

GSR 625 (E) THE RAILWAYS (OPENING FOR PUBLIC CARRIAGE OF PASSENGERS) RULES, 2000

gæ33004/99 • REGD. NO. D. L.-33004/99 Che Gazette of •tidia EXTRAORDINARY PART 3—Sub-section (i) PUBLISHED BY AUTHORITY 401] No. 4011 21, 30, 1922 NEW DELHI, THURSDAY, JULY 21, 2006/ASADHA 30, 1922 21 FN, 2000 () 2000 N. 625(37 1989 (1989 24) 28, 29 198 1.) (Alfiq3i fig) 2000 I (2) (3) 1989 (1989 24) 2009 GV2000 - (1) 2 THE GAETIE OF NDIA : EXTRAORDINARY [PART 11—SEC. 3(i)] (V) (i) 4 Q*rzr, t 28 (ii) (v) (Z) (3) (1) (2) (3) (4) (5) (6) 1991 fiqq, 1976 t; 18 3iTf7 t; TIRqi, *INIZ, Aft*, i, (RÉT) (zhér) I 3(i)] 3 (y) fizg, 1976 I .narq-ll 3. fiqq, 1976 t I fiqq, 1976 t I *TTT, (Index Plan) fi•qfur (infringements .) \$r (v) (M) 4 THE GAZETTE OF INDIA : EXTRAORDINARY (2) I ?fiz 1 [PART II—SEC. 3(i)] (1) (2) (qi) (73) (3) (4) (q) 3 (z) (a) (z) MTt?T—w*qz; 11 111 IV fifiRz) ; VI VII VIII XIII@' XIV I (Index 443 451 (gradient), z#rz (masts) [3(i)] (i) (ii) (iii) (iv) (v) (vi) (vii) (viii) fiq*i marq-m t, 37TF t 7. 8. (#1171) (2) fitra•or tr, 5 6 GAETIE OF NDIA : EXTRAORDINARY [PART IPSEC. 10. (2) 28 fiqfq q, I (4) 11. (2) fi) 1976 (u) (q) fiqfur t 12. (u) 13. 16 fi•qfur t, I 14. (u) 15.) 5 4 *Qi frqqlk 16. frqq, 1964 (2) 3(i)] 7 Rirq gra, (3) •1TÄ.qT. fizrq, 1964 t 17. 1) (2) (3) (4) (5) (6) (7) (8) (9) (10) () •rrä fi@z t MV i t, Miq (Load Deflection Test) t I (Card Deflection) (oscillation) (7Y) (abutments) XVIII (deflection) (oscillation) (deflection card) xv111 12 Miq 30 (q) qi-q, (chord) (flanges) (web) (floor members) 8 THE GAETIE'OF n•DIA : EXTRAORDINARY [PART II—SEC. •nÄ.q.r. 1962 -Q (11) (12) (13) (i) (ii) 1962 : (ifr&T TN) 7T&i I (14) (15) (16) (card deflection) qi•q I (17) æi•t7T, 1972 (18) 1972 18. •-1'R fiNffIRT t; -aft I 11—GTS 3(i)] 19. : (i) (index plan) (ii) 1 @ (iii) (iv) (vi) 20. 3 (3) 30.qrq-V1 21. fit?ré (4) (5) z•qät.ii 22. 2009 GI/2000—2 9 10 GAZETIE OF NDIA EXTRAORDINARY [PART 11—SEC. 23. 1976 (2) 1976 t, 24.) i, «*i, é•üi, t t, fiq•f-q (4) qpf-Q*i 24 Qq*i 25. 22 (1) (TIE) (2) 371W, *Til, 26. 27. (3) 28. @QTTT, II—qxrg 3(i)] 2. 1. 11 (fr.qft.) 3. 4. I-a- qutr : (1) (iii) ((iv) (4) 1964 THE GAZETTE OF INDIA : EXTRAORDINARY (PART {I—SEC. 3(i)] