whole train clears the first auto section, clear indication 'white' appears on the VDU of auto section. When the train clears the track circuit provided beyond the UP home signal, this indicates complete arrival of the UP train. When the train clears the track circuit provided beyond the DN Home signal, this indicates complete arrival of the DN train. Thereafter, SM on duty shall inform to the SM of the rear station regarding complete arrival of the train indicating the number and description of the train and its arrival time supported by the Private Number. If a train passes through the station without confirming the last vehicle indicator, the station master on duty shall advise the station in advance to stop the train for last vehicle verification and he need not to withhold closing of block section in rear. He shall obtain confirmation under exchange of private number about the complete arrival of the train with its last vehicle from the station in advance and subsequent trains may be dispatched. [Refer SR 4.17.02 and 4.17.03]. A resetting arrangement for resumption of the system in case of failure of axle counters have been provided in the SM room after being assured by both SM that the last vehicle has arrived complete at the receiving station by exchanging Private Number, then resetting to be compiled. (Refer Para no. 8.1, 8.2 & 8.3 of Appendix-B)

6.6 DESPATCH OF TRAINS:

6.6.1 DESPATCH OF TRAINS BETWEEN KUK-ALM & KUK-VZM (DOUBLE LINE SECTION):

Dispatch of trains under Automatic Block system between section shall be governed in accordance with the provisions contained in G&SR Para Nos. 9.01(1)(a)(b)(c), i, ii, 9.01(2), 9.02(1)(2)(3)(4)(5) and SRs there to 9.09, 9.10(1)(2) and SRs there to 9.12 and SRs there to 9.14 and SRs there to and 9.15 and Block Working Manual Chapter No.VII.

6.6.2 DESPATCH OF TRAINS BETWEEN KUK-ALM & KUK-VZM (SINGLE LINE SECTION):

For dispatching trains in UP & DN directions, SM on duty shall establish direction of traffic. Before establishing direction of traffic in UP & DN direction, SM on duty at Panel shall ensure clearance of the block section under exchange of Private Number with adjacent stations. Private Numbers exchanged shall be recorded in the Train Log Register at both stations. (for detail procedure of working refer 8.4 of Appendix 'B').

6.6.3 ISSUE OF CAUTION ORDERS:

Whenever in consequent of the line being under repairs or for any other reasons special precautions are necessary, a caution order detailing the kilometre and speed at which train should run with reasons for taking such precautions shall be handed over to the Guard and Loco pilot in terms of GR 4.09 and SRs thereto.

6.7 TRAINS RUNNING THROUGH:

The provision of GR 3.40, 4.17, 4.42 with relevant SRs and SR 3.42.02 (a)(iv) and other relevant provision of BWM shall be observed.

6.8 WORKING IN CASE OF FAILURE:

PROCEDURE TO BE FOLLOWED FOR WORKING OF TRAINS DURING FAILURE / SUSPENSION OF INTERLOCKING / SIGNALS / POINTS:

TRACK CIRCUITS	Whenever there is a failure of track circuit zone the clearance of the zone must be verified physically before initiating any movement over the zone. When there is a failure of point zone track circuit the concerned point may not operate from the VDU. In such case the points may be operated by crank handle/ by emergency point operation and on ensuring clearance, the movement over such point/points may be initiated.
AXLE COUNTER	Multi section digital axle counter (MSDAC) is provided for all lines in Automatic Block sections. During failure, the procedure as laid in 8.0 of Appendix-B for resetting of the MSDAC. If the axle counter indication does not appear 'GREEN & continues to show 'RED' condition after resetting, the concerned block section shall be suspended & failure intimation to be given to Sectional Signal Maintainer /JE/SSE (signal) for rectification.
RECEPTION OF TRAIN ON OBSTRUCTED LINE	Whenever trains are to be admitted on blocked line it is necessary that the train is piloted in by a written authority T/509 given by the SM on duty and delivered by a competent Railway servant to the Loco pilot of the train. Calling on signal may be taken off. (Refer GR 5.09 & SRs there to)
RECEPTION OF A TRAIN NON-SIGNALLIED LINE	During failure of track circuit of berthing portion of the line, clearance of line must be verified physically before initiating piloting IN or OUT as the case may be. The responsibility of verification of the clearance of the track circuit zones lies with the SM on duty operating the VDU.
DEFECTIVE SIGNALS	When signals become defective, the procedure laid down in GR 3.68 to 3.81 & 9.12 to 9.14 and SR thereto shall be followed.

DEFECTIVE INTERLOCKING	When interlocking becomes defective the station master on duty shall be responsible to personally supervise the setting, clamping and padlocking of all required facing and trailing points with crank handle for admission of all trains vide SR 3.69.03(c).
DEFECTIVE DAMAGED POINTS	When any point fails to operate normally by the route setting operation or individually through VDU it is inevitable to operate the points with crank handle. The SM on duty shall personally ensure clamping and padlocking of all facing and trailing points on the Route. Crank handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for the use of crank handle. (GR 3.77)

6.9 PROVISIONS FOR WORKING OF TROLLIES/ MOTOR TROLLIES/ MATERIAL LORRIES ETC"

Motor trolleys shall be worked as per GR 15.25.08 and BWM 7.11 and 7.22. Material Lorries shall be worked in accordance with GR.15.27 and SRs there to.

i) Trolleys, Motor Trolleys, Lorries which are not insulated shall not be allowed to run except on Line clear.

ii) Motor Trolleys/Tower Wagon/material Lorries are not likely to actuate the Axle Counter correctly.

iii) In all other respects the Working of a light motor trolley shall conform to the rules laid down for ordinary trolleys while running without block protection and to those laid down for motor trolleys while running under block protection or following another light motor trolley.

7.0 <u>BLOCKING OF THE LINES:</u>

When a running line is blocked by stabled load, wagon, vehicle or by a train which is to cross or give precedence to another train or immediately after arrival of a train at the station the points at either end on single line section should be immediately set against the block line except when shunting or any other movement is required to be done immediately in that direction on that line. Line block is to be activated on VDU by SM on duty by following procedure laid down in Para 4.4.1 & 4.4.2 of Appendix-B.

A clear remark in 'RED' ink shall be made immediately in the train signal register and a record shall be made in the Station Master's diary also. Stable load register is also to be maintained. The stable load or loose vehicles are to be secured to prevent rolling down of vehicles. [Refer SR 3.36.3(b), GR 5.23 and SR5.23.01]

A. <u>SECURING OF VEHICLES:</u> -

As far as practical, loose vehicle shall not be allowed to stand on the running line. However under unavoidable circumstances, if it is necessary to detach vehicle from a train or to stable a train and leave them standing on the running line, the SM on duty shall be responsible to secure the vehicle/stable loads to prevent rolling down of vehicles and arrest obstruction and fouling.

NOTE:- Special care should be taken to secure special type vehicles fitted with roller bearing while standing in siding or in running lines. [Refer GR 5.23 & SR 5.23.01].

B. <u>LOADING AND UNLOADING OF VEHICLES ON RUNNING LINES</u> :

Except small loading and unloading of vehicles on running line is prohibited unless permitted by DOM vide SR 5.19.01.

8.0 <u>SHUNTING</u>

8.1 <u>GENERAL PRECAUTIONS.</u>

Shunting will be carried out at the station in accordance with General Rule and relevant Subsidiary Rules and Block working Manual [Refer GR 3.46, 3.52 to 3.56, 5.13 to 5.23, 8.09 to 8.15]. The SS/SM on duty is authorized to supervise shunting operation. Normally shunt, back shunt, shunt below starters and intermediate starter signals shall be used for shunting operations. The official supervising the shunting shall ensure the correct setting,

clamping and padlocking of points in case of Non-Signalled movements.

The SS/SM on duty and the official supervising shunting shall cooperate with each other regarding shunting operations. Neither reception signals nor departure signals shall be taken 'OFF' unless the shunting is isolated and the path of incoming or outgoing train is free from obstructions. The overrun line may be used as shunting neck.

NOTE:

1. Shunting towards automatic block system refer GR 5.13, 5.14, 5.16, to 5.23 with SR there to and refer BWM 7.18, 7.19, 7.20 and 7.21.
2. For any non-signalled movement physical verification of the clearance of the crossover points shall be ensured by the Train Manager/SM on duty for supervising shunting operations.

a) SHUNTING IN FACE OF AN APPROACHING TRAIN:

Shunting in the face of an approach train is strictly prohibited.

b) PROHIBITION OF SHUNTING, SPECIAL FEATURES IF ANY:

(i) Hand shunting /Fly shunting is prohibited at both ends of the yard.

(ii) For shunting in both end of the yard, Engine should be leading towards the falling gradient.

c) SHUNTING OUTSIDE STATION SECTION:

(i) When line clear has been given, no shunting shall be permitted in the block section rear vide GR. 8.05(2).

(ii) Shunting or obstruction for any other purpose shall not be permitted in block section in rear unless it is clear and is blocked back.

(iii) Shunting or obstruction for any other purpose shall not be permitted in block section in advance unless it is clear and is block forward vide GR 8.06.(3).

(iv) Refer block working manual 7.18 to 7.21 for shunting towards automatic block section.

d) SHUNTING WITHIN STATION SECTION : If necessary signals are kept at "ON", shunting may be carried on within the station section but this shall be done only when there is no approaching train since shunting in the face of an approaching train is prohibited at this station.

e) AUTHORITY FOR SHUNTING OPERATIONS:

Shunt Signals are provided for shunting purpose. If Shunt signals fails or shunting have to perform at location where shunt signals not provided SM on duty shall issue written shunting authority on form T/806 to the Loco Pilot through Train Manager of the train. In T/806, it is required to mention clearly the limits up to which shunting is permitted as also the lines, occupied in shunting. The relevant provisions of GR 5.14 and SR thereto shall be meticulously followed.

This Memo shall be withdrawn whenever shunting is to be suspended for reception and Dispatch of train if the line on which shunting is performed is not isolated. After Shunting is completed the order shall be collected from the loco pilot cancelled and Pasted with the record foil as per SR 5.13.02.

9.0 ABNORMAL CONDITION:

a) The rules to be observed in the event of abnormal conditions:	
i) During failure of all or series of signals in the Automatic Block System (Double Line) likely to last for some time and cause serious delay while means of communications are available.	Refer G&SR 9.12.01.
ii) During Failure of all signals likely to last for some time and cause serious delay when no means of communications are available.	Refer G &SR 9.12.02.
iii) Working of trains under Automatic Block System (Double Line) during obstruction of one line when signals are operative and communications are available.	Refer G&SR 9.12.03.

iv) Procedure for working trains under Automatic Block system (Double Line) during obstruction of one line when no means of communication are available.	Refer G &SR 9.12.04
v) Working of trains under Automatic Block System (Double Line) during failure of the means of communication when signals are operative.	Refer G & SR 9.12.05
vi) Procedure for working of trains under automatic block system (single line) during suspension of the panel working and when no means of communication are available.	REFER G &SR 9.12.06
vii) Procedure for working of trains under automatic block system (single line) during suspension when direction of traffic cannot be established but line clear can be obtained from the block station in advance by any of the communication given in SR 9.12.07.	REFER G &SR 9.12.07
viii) Working of trains on the obstructed line in case of obstruction or accident in automatic block signaling section.	Refer G & SR 9.12.08.
ix) Failure of axle counter of Automatic block section	Refer Para No. 12 of Appendix B
x) Procedure when semi-automatic stop signal is 'on'.	Refer GR 9.14 and SR there to
xi) Failure of MTRC	NIL

(b) **Procedure for emergency operation of Points** :

(i) The detailed procedures for emergency crank handle operation of motor operated points are mentioned in Para No. 5.3, 6 &7 of Appendix 'B'.

(ii) Procedure for Emergency operation of point with axle counter/track circuit failure is mentioned in Para No. 5.2 of Appendix 'B'.

(c) Certification of clearance of track before "calling on signal" operation is initiated,

Before taking off Calling-on Signal during failure of track circuit/axle counter, the route and the clearance of the track over which train would pass to be verified by SM.

(d) Reporting failure of points, Track circuits / Axle counters and interlocking:

(i) Whenever there is a failure of points, track circuits / axle counters or any other interlocking gear at the station the failure should be reported by SM on duty to the concerned signal maintenance staff on duty responsible for attending the failure and only after receipt of the written memo from the Signaling Maintainer for rectification of the fault, SM should restore the normal working.

(ii) The entries in failure register to be done with message to the Section Controller.

10.0 **ESSENTIAL EQUIPMENT AT THE STATION:**

(Details are given in Appendix-'E')

11.0 **FOG SIGNAL MEN NOMINATED TO BE CALLED IN CASE OF FOG:**

Placing of detonators during foggy weather is dispensed, since the station is equipped with Automatic signalling territory vide SR 3.61.01(a), note (i) and (ii) respectively.

LIST OF APPENDICES		
APPENDIX-A	:	WORKING OF LEVEL CROSSING GATES
APPENDIX-B	:	SYSTEM OF SIGNALLING AND INTERLOCKING AND COMMUNICATION ARRANGEMENTS AT THE STATION.
APPENDIX-C	:	ANTI COLLISION DEVICE (RAKSHA KAVACH)
APPENDIX-D	:	DUTIES OF TRAIN PASSING STAFF IN EACH SHIFT
APPENDIX-E	:	LIST OF ESSENTIAL EQUPMENTS PROVIDED AT THE STATION
APPENDIX-F	:	RULES OF WORKING OF DK STATIONS, HALTS, IBH, IBS AND OUTLYING SIDINGS
APPENDIX-G	:	RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS.

APPENDIX-B

SYSTEM OF SIGNALLING AND INTERLOCKING AND COMMUNICATION ARRANGEMENTS AT KORUKONDA STATION.

1. BRIEF DESCRIPTION OF THE SIGNALLING AND INTERLOCKING INSTALLATIONS:

This is a 'SPL' class station provided with Standard –III(R) interlocking. The station is provided with Route setting type Electronic Interlocking between points, signals, track circuits and other signaling gears. The Station is equipped with Multiple Aspect Colour Light Signaling. All points and Signals etc. are power operated through a central **Visual** Display Unit (VDU) with a standby installed in the SS/SM's Office. Sections of KUK-ALM and KUK-VZM are provided with Auto signaling system with Multi section Digital Axle counter (MSDAC).

2. DESCRIPTION OF OPERATOR CONSOLE CUM VISUAL DISPLAY UNIT (VDU):

The Operator Console cum Visual Display Unit (VDU) is provided for operation of Signals, Points, L.C Gates, Crank Handles, Siding & other controls etc. A Mimic yard diagram, based on SI plan No. SI/23133 Alt-H will be displayed on the VDU. The VDU is used for controlling and monitoring the station. Indications on the Station yard mimic diagram of VDU will be dynamically updated.

2.1 SYSTEM OVERVIEW:

The PC-based (**operator VDU**) for the operation of Signals, Points, Crank Handles and Siding Controls, etc. The SM of a station (hereinafter referred also operator) required to be familiar on the specific station's SWR (station working rules).

Operator VDUs consist of CPU with a colour monitor, keyboard and pointing device (mouse). Through communication media the exchange of control and indication messages takes place with operator VDU. The Software is installed to display the Station Yard Mimic diagram on the operator VDU and it allows access to all functions by selecting menus with a click of mouse on the corresponding function icon. By selecting the menu, the function (Signal clear and cancellation, Route release, Point operation, etc.) can be executed.

The operator VDU is used for controlling and monitoring the station. However, indications on the Station yard mimic diagram of operator VDU will be dynamically updated.

2.2 DUAL VDUs – MODE OF SELECTION:

The privilege has been given to the operator for controlling the station through VDU-1 or VDU-2 by selection through switch provided on the SM's table.

The operator VDU is having controls to operate the field gears through the Mimic diagram. A Mimic panel diagram displayed on the operator VDU is an exact replica of yard that suits SI plan.

2.3 ICONS AND INDICATIONS PROVIDED ON THE VDU:

In addition to mimic yard diagram including signal, points, track circuit, Axle counters, L.C. gates, sidings as indicated in the WRD, various other ICONS and indications have been provided on the VDU. A brief description of the same are described below.

SL NO	ICONS	INDICATIONS	FUNCTIONS	REMARKS
1	SS/SM's Key	Green light when	Ensures operation of	Protected by pass word.

		key is 'IN'	VDU by authorized person	
2	---	Emergency Route release- UP & DN	Flashing indication appears when Emergency route release operation is initiated.	---
3	---	Emergency Gate release	Flashing indication appears when Emergency gate release operation is initiated.	---
4	Emergency Point operation key	Green light when key is 'IN'.	Ensure emergency point operation by authorized person.	For each operation concerned counter shall register one count higher.
5	---	System indication central- ON/Off	Indicates System 'A' or 'B' is in working mode.	---
6	---	System indication end-ON/Off	Indicates end system is in working mode or not	---
7	Point failure Ack. button	Red	Flashing indication appears when any point fails. SS/SM has to left click on the icon to acknowledge.	Buzzer will sound. On acknowledgement buzzer stops. After verification at site inform S&T staff immediately.
8	Signal failure Ack. button	Red	Flashing indication appears when any signal fails. SS/SM has to left click on the icon to acknowledge.	Buzzer will sound. On acknowledgement buzzer stops. After verification at site inform S&T staff immediately.
9	CH-1, CH-2, CH-3, CH-4, CH-5, CH-6, CH-7 & CH-8 Icon buttons	Yellow lamp indicates 'KEY IN'. Red lamp indicates 'CH LOCKED'.	In normal condition yellow lamp will be lit. Whenever the crank handle is locked in route or otherwise red indication will glow.	---
10	L.C. Gate control-64 button	Yellow lamp indicates 'Gate Closed'. Red lamp indicates 'Gate LOCKED'.	SS/SM shall right click on the button icon to select menu to Transmit/ Receive/ emergency operation of gate as required.	In case of emergency operation 'Emergency gate release' indication will appear. For each operation concerned counter shall register one count higher.
11	Counter	---	As and when required SS/SM shall point the curser on the counter icon and right click on it. A drop down menu will appear indicating all the counters available in the system. SS/SM shall select the required counter on the menu and	---

			can read the latest counter reading.	
12	Line Block button.	Red when blocked	SS/SM shall point the curser on the line block icons provided on VDU for concerned line and left click. One drop menu will appear indicating line blocked and un-blocked, SS/SM has to select the required menu.	When the block is selected then and Red indication appear above concerned line icon.
13	Direction setting icon	UP & DN indications	SS/SM Shall change the direction from UP to DN for establishing direction for middle line and vise-versa.	

3. OPERATIONAL PROCEDURE THROUGH VDU AND INDICATIONS:

In addition to the mimic yard diagram various other indications will be available on the VDU, The implications of different indications provided and the operational procedure for different functions shall be strictly followed as per the following description

3.1 ELECTRONIC INTERLOCKING (E.I) SYSTEM INDICATIONS

Electronic Interlocking Equipment (E.I) at the center can work in either of the two modes lie, System-'A' or System-'B' On the VDU (Computer), there are two system indications in which Green indication mentioning the On-line system and the Red indication mentioning that the system is in power off condition

3.2 OPERATION PROCEDURE OF SS/SM's KEY:

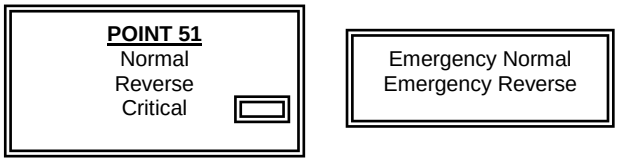
To prevent the unauthorized operation by any person other than S5/SM on duty this facility is provided on VDU. On duty SS/SM needs to track the pointer to the "SS/SM KEY" Icon and click the 'KEY IN' menu by the clicking left button of the mouse, by this a Password window will appear. SS/SM on duty needs to enter the password and press the 'OK' Button provided on the Password window. This will allow operating all the controls e.g., Signals, Points, and Crank handles Etc. through VDU. In case incorrect password or user name is entered, no operation can be made. In such cases the same procedure is to be repeated till correct password is entered. The user name is **ECOR** and the password of this station is **KUK**.

Enter the USER NAME and PASSWORD and click the OK button. Now the OP VDU is ready for use & the entire yard can be controlled from the VDU.

Similarly select the KEY OUT when the Station Master to Prevent the Unauthorized Operation with User name and password.

3.3. OPERATION AND INDICATION OF POINT:

To Operate the Point the SS/SM needs to track the mouse pointer to concerned point's Normal/Reverse indications on the VDU, after clicking by the left button on the mouse a pop-up menu will appear as below:



3.3.1. REVERSE TO NORMAL OPERATION:

Track the pointer to NORMAL menu and click. A Normal flashing indication will appear and the indication will be steady after the point is set to Normal.

3.2.2. NORMAL TO REVERSE OPERATION:

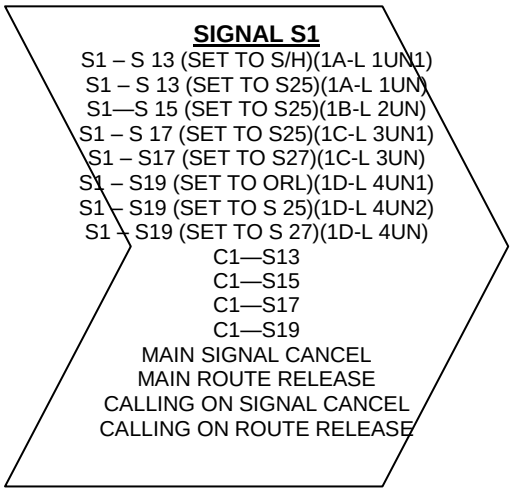
Track the pointer to REVERSE menu and click. A Reverse flashing indication will appear and the indication will be steady after the point is set to reverse.

3.3 POINT INDICATIONS:

When the point is free a SS/SM all steady strip of light will appear in the point zone (In case of cross-over at both ends) indicating the point is in normal/reverse condition. When the point is operated the same strip of light starts flashing till the point is set and becomes steady when the point is set and detected. When the point is engaged in a route a SS/SM all yellow light will appear near the point indicating that the point is locked and cannot be operated now.

3.4 PROCEDURE FOR SETTING OF ROUTES AND TAKING OFF SIGNALS:

To Take-Off a Signal on the desired route the SS/SM on duty needs to track the mouse pointer over the concerned Signal on the VDU, after clicking by the left button of the mouse a pop-up menu will appear as below:



SS/SM on duty will select the route as per the requirement by moving the mouse pointer on the appropriate menu & left clicking on the menu. It will set the route and clear the signal provided all the conditions required to clear the signal is satisfied. Similarly by following the similar procedure operation of other signals can be done.

3.4.1 SETTING A ROUTE AND ITS INDICATIONS:

To set a route of a signal, click on a possible route of the signal, after doing so the route gets initiated & Red-flashing indication will appear on the replacement track of the signal Point operation is initiated as per the requirement of the desired route and Normal/ Reverse set indications will starts flashing if favorable point detection is not available. After setting of points in the route, overlap & isolation flashing indication will be replaced by steady

indication and a complete yellow "Route set' indication will appear from the replacement track of the signal to the last track of overlap section of the route. Also the points lock indication will appear. A Point locked can be ensured from the Red Steady indication will appear near the point. Finally a Route locked Yellow Steady indication will appear on the immediate rear of the signal. Now the signal will be taken off. The yellow route set indication will turn to red when different track circuit portion within the route is occupied during passage of a train.

3.4.2 SHUNT SIGNAL OPERATION:

The same procedure as main signal has to be followed as explained above. To set the signal route for shunt signals SS/SM on duty shall put the pointing device on the Shunt signal icon and left click on the same. A drop down menu will appear indicating different actions that can be selected. After selecting the desired route SS/SM on duty shall left click on it. Desired will be initiated and the Shunt signal will be taken off.

3.4.3 CALLING ON SIGNAL OPERATION:

The same procedure as main signal has to be followed as explained above. To set the signal route for CALLING ON signals SS/SM on duty shall select the desired route and left click on the same after a train occupies the approach track circuit in immediate rear of the stop signal. The signal clears immediately for starter signals and a lapse of 0 seconds for starters and 60 seconds for Home signals provided other conditions are fulfilled.

3.5 CRANK HANDLE CONTROL OPERATION:

Normally a KEY IN' (Yellow) indication will appear on the VDU indicating that the crank handle is free. To Transmit or receive control of the Crank Handle, click on the crank handle control button icon provided like the following on VDU.

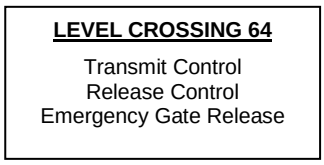
The appearing pop-up menu gives details of the possible commands on the Crank handle.

To Transmit the Crank Handle KEY to the field personnel SS/SM on duty has to click transmit control menu. After transmission the 'KEY IN' indication will starts flashing, now the KEY can be extracted from the RKT at site. After extracting the key from the RKT, the 'KEY IN' indication will disappear. When the Manual point operation is over, after putting the Siding control key in the RKT, KEY IN' flashing indication will appear on the VDU, Now the SS/SM on duty has to Release the control for the Steady indication by clicking release control menu.
A Crank handle locked indication (Red) will appear when the particular point is on the signal route set over it or engaged in route setting in any other way.

3.6 LEVEL CROSSING GATE OPERATION:

To Transmit or Release control of the Level crossing gate, click on the Level crossing control button icon provided like the following button on the VDU.

The appearing pup-up menu gives details of the possible commands on the Level crossing gate.



Normally no indication will be available on the VDU indicating that the gate control key is out and gate is open. When it is required to close the gate SS/SM on duty shall intimate the gate man to close the gate supported by exchanging PN. Up on instructed by the SS/SM on duty the gate man shall close and lock the gate and after reversing the concerned slot lever he shall transmit the gate control key to station by inserting and transmitting the key in the RKT. A flashing yellow indication will appear on the VDU seeing which SS/SM on duty receive the control by clicking on the L.C. Gate control button icon and select 'Receive'. The flashing indication shall become steady
When the key is required to be transmitted to the Gate man, SS/SM on duty has to transmit the control by clicking, after transmission the KEY IN indication will starts flashing, now the KEY can be extracted from the RKT. When the gate has been closed, locked & slot lever in reverse position, after putting the key in the RKT, a KEY IN flashing indication will appear on the VDU, Now, the SS/SM has to release the control for the steady indication.
The locked indication will appear when the LC Gate has locked by initiation of any of the possible signal routes.

3.7 OVERLAP TIME RELEASE (WHITE LIGHT):

Separate indications (White Light) for each overleap is provided near the starter signal to indicate the free or locked condition of overlap. This indication light will glow when overlap is locked by any Home Signal route and there will be no light when overlap is free. The locked indication starts flashing when the approaching train clears the rear end point zone track and occupies the berthing track. After a time release of 120 seconds the white flashing light will disappear indicating concerned overlap is free.

4.0 EMERGENCY OPERATIONS:

To carry out different emergency operations the following procedures are to be followed.

4.1 CANCELING A ROUTE/EMERGENCY ROUTE RELEASE:

To cancel a signal route when the route is set and the signal is taken-off, click on the signal. After clicking by the left button on the mouse, a pop-up menu will appear as shown in Para 3.4 above. Click on the cancellation menu (Main/ Calling on) of the concerned signal, the signal will immediately go to 'ON aspect, after doing so click on the Route release menu the route locked indication will starts flashing for 120 sec & the Emergency Route Release Indication (UP / DN as the case may be) will Hash for the entire time interval. After the completion of 120 sec, the locked route will be released. This action will be recorded in a counter, the counter will increment the number for each and every such action and also, this number should be recorded by the SS/SM on duty who shall record the details of the Route cancellation along with the latest counter no. in a register.

4.2 EMERGENCY OPERATION OF POINTS:

When the Point zone Track circuits/ Axle counters failed without any Point lock condition any signal routes, a point can be operated by the Emergency Point operation.

Note: Before resorting to this operation SS/SM on duty shall verify that the point zone is clear of any vehicle occupying the track section and the same is clear of any obstruction.

4.2.1 NORMAL OPERATION:

Before doing the emergency operation the Emergency Point Operation Key is to be made "KEY IN" by clicking the KEY IN' menu. The user name and password is to be logged in. The user name of this station is 'ECOR' and password of this station is KUK. Track the pointer to 'EMERGENCY NORMAL' menu and click. A Normal flashing indication will appear and the indication will be steady after the point is set to Normal. This action will be recorded in a counter. The counter will increment the number for each and every such action and also, this number should be recorded by the SS/SM on duty who shall record the details of the Emergency Point Operation along with the latest counter no, in a register.

After the completion of the Emergency point operation, the Key to be 'KEY OUT" by clicking "KEY OUT" menu. The user name and password is to be given for "KEY OUT" also.

4.2.2 EMERGENCY REVERSE OPERATION OF POINTS:

Before doing the emergency operation, an Emergency Point Operation Key is to be made 'KEY IN' by clicking the 'KEY IN' menu. The user name and password is to be logged in. The user name of this station is 'ECOR' and password of this station is KUK. Track the pointer to 'EMERGENCY REVERSE' menu and click. A Reverse flashing indication will appear and the indication will be steady after the point is set to re verse. The counter will increment the number for each and every such action and also, this number should be recorded by the SS/SM on duty who shall record the de tails of the Emergency Point Operation along with the latest counter no. in a register meant for this purpose also in TSR & SM Diary.

After the completion of the Emergency point operation, the Key to be KEY by clicking 'KEY OUT menu. The user name and password is to be given for KEY OUT also.

4.2.3 EMERGENCY CRANK HANDLE RELEASE OPERATION:

When a crank handle is locked due to route set earlier is not released or otherwise to Transmit or Release control of the Crank Handle, SS/SM on duty shall cancel the relevant signal first and then click on the crank handle control button icon provided like the following on the VDU.

On clicking, the appearing pop-up menu gives details of the possible commands on the Crank Handle.

For Transmitting the Crank Handle KEY to the field personnel SS/SM on duty has to click transmit control menu. After transmission the 'KEY LOCKED' (Red) indication will start to flash for 120 seconds & KEY IN' remains steady. After a lapse of 120 seconds the 'KEY LOCKED' indication will vanish & KEY IN' indication will start to FLASH. After extracting the key from the RKT, the KEY IN' indication will disappear When the Manual point operation is over, after putting the emergency crank handle key in the RKT, flashing 'KEY IN' indication will appear on the VDU, Now the SS/SM on duty shall Release the control for the Steady indication by clicking "RELEASE CONTROL menu.

The counter will increment the number for each and every such action and also, this number should be recorded by the SS/SM on duty who shall record the de tails of the Emergency Crank

Handle Operation along with the latest counter no. in a register meant for this purpose also in TSR & SM Diary.

4.2.4 EMERGENCY CRANK HANDLE RELEASE DURING FAILURE OF BOTH THE VDUs (ACTIVE & STANDBY):

When both the VDUs (Active & Stand by) provided for operation of signals & points in EI station cease to work at the same time due to power failure or what so ever the reason, the SM on duty shall turn the key (ECH) to right provided in the key box fixed on the top of the counter box. By resorting to this, timer is initiated and all the crank handles are released at a time after 120 seconds. The SM on duty can set the required point/points through crank handles manually by extracting the key / keys from EKTs provided in the location boxes.

CRANK HANDLE CONTROLS FOR EMERGENCY OPERATON OF POINTS			
S.NO.	**Crank Handles**	**Control Points**	**Provided In**
1.	CH1	51	UP CH LOC 1
2.	CH2	53	UP CH LOC 1
3.	CH3	55	UP CH LOC 1
4.	CH4	57	UP CH LOC 1
5.	CH5	52	DN CH LOC 2
6.	CH6	54	DN CH LOC 2
7.	CH7	56	DN CH LOC 1
8.	CH8	58	DN CH LOC 1

4.3 EMERGENCY GATE OPERATION:

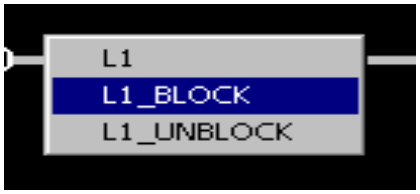
L.C. Gate control can be released and the gate can be opened by this operation when LC gate control remains in locked condition due to setting of any of the signal routes over it or otherwise. For releasing the gate by the Emergency operation the SS/SM on duty has to cancel the signal by signal cancellation control of the relevant signal. Then he has to click the Emergency Gate release control in the Gate pop-up menu. Now the 'LOCKED' (Red) indication will flash for 120 seconds & after the time has elapsed the 'LOCKED' (Red) indication will vanish. Then, the SS/SM on duty shall transmit the 'GATE CONTROL' in this condition and 'KEY IN' indication starts flashing. The KEY can be extracted from the RKT at Gate Lodge and gate can be opened. This action will be recorded in a counter. The counter will increment the number for each and every such action and also, this number should be recorded by the SS/SM on duty who shall record the de tails of the Emergency Gate Operation along with the latest counter no. in a register meant for this purpose also in TSR & SM Diary.

4.4 LINE BLOCK AND UNBLOCK (REMINDER COLLAR):

When SS/SM on duty requires demarcating a berthing/stabling line as BLOCKED / FREE line he shall adopt the following procedure:

4.4.1 LINE BLOCK:

To set the 'LINE BLOCKED', the SS/SM on duty shall select "L. No.____ BLOCK" command using the left mouse button, after selecting the Line Block that particular line will be blocked for all the possible Track circuit section on that particular line. The 'TRACK BLOCK yellow colour indication will be displayed after the successful application of such a blocking process on the VDU.



4.4.2 LINE UNBLOCK:

To release the set block of any particular line, the SS/SM should select "L. No._____ UNBLOCK" command using the left mouse button, after selecting the "L. No._____ UNBLOCK" that particular line will be available for the train movement leading to all the possible L1 Track circuit section.

5.0 MAIN SIGNAL LAMP FAILURE INDICATION AND BUZZER ACKNOWLEDGEMENT:

LED signal lamps are provided for main signals at this station. In case failure of LED signals will be indicated by the appearance of 'RED' light on VDU along with audible buzzer, which can be acknowledged and muted by pressing the 'SIGNAL FAILURE ACKNOWLEDGEMENT button icon. However the RED light will continue to glow until the LED lamp is replaced by a new lamp. For rectification of failure SS/SM on duty should inform the concerned S&T staff about the group which has failed. For the purpose of giving main filament failure indication the following groups are formed on either side.

5.1 POINT FAILURE INDICATION (RED), POINT FAILURE BUZZER AND POINT FAILURE ACKNOWLEDGEMENT:

Whenever there is failure of point due to non-setting, point failure indication flashing light appears near the point button icon along with point failure Buzzer, The buzzer stops when the point failure acknowledgement button icon is pressed, but the flashing light above the ACK button shall continue to glow. The fishing light at the concerned point zone can identify the defective point. After the failure is rectified, the flashing light above the 'POINT FAILURE ACK" button will disappear.

5.2 TRAIN RUN AWAY INDICATION AND BUZZER ACKNOWLEDGEMENT:

The train run away buzzer is provided to ensure passing of a train through IBS at 'ON' When the train hits the IBS track circuit, the audible buzzer will ring as well as red indication will appear in VDU to above the runaway muting button. The buzzer can be silenced by pressing of acknowledgement button icon 3.

5.2 SHOWING OF COUNTERS:

One counter icon has been provided on the VDU drop down menu will appear indicating the following counters.

1 Emergency Route Release.
2 Emergency Point Operation.
3 Emergency Gate release.
4 UP/DN/MID Calling-on counter.

When the pointing device is placed any one of the menu the latest counter number will pop-up on VDU.

6. TRACK CIRCUITS:

All lines are track circuited from Home signal to advanced starter signals at either direction of the yard. Coal Common loop line is provided with Axle Counter Approach Track Circuit (5 Rail lengths) for Calling-on signal also provided in rear of the Home signals in both directions. In addition there are (5 Rail length) track circuits beyond Advanced starter Signals in both the directions for replacement of Last Stop Signal. Indications for the above track circuits are available on VDU at SS/SM'S office. Yellow strip on VDU indicates ‘ROUTE IS SET AND TRACK CLEAR' and Red strip indicates "TRACK OCCUPIED CONDITION’.

On account of the doubtful operation of any track circuit by a light vehicle including self-propelled vehicle such as motor trolley or light engine or tower wagon etc., indicating the occupancy/clearance of track, it is necessary that the Station Master on duty satisfies himself that the said vehicle has cleared the point zone track circuits/Axle Counter by observing the track

indications of the track on either side of the crossovers by positively checking the entrance and 'exit track circuits/Axle Counter are showing occupancy and clearance in accordance with the train movement.

7. AXLE COUNTER:

Entire Block Section between KUL-ALM and KUK-VZM are provided with Multi section digital axle counters (MSDAC).

7.1 FOR SEC: KUK-ALM AND KUK-VZM:

Auto block sections are provided with Multi section digital axle counters (MSDACs). The position of Auto signals and axle counters display is provided at SM room through separate monitors. "RED" indication is provided when train is occupied and train passes through other track sections corresponding track section will be shown "RED"

FOR SEC: KUK-ALM: Each line in the section is divided in to 4 track sections

FOR SEC: KUK-VZM: Each line in the section is divided in to 5 track sections

The position of the track section whether cleared or occupied are reflected in the monitor provided in the station master's office which shows 'Grey' when the track section is clear and 'RED' when occupied.

A Resetting arrangement for resumption of the system in case of failure of axle counter has been provided in the SM room after being assured by both SM that the last vehicle has arrived complete at the receiving station by exchanging Private Number, then resetting to be complied with.

7.2 Manual Reset of MSDAC:

Line verification Boxes for each line are provided at ALM, KUK and VZM. Upon receiving the train, KUK station master shall ensure complete arrival of the train physically and acknowledge the same to respective SMs of ALM & VZM through LV box. Similarly KUK SM will get acknowledgement from ALM & VZM for dispatched trains from KUK. After receiving LV indication SM KUK shall reset the corresponding failed track section through reset panel provided at SM room. Reset panel consists of SM key and respective track section reset button. SM shall press SM key and reset button simultaneously to reset the corresponding track section.

After complete arrival of train, if the LVCD of the section does not clear and section clear indication (Green) does not appear in the Reset Box, the receiving station SM shall apprise the sending station SM through telephone for resetting the Axle Counter giving the details of last train that has arrived complete at his station and the section is clear.

The receiving station shall inform the sending station as to whether the last train that entered into the section has arrived or not. And, if arrived fully shall so intimate the SM of sending station authenticated by exchanging Private number:

Then the SM on duty shall adopt the following resetting procedure at both the sending and receiving stations individually.

a) On being advised by SM of KUK station, SM of ALM/VZM should perform the following step by step procedure from (b) to (i) for resetting the Digital Axle Counter.

b) SM of KUK Station and ALM/VZM Station shall then Insert SM's reset key, and turn right.

c) Press simultaneously both the Push button and the Reset Key which are provided on the Reset Box for at least 3 to 5 seconds continuously at KUK and ALM/VZM station.

d) Release SM's Reset Key and Push button.

e) Turn the SM's Reset Key to left and removes it.

f) The system goes to preparatory reset state and preparatory reset miniature Indication (Green) glows on the Reset box. The counter reading incremented after a gap of 5 seconds approximately.

g) The counter reading should be recorded in the concerned register by SM on duty.

h) One train is to be piloted out in the section to make the system normal.

i) The SM on duty shall record it in the Train Signal Register indicating there setting operations in detail i.e., train number time, Private Number exchanged with SM of sending station and giving reasons for the resetting operation.

j) If the axle counter works properly, then Section cleared indication 'GREEN' will appear on the Reset box and the concerned Block working will be normalized after arrival of train which is piloted out.

k) If the LVCD section indication does not appear 'GREEN' and continues to show 'RED' indication, the concerned Block instrument shall be suspended and failure intimation is to be given to sectional signal Maintainer/JE/SSE (Signal) for early rectification.

7.3 AUTOMATIC BLOCK SIGNALLING:

Section between KUK-ALM and KUK-VZM has been divided into a series of automatic signaling sections each of which is the portion of the running line between two consecutive stop signals and the entry into each section, which is governed by a stop signal. The entire auto block signaling territory position for each section will be displayed in separate VDU in the SM room to know whether the section is occupied or clear.

SECTION	DIRECTION	STOP SIGNALS		CONTROLLED BY
KUK-ALM	UP LINE	UA-830/31, UA-832/11, UA-833/21.		25XT, U830/31XT, U832/11XT, U833/21XT.
	DN LINE	DA-833/24A,DA-832/18A, DA-831/16A		38XT, D833/24AXT, D832/18AXT, D831/16AXT.
	MIDDLE LINE	DN	MDA-833/26, MDA-832/20, MDA-831/18	27XT, M830/32XT, M832/12XT, 40XT.
		UP	MUA-830/32, MUA-832/12, MUA-833/18.	27XT, M830/32XT, M832/12XT, 40XT.
KUK-VZM	UP LINE	UGA-821/3, UA-822/17, UGA-823/27, UA-826/5		49XT, U821/3XT, U822/17XT, U823/27XT, U826/5XT.
	DN LINE	DA-826/20A, DGA-824/8A, DA-822/28A,DGA-821/18A		26XT, D826/20AXT, D824/8AXT, D822/28AXT, D821/18AXT
	MIDDLE LINE	DN	MDA-826/18, MDGA-824/10, MDA-822/28, MDGA-821/18.	47XT, M821/4XT, M822/20XT, M823/30XT, 28XT
		UP	MUGA-821/4, MUA-822/20, MUGA-823/30, MUA-826/6.	47XT, M821/4XT, M822/20XT, M823/30XT, 28XT

7.4 DIRECTION SETTING PANEL FOR SINGLE LINE:

Direction of traffic for middle line towards ALM end and middle line towards VZM end is to be established by a pair of direction setting panels available at station masters room. For establishing direction of traffic ALM-KUK block section, KUK will be the 'controlling station' side and ALM will be the 'controlled station'. For establishing direction of traffic KUK-VZM block section, VZM will be the 'controlling station' side and KUK will be the 'controlled station'.

INDICATIONS:

a. Two groups of arrows are provided on the panel for each single line. One on either side, the other on each side pertaining to the block section on that side. Each group consists of two arrows-one for UP direction and other for DOWN direction. Each arrow will be

illuminated by white or red lights. White light appears when relevant block section is clear but changes to RED when either of the block section is occupied or there is an axle counter failure. Only the arrow corresponding to the direction of traffic established will be illuminated, the other arrow remaining is extinguished.

b. A white 'Signal Normal' lamp (W) for middle line on each half of the panel which is illuminated indicates that the signals of that side of the station for the middle line/KK line is at 'ON'.

c. A Green 'Permission from ……' Lamp (G) on the controlling half of the panel which when illuminated indicates to 'A' that 'B' has pressed the permission button on his panel and thereby permitting 'A' to establish direction of traffic from 'A' to 'B'. Under emergency operation, this green lamp will also be illuminated when 'B' presses emergency push button on the controlled half of the panel to enable 'A' to establish direction traffic 'A' to 'B'.

d. A digital counter on each half of the panel (C) is provided to record the number of emergency operations resorted to on that side of the panel. The SM who makes over as also who takes over charge shall record in the Train log register the number recorded by the digital counters.

7.5 CONTROLS:

Permission button: This is mounted on the controlled side of the panel, when it is passed at block station 'B' for granting permission to 'A' for establishing direction of traffic from 'A' to 'B' a green lamp indication will be illuminated on the panel at 'A'.

Direction Switch: UP/DN two position , direction switch (s) is provided on the controlling side of the panel for enabling 'A' to establish direction of traffic from 'A' to 'B' as may be required.

Emergency push button (RED): There are two emergency push buttons- one on the controlled half and the other on the controlling half of the panel. If on account of failure of Axle counter or for any other cause other than occupation of the block section between two block stations, it becomes necessary to change the direction of traffic already established when the direction arrow may show 'Red indication' emergency push buttons shall be pressed at both block stations and at controlling station the direction switch shall also be turned in conjunction to the required position. Each operation of emergency push button registers next higher digit on the digital counter of the respective half of the panel. Whenever such operation is resorted to the SM at both stations shall record the same in the register specially maintained for the purpose under his initial.

Station Master Lock UP key:

Whenever it is necessary to operate the panel, this key shall be inserted in the key-hole and turned. Immediately after completion of every operation on the panel, this key must be taken out and kept in the personnel custody of the station master on duty so as to prevent inadvertent or unauthorized operation of various controls in the panel.

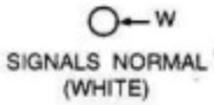
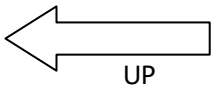
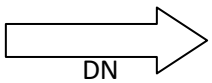
7.6 ESTABLISHING DIRECTION OF TRAFFIC:

For establishing direction of traffic , Rule No. 7.15 of BWM is to be followed.

MODE OF OPERATION:

1. Normal operation: Rule No. 7.16(1) of BWM is to be followed.
2. Emergency operation during track section failure: Rule No. 7.16(2) of BWM is to be followed.
3. Movement of trains: For movement of trains BWM 7.17 is to be followed.
4. Suspension and resumption of working of trains under automatic block system on single line: BWM 7.20 is to be followed.
5. Failure of indication on the panel: BWM 7.23 is to be followed.

DIRECTION SETTING PANEL AT KUK TOWARDS VZM STATION

MIDDLE LINE			
S-4/S39 	PERMISSION TO VZM FOR MIDDLE LINE (GREEN)	KUK-VZM MIDDLE LINE (TOWARDS ALM) 	KPL-ALM MIDDLE LINE (TOWARDS VZM) 
			EMERGENCY COUNTER

7.7 STATION MASTER'S PANEL CONTROL KEY:

The panel is fitted with Station master Lock up key to prevent any unauthorized operation of the panel. The station master on duty is the only authorized person to operate the panel and the panel key must always remain in his custody vide SR 3.36.02 and GR 5.08. The key locks the panel board and no operations are possible. In case of emergency, signals can be put back to danger by operating concerned signal button and signal cancellation button without ASM's key also. However, the provisions of SR 3.36.02 shall be followed while replacing also.

8. TAKING OFF CALLING-ON SIGNAL:

Miniature colour light Calling-on signal is provided below the UP & DN Home signals and below UP & DN starters in terms of GR.3.13 (6)(b). A Calling-on signal shows no light in the 'ON' position. A Calling-on signal is taken 'OFF' for reception of a train when the Home signal above it cannot be taken 'OFF', for admission of train on blocked line or due to failure of main signal due to any other reason.

8.1 To take off Calling-on signal the train must come to stop at the foot of the home signal, occupying the track circuit (1AT, 2AT, 3AT, 4AT, berthing track circuit for starter as the case may be) in rear of the Home signal and Starter signal. When a train occupies the track circuit, a RED light strip will appear on the VDU. The particular route on which the train is intended to be received shall be set by selecting and setting desired route through VDU by SS/SM on duty. After a lapse 60 seconds for homes and for immediately starter signal Calling-on signal takes-off. A white light glows at the concerned Calling-on signal on the VDU.

8.2 RELEASE/CANCELLATION OF ROUTE:

Normally when a train is received on any route or dispatched, the route illumination will disappear automatically after passage of the train suggesting that the route is released. When the route is not released automatically after passage of train over it or when SM on duty intends to cancel the route set by him shall follow procedure for cancellation of route described in para 4.1 of APPENDIX-B above.

NOTE: UP and DN Calling-on signals are to be manually cancelled after the passage of the train to release the route.

8.3 REPLACEMENT OF SIGNALS TO 'ON':

Signals are replaced to 'ON' automatically by the passage of a train beyond the signal. It will not be possible to re-clear the signal again unless the due process for clearing the signal is repeated again. For replacement of any signal to 'ON' position manually, the SS/SM shall follow para no. 3.4 of APPENDIX-B.

8.4 INTERLOCKING OF SIGNALS:

All running line points are fitted with point machines which have in built locking and are electrically detected by the relevant home signals and starters.

Signals once taken OFF can be put back to ON incase of emergency by pressing the concerned signal cancellation on VDU even when the panel is locked up with station master's key.

8.5 PILOTING OF TRAINS IN TO STATION YARD:

Whenever Home signal becomes defective, trains can be admitted by taking off Calling on signal When ever both Home signal and Calling on signal failed, all trains will be piloted in vide SR. [Refer SR 3.69.03(a) & (c)].

The SS/SM on duty shall nominate a clear line and shall advise the TPM on duty at station to set the nominated route with the help of crank handle if the points cannot be set from the VDU. Then the TPM shall set the facing and trailing points and clamp and padlock the same under the supervision of SS/SM on duty.

The SS/SM on duty shall then hand over the written authority (T/369(3b) to the TPM for piloting the train. While going towards Home signal the TPM shall check points and satisfy himself that the route is correctly set.

After the train has brought to a dead stop at the Home signal the TPM shall hand over the pilot memo to the Loco pilot, board the engine and display proceed hand signal to pass the Home signal.

NOTE:

1. The Station Master on duty shall personally supervise the correct setting, clamping and padlocking of the facing points, if any and ensure clearance on the nominated route vide SR [Ref. SR 3.69.03(c)]
2. The keys of padlock of the clamps put ON to the points on the route for piloting In or piloting OUT shall be in the personally custody of the SS/SM on duty or any other authorized operating officials till such time the train / engine / vehicle has utilized the route or alternatively such movement is cancelled.

8.6 PILOTING OF TRAINS - OUT OF STATION YARD:

When the starter signal has become defective, the Station Master on duty shall advise them on duty TPM to set all points correctly for the outgoing trains. Then he shall clamp and padlock the same under the supervision of SS/SM on duty. Then the SS/SM on duty shall hand over the pilot memo T/369(3b) (along with the other authority if necessary) to the on duty TPM. The TPM on duty shall hand over the authority to the Loco pilot of the train and display proceed hand signal at the foot of the starter vide SR. [Refer SR 3.70.01].

In case the advanced starter signal has become defective, such signal shall be passed on the written authority on the form T/369(3b) for double line section. In case of single line Auto signaling section in terms of 3.70.01 except that in lieu of T/369(3b), written authority in the prescribed form T/A912 and T/C 1425 shall be issued. The TPM shall hand over the pilot memo to the Loco pilot after the train stopped. [Refer SR 3.70.02]

8.7 SHUNTING:

Shunt back signals SH-6A/B/C/D, SH-8A/B and dependent shunt signals SH-19A/B, SH-17A/B, SH-15, SH-13 are provided towards VSKP end. Shunt back signals SH-5A/B, SH-7A/B and dependent Shunt signal SH-14, SH16A/B, SH18 are provided towards HWH end for shunting purpose.. In case of failure of shunt signal or no provision of shunt signal, shunting authority in the prescribed form T/806 to be issued to the LP. For taking OFF Shunt signals please refer Para no. 3.4.2 of APPENDIX-B and refer BWM 7.07, 7.08 for double line and 7.18 & 7.19 single line for shunting in auto section.

9 VERIFICATION OF LINE CLEARANCE BY STATION MASTER ON DUTY FOR RE CEPTION OF TRAIN INTO STATION YARD:

In the Station yard, a route on the running line comprises of entrance, berthing and dispatch portion of the yard shall be kept clear of any obstruction for the passages of any train or for any other movements The clearance of the route including overlap must be ensured by the SS/SM on duty

personally through VDU indications and/or physical verification of track before any movement of trains are permitted on the concerned route subject to the other conditions such as locking of the point's etc.

10 CRANK HANDLING/EMERGENCY OPERATION OF POINTS:

Crank handle operation is interlocked with the Signaling and interlocking sys- tem at this station. Key for Crank handles are normally locked inside the RKT instrument inside Location boxes in the yard and can be taken out only when all the signals leading are in the 'normal' position and the route is not locked for whatever reasons. Crank handle can be transmitted or released by following procedure as laid down in Para no.3.5 of Appendix-'B'. When this key is taken out, no signal to the concerned point can be taken 'OFF' in the yard. This key can be electrically transmitted at both ends of the yard.

11 OBSERVATION OF TRACK CIRCUIT AFTER STABLING OF TRAINS ON RUNNING LINES:

When a train is stabled on a running line for a duration exceeding ten hours, the use of the said running line for passing the trains 'IN' THROUGH' or 'OUT' at the station shall be done with a lot of care and diligence. Station Master on duty shall meticulously observe the proper functioning of the relevant track circuits (occupancy/clearance) while admitting train. Such observance should continue for a mini mum of four to five trains thereafter. If the Station Master on duty is not satisfied with the proper functioning of the track circuits on which the train was earlier stabled, the signals leading on the line shall be suspended and the S&T maintainer/SSE(Signal) to be informed for rectification of the failure.

12 LOCKING OF RELAY ROOM:

As per JPO/02/2012, the following procedure shall be adopted for opening of The Relay room:-

The Relay room of station shall have double locking system of operating and S&T locks. One lock shall be provided on the door of Relay room by the Station Master. This lock is named as operating lock. The key shall be kept in the safe custody in the Key-box with the SM on duty. Likewise, one lock shall be provided on the door of Relay room by the Signal Maintainer/Signal supervisor of the section.

Names of the S&T staff authorized for opening of Relay room is to be entered in the first page of Relay room Key register and jointly certified by SSE/Signal in charge and TI in-charge of the section. In emergency, if any S&T staff other than authorized wants to open Relay room, he must inform DSTE through Signal Fault Control. Signal Fault Control shall convey the permission of DSTE to SS/SM by giving Signal Fault Control order number.

Whenever relay room is to be opened either for schedule maintenance or during failures or for other maintenance activities/construction works. The concerned Maintainer/Signal Supervisor will inform SM on duty for opening of Relay Room with reason.SM on duty will verify his identity from the list of authorized S&T staff recorded in the first page of Relay Room Key register or as advised Signal Fault Control by emergency.SM shall give the key of pertaining lock to S&T staff, after the entry is and made in Relay Room and also with Red ink in TSR. Relay Room Key shall not be handed over by SM on duty to any Group 'D' staff of S&T department. On completion of work, the concerned Signal Maintainer/Signal Supervisor shall properly closed Re lay Room door and lock it with both the locks and then return the key of operating lock to the SM on duty making the entry in the Relay room Key register.

When the Key of Operating Lock is returned by S&T staff to SM on duty, he shall verify the Relay Room for proper locking and then keep the key in safe custody and acknowledge it on the Relay Room key register. If the relay room key is handed over to the Signal staff regarding the interference in safety gears the train shall be piloted in and out.

For attending Failures of S&T gears within relay room, the following steps shall be taken:

Entry to be made in S&T failure register by SM on duty and failure Memo has to be issued to S&T staff. S&T staff shall not take the Relay room key for attending failures and open the Relay room unless the failure is recorded in Signal failure register. If disconnection is required, Disconnection

Memo has to be given by S&T staff to SM on duty. Failure memo should be acknowledged and entry in relay room key register to be made by S&T staff before obtaining Station Master's key. Relay Room key for schedule maintenance shall be taken once in a calendar Month during monthly inspection by Sectional Supervisor. Relay room can be opened by following above procedure for special maintenance activities like cable insulation testing, Block/disconnection memos, selection table testing, maintenance work inside relay room by Electrical and Engineering staff, during failures, E.I resetting and inspection by Divisional and Headquarter officials, works required by Construction & Open line staff for preparatory works and during commissioning. In each such case, the construction staff shall follow the detailed guidelines issued regarding working on signal ing gears under the charge of open line.

In case of emergencies such as fire, flood, earth quake etc. Open line Section Engineer (Signal)/Signal Maintainer & SS/SM shall jointly decide the need for opening the Relay room. Section Engineer (signal)/HQ at Divisional Control office and Section controller shall be advised respectively. In case of communication failure during such emergencies, Open line Signal Maintainer/Supervisors and SS/SM on du ty shall jointly decide the need for opening the Relay room and communicate later to respective controls. In case Key is lost/misplaced, it shall be reported to S&T control as well as section control for either lock. In normal course the spare key with respective custodians shall be used. In emergency situation, lock may be broken under ad vice to Section Control as well as S&T control. New lock shall be procured and pro video.

In case SS/SM on duty comes to know that Relay room opening by unauthorized means or by unauthorized person or by any group-'D' staff, the signaling system shall be suspended by him and matter immediately reported to Section controller for - necessary action. Senior Section engineer (signal) & TI of the respective section will check the station records of Relay room opening during their inspections and cross check it with data logger if provided. Discrepancy, if any shall be immediately inquired into and advised to Sr. DSTE & Sr. DOM by numbered control message from the station immediately for further action.

13. MAINTENANCE OF S & T INSTALLATION AND ADHERENCE TO MAINTENANCE SCHEDULES:

Regular maintenance of the S&T installations, adherence to schedules of maintenance testing of points, track circuits, level crossing gates, associated inter locking apparatus cables and the interlocking functional tests is must for safe and satisfactory working of these installations at this station.

The tests, checks and replacements etc., shall confirm to the schedules of maintenance as indicated in the Signal Engineering Manual as also as per the current and extant instructions/circulars on the subject.

14 PROCEDURE TO BE FOLLOWED INCASE OF FAILURE OF AN INTERLOCKING GEAR:

In case of failure of any interlocking gear at the station, the failure report should be communicated by the Station Master to sectional Maintainer, the SSE(Signal) of the section and others through a memo as per GR and SR 3.51.04 and 3.68.04 and document all such transactions.

15 INSPECTIONS OF POINTS BEFORE DECLARING THEM DEFECTIVE:

Before declaring a point as defective, the setting of the point on the route to which it applies shall be inspected by the Station Master on duty irrespective of the position of the buttons.

16 RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING:

After receipt of the failure information, the sectional Maintainer shall attend to the failure after giving a 'Disconnection Memo'. After rectification of the fault, the Sectional Maintainer shall give Reconnection Memo' detailing the rectification Thereafter the Station Master on duty shall personally check this defective apparatus. After satisfying himself that the gear is in good and

proper working order, he shall resume the normal working of the said defective apparatus in terms of SR.3.68.04 (C) and (D).

17 PROCEDURE FOR CARRYING OUT PLANNED MAINTENANCE WORK:

Whenever any normal maintenance or special works for major renewals etc., are involved, the Signal and Telecom department should preplan these works. Field staff and the Inspector of the section should give to the Station master in writing "Advance Intimation about this work in terms of G and SR.15.08.01.

18 EMERGENCIES:

Notwithstanding, anything contained in the aforesaid Para as when equipment is found defective and unsafe for passage of trains, the Signal and Telecom staff must at once suspend the working of the equipment and associated installations and issue 'Suspension Memo' explaining the seriousness of the defect or damage to the interlocking installation to the Station master and take the Station Master's acknowledgement. After this, the usual practice of exchange of disconnection memo and re connection memo can follow. The Station Master must act promptly on such messages and take adequate precaution treating the S&T installation as defective and pass trains over the affected interlocking equipment's according to extant instructions as contained in GR and SR. 3.77

19 PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF SIGNAL POINTS AND USE OF EMERGENCY CRANK HANDLE:

19.1 Whenever a Signal or a Point becomes defective any movements over the Points on the running lines should be made after clamping and padlocking both the facing and trailing Points by Station Master on duty personally for all trains at the Station.

19.2 In case of failure of Signal or a Point and in case the Point can not be operated from the Panel, the emergency Crank Handle which is Interlocked with the system has to be extracted for operation of points.

19.3 When the Crank Handle is removed from RKT for operation of the defective Motor Operated Points, the responsibility for its safe custody re-sets with the SM/SS on duty till it is replaced back in RKT and sealed by Signal Maintainer.

19.4 The case of failure of Motor Operated Points should be promptly reported to the concerned SSE(Signal)/ESM for immediate rectification.

19.5 Whenever a Crank Handle is required to be used by a Signal Official for maintenance of work attending to failure, the Signal Official will give a disconnection memo to the Station Master on duty and after making necessary entries in the emergency Crank Handle register, the Station Master on duty will obtain acknowledgement of the Signal Official in the emergency Crank Handle Register and then handover to him the emergency Crank Handle for the Points concerned. All the Points will be treated as defective till the Emergency Crank Handle is returned back to Station Master on duty.

19.6 Before parting with the Crank Handle either for attending failure or for Maintenance work by Signal Maintenance Officials, the Station Master on duty will ensure that the reception and departure Signals are put back to on position. The Points of all the lines should be treated as Non-interlocked and the Station Master on duty is responsible for introduction of Non-interlocked working and the trains will piloted IN and OUT duly clamping and Padlocking the Points, both in facing and trailing directions over which the train is to pass, as per GR 3.69 and 3.70 with relevant SR's. The Station Master on duty will be personally responsible for setting and locking of Points, for reception and dispatch of all trains.

19.7 The Crank Handle Register is to be maintained in the following Performa by the Station Master on duty wherein the particulars of usage of the Crank Handle must be recorded:

1. Date:
2. Point Number which failed or required to be tested:
3. Time failure:
4. Disconnection memo number received from S&T Staff:

5. Signature of SM/Signal Official to whom the Crank Handle is handed over:
6. Time Emergency Crank Handle is sent out:
7. Individual Point numbers and Line number nominated for admission of dispatch for which Points are set, Clamped and Padlocked:
8. Train number to be admitted or dispatched:
9. Signature of the Station Master on duty to ensure correct setting, Clamping and Padlocking of the Points:
10. Date and Time fault rectified.
11. Time of Crank Handle received back by SM on duty:
12. Signature and Designation of the Signal Official who rectified the fault.

20 TELECOMMUNICATIONS:

Refer Para No.5 of the Main body of this SWR.

21 POWER SUPPLY ARRANGEMENT FOR SIGNALLING INSTALLATIONS:

(i) An auto changeover CLS panel is provided in the Station Master's Office with the three power supplies viz., Up AT, DN AT and Local, for changing the switch to the required supply position. A luminous indicator above the circuit breaker for each supply indicates the availability of the supply.

(ii) Normally the switch will be kept towards Up AT or DN AT position. Whenever power block is to be given on the line, the on duty SM must ascertain that power is available on the other AT.
Eg:If power block is to be given on the Up line, Down AT must be available and vice-versa.

(iii) In case of failure of one of the AT supply without any power block, the on duty SM. has to check whether the circuit breaker has tripped. (Three circuit breakers are provided in the changeover switch board, one for each supply and their normal position is down and when tripped it goes up.) In case of failure of both AT supplies, the Local supply shall be utilized by operating the switch. If the circuit breaker is tripping even after resetting, no attempt shall be made to hold it by any other mean and a message shall be given to the AEE and SSE/PSI for prompt rectification.

(iv) For IPS system that provides power supply to the signaling installation 230V AC is taken from the selection output of the Auto change Over Panel in SM Office. There is a remote monitoring ASM box provided at the station to monitor the health of IPS.

REMOTE MONITORING ASM BOX:

Remote monitoring ASM Box gives alarm to the SM for the following fault conditions:

a) 50% depth of discharge (DOD) of battery. In this condition audio/visual alarm comes, which can be acknowledged with audio cut-off.
b) 60% DOD, which warns for emergency. The alarm for this condition is same as for condition 1.
c) 70% DOD, which signals system, shut-down. In this condition signal feed is cut-off and all DC-DC converters continue working. Audio alarm continues till power supply is restored.
d) Any of the module fails, which calls for 'call S&T'. Whenever there is a failure of power supply in one AT the SM shall take prompt action to inform to all concerned for the rectification. The SM himself, during his daily checks, shall test the availability of power supply on both AT's and make an entry in the Station Diary duly initiating action for rectification of failure, if any.

22 WORKING OF INTEGRATED POWER SUPPLY TIPS, INDICATIONS & ACTION TO BE TAKEN BY SS/SM ON DUTY:

Power supply to the signalling installation is fed through Integrated Power Supply System (IPS) installed in the S&T power supply room. The IPS is normally fed through Up AT/Down AT traction power selected SS/SM on duty. Standby power supply is through AP TRANSCO local supply. One change over switch is provided in the SM's room for selection of output of either traction power supply or local power supply. The available traction/local supply is fed to the IPS through auto-change over switch provided in IPS.

The IPS system is connected with battery as a backup power source for safe working during transition of power and in case no 230 AC supply is available due to any reason.
In the event of failures all the sources of 230V 50HZ AC supply, the signalling system shall be fed by power generated by backup battery bank connected to IPS for a limited power of 8 to 10 hours. The health of the battery bank is monitored through one IPS Monitoring Panel provided in the SM's room which shall display the voltage of 110 V.DV battery bank provided as backup source of power supply. Depending up on the health of the battery bank and the system the following indications/alarm will appear on the remote monitoring panel. The indications/alarm, their implications and action to be taken by SS/SM on duty is tabulated below:

SN	Instruction	Health of Battery Bank/ Equipment	Visual Indication	Audio Indication	Action to be taken by SS/SM on duty
A	-	50% DOD	Red	Alarm	Alarm shall be acknowledged by SM on duty.
B	-	60% DOD	Red	Alarm	-do-
C	System shut down	70% DOD	Red	Alarm	Signal feed cut off and all DC-DC converters to Work. Audio alarm will continue till power Supply is restored.
D	Call S&T staff.	Equipment fault.	Red,	Alarm	Failure of any module will give the alarm in ASM's panel. Alarm shall be acknowledged by SM on duty for audio cut off.

NOTE: i) DOD indicate depth of discharge of battery bank of IPS.
ii) In case of failure of all AC supply sources IPS battery bank can provide power supply maximum up to 8 to 10 hours before system shut down indication of APS.

23. <u>WORKING OF AUTOMATIC FIRE DETECTION AND ALARM SYSTEM.</u>

- In case of any alarm-Zone number on the LCD display can be seen.
- Note down the zone No. and panel display name, by referring display chart.
- Then open the key pad and press the "OFF" button and enter the code 1111 (1 digit four times).
- Automatically it will get reset.
- Once you find the zone number rush to that particular area where the detector gives alarm.
- The movement the detection detects any smoke particles, the RED LED will blink along with the alarm.
- Once you reach the area where the detector is giving the alarm, check whether the alarm is due to the fire or for any other reason.
- To alert the people in case of emergency press "*" sign which is present inside the key pad together for few seconds. This will enable you to hear the panel alarm.
- To reset the panel press "OFF" button and enter the code 1111 (1 digit four times).
- If the power fails on this will enable us to see the red indicator on the panel.
- In case of failure in power and if the battery is fully charged, the panel can function effectively as long as the charge in the battery is present.

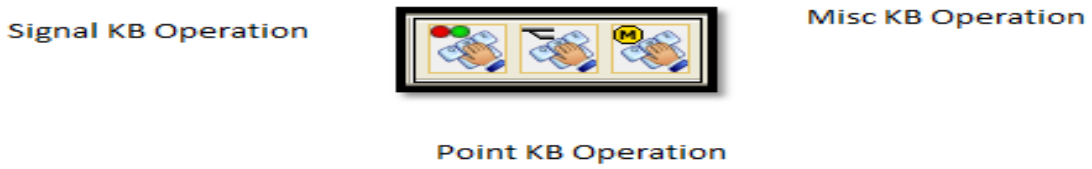
AUTO DIALLING: If you hear alarm from the panel, this system will dial the Railway Auto telephones as assigned to the all concerned.

24. Keyboard Board Operations:

Essentially, "Keyboard Backup operation" is an alternative to the mouse operation. In the event of mouse absence or failure of mouse, the user is still able to operate the VDU application using the Keyboard shortcut keys.

The "Keyboard backup" group has three buttons on the toolbar:-

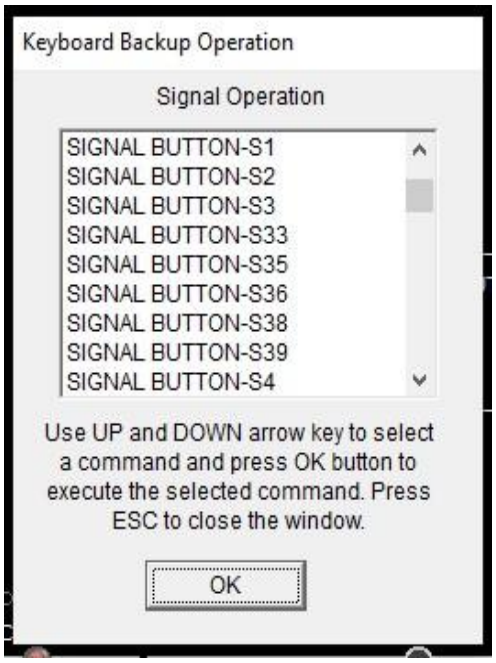
- Signal KB (Keyboard) operation
- Point KB operation
- Misc KB operation



KEYBOARD BACKUP TOOLBAR

24.1 Signal KB Operation:

Alternatively signal commands can be accessed using the shortcut "Ctrl+S" from the keyboard. When the shortcut is pressed, a dialog box with all signal menus will appear as shown in Figure at the bottom left corner of the window. Using the arrow keys select the desired item and press "Enter" key on the keyboard. A popup menu with all possible control menu items will appear near to the control and the dialog box will be closed. Again using arrow keys select the desired command to be issued and press "Enter" key on the keyboard. After the command is selected, it will be sent to EI system and the popup menu will be disappeared. This procedure is same for main signals as well.



SIGNAL KB DIALOG BOX

24.2 Point KB Operation

Alternatively, the point commands can be accessed using the shortcut "Ctrl+P". When the shortcut is pressed in the keyboard, a dialog box with a list of point commands will appear at the bottom left corner of the window as shown in Figure.

Using Up (↑) and Down(↓) arrow keys of the keyboard, select the desired point command and press "Enter" key on the keyboard. A popup window with all possible menu items will appear near to the control and the dialog box will be disappeared. User by using "Up" and "Down" arrow keys select the desired command and press "Enter" key on the keyboard. After the command is selected, it will be sent to EI system and the popup menu will be disappeared.

POINT KB DIALOG BOX

24.3 **MISC KB OPERATION:**

Alternatively, the miscellaneous menus can be accessed by using the shortcut "Ctrl+M". When the shortcut is pressed on the keyboard, a dialog box with a list of miscellaneous commands will appear at the bottom left corner of the window as shown in Figure.

MISC KB DIALOG BOX

Using Up (↑) and Down(↓) arrow keys of the keyboard, select the desired miscellaneous command and press "Enter" key on the keyboard. A popup window with all possible menu items will appear near to the control and the dialog box will be disappeared. User by using "Up" and "Down" arrow keys select the desired command and press "Enter" key on the keyboard. After the command is selected, the command will be sent to EI system and the popup menu be disappeared.

25. WORKING PROCEDURE FOR CHANGING SEMIAUTOMATIC SIGNAL FROM MANUAL TO AUTO MODE AND VISE VERSA:-

For setting manual to automatic mode, SM on duty needs to track the mouse pointer to the concerned semi automatic signal on the VDU, after clicking the left button of the mouse a pop-up menu will appear as below.

SM on duty will first select the concerned route for taking off the signal by moving the mouse pointer on the appropriate menu & left clicking on the menu. It will set the route and clear the signal provided all the conditions required to clear the signal is satisfied. Then to change to auto mode SM on duty needs to select by moving the mouse pointer to auto signal of concerned signal and left clicking on the menu auto signal will clear and A marker will lit on the VDU. To cancel the auto signal the SM on duty has to move the mouse pointer to auto signal cancel menu and left click on the menu auto signal will cancel and A marker will disappear and then SM on duty needs to click on signal cancel menu, signal will immediately go to 'ON' aspect, after doing so click on the route release menu the route locked indication starts flashing for 120 seconds. After completion of 120 seconds the locked route will be released.

APPENDIX 'C'

ANTI COLLISION DEVICE (RAKSHA KAVACH)

NIL

APPENDIX-'D'
DUTIES OF TRAIN PASSING STAFF AND STAFF IN EACH SHIFT

The following staff are concerned with the movement of the trains whose duties are given below:

COMPLEMENT OF STAFF	STAFF IN EACH SHIFT
SS/SM	01
TRAFFIC POINTS MAN	01
TRAFFIC GATE KEEPER	01

1. STATION SUPRITENDENT/STATION MASTER (IN CHARGE):

i) He is responsible for trains passing during his shift.

ii) Station in-charge is responsible for the efficient discharge of duties by different members of staff at his station.

iii) He shall ensure that the general working of the station is being carried out in strict accordance with the current rules, procedures and instructions.

iv) He is responsible for trains passing during his shift.

v) He shall maintain complete and up to date record of Engg./S&T/TRD restrictions. He shall be responsible for bringing forward the caution order register every Monday.

vi) He shall be responsible for maintaining Accident Register and Accident Charts and keeping these up to date.

vii) He shall maintain figures in respect of the stock and get them relayed to the control in time.

viii) He is responsible for the general and satisfactory working of the station and for the efficient discharge of duties by staff working under him.

ix) He shall keep all Rule books, Registers, Files and documents neat and up to date.

x) He shall ensure that all equipment, apparatus, and instruments including signaling and interlocking gears and fittings are kept clean and oiled by S&T officials.

xi) He shall follow the instructions laid down in SR.3.68.01 (c) and (d) and SR 14.07.01 and B.W.M.2.09 (e).

xii) He shall promptly attend to accidents and report them.

xiii) He shall ensure that fire fighting equipments at the station such as fire extinguisher, fire buckets etc. are in good fettle and ready for use.

xiv) He must ensure that the essential safety equipments at his station are the same complete and in good condition. If there is any deficiency it should be made good without delay.

xv) He shall see that TSR, SM's Diary, Inspection Note Book, Reference Books and other station record is properly maintained and preserved for a minimum period as prescribed in this Operating Manual.

xvi) He shall ensure that all correction slips of Manuals and SWR are posted and changes are made in respective pages.

xvii) He shall supervise the work of safe working staff and conduct night inspections and report lapses of staff working under him.

xviii) His special attention is drawn to Chapter-II of G&SR and GR 5.01 to 5.08 with relevant SRs and O.M. Chapter-2.

2. STATION SUPRITENDENT/STATION MASTER:

(i) He is responsible for trains passing during his shift.

(ii) He shall promptly bring to the notice of SS/SM in-charge all irregularities and accidents in course of his shift duties.
(iii) During the absence of SM I/C, the duties of the Station Master will devolve on him.
(iv) His special attention is drawn to Chapter-2 of G&SR 1976 and GR 5.01 to 5.08 with relevant SRs.
(v) He shall not consider himself relieved of duty unless he has completed transactions of trains for which he has given/obtained line clear till the complete arrival of such trains.
(vi) He shall always obey the lawful orders of his superiors so long as they do not contravene any of the extant rules in force.
(vii) He shall keep the Station Master's control keys of block instruments/Control Panel in his personal custody whenever, he is required to leave his office even for a short duration.
(viii) He shall be responsible for correct issuance of caution order, whenever required.
(ix) As an assistant to SS I/C, he shall carry out the lawful instructions given from time to time.
(x) He shall keep the Station Master's control keys of block instruments/Control Panel in his personal custody whenever, he is required to leave his office even for a short duration.
(xi) He shall handle the control panel himself when on duty and shall not permit any un-authorized person to manipulate the panel.
(xii) He shall ensure that proper indications of points, signals, track circuits, crank handle, level crossing gate etc., are displayed at their proper places.
(xiii) He shall issue shunting order for shunting operations as per extant rules and keep a watch on the working of shunting staff.
(xiv) In case of abnormal working he shall be responsible for correct setting, pad locking of points and piloting of trains.
(xv) He shall follow SR 3.68.01(c) and (d) SR 14.07.l and OM Chapter-2.

3. <u>TRAFFIC POINTS MAN :</u>

i. He shall work under the orders SM on duty.
ii. He shall be in proper neat and clean uniform while on duty.
iii. He shall always commence his duty equipped with hand signal lamps during night and flags during day.
iv. He shall obey all lawful orders of the SS/SM on duty or official in-charge supervising the shunting during the course of shunting operations including coupling or uncoupling of vehicles, wagons, fixing rubber washers, closing wagon doors, displaying hand signals etc.
v. He shall watch and guard the packages and other Railway property lying in the Station premises.
vi. Neither shall he absent himself from duty not shall he exchange his duty without prior permission of his superiors.
vii. In case of track failure he shall assist the SM to ascertain the clearance of line.
viii. He shall report any irregularities coming to his notice.
ix. He shall do loading and unloading of parcels, smalls and Guard's boxes. He shall do piloting IN and OUT.
x. He shall deliver any official message to the proper person/office. He shall carry out any other duties entrusted to him by the SM on duty.
xi. He shall not leave his duty unless properly relieved or authorized by his superiors.
xii. He shall verify the correct setting of route before delivering required papers to

the Loco Pilot either through taking 'OFF' the relevant shunt signal or by personal observation.

xiii. He shall exhibit danger signal to the official supervising the shunting if vehicles are fouled during the shunting operation.

xiv. He shall be response to see that fouling marks are kept clear after completion of shunting.

xv. He shall follow OM Chapter-2.

4. TRAFFIC GATE KEEPER:

i. He is responsible to operate L.C. Gate at his end.

ii. He shall attend to the call of SM on duty and do the work entrusted by the SM on duty connected to gate operation.

iii. He shall promptly report any abnormality to SM on duty.

iv. He shall also protect the gate when required as given in gate working rules.

v. He shall do all necessary functions related to gate working as stated in gate working rules.

vi. He shall follow OM Chapter-2(g).

NB: - All staff should be in uniform while on duty and follow their rosters issued by Sr. DPO/WAT from time to time.

APPENDIX 'E'

LIST OF ESSENTIAL EQUIPMENTS PROVIDED AT THE STATION

Essential equipment's shall be maintained in good Working order.

Sl. No	Description	Quantity
i)	Detonators	20
ii)	LED based Tri Color flashing torch.	3(1 Spare)
iii)	Hand Signal Flags	3(1 Spare)
iv)	Safety chains with Pad locks	6
v)	Clamps with Padlocks	8
vi)	Skids	6
vii)	Wedges	4
viii)	Fire & Sand buckets	6
ix)	Fire Extinguishers	2
x)	First Aid box	1
xi)	Blanket	1
xii)	Stretcher	1

APPENDIX 'F'

RULES OF WORKING OF DK STATION, HALTS, IBH, IBS AND OUTLYING SIDINGS.

NIL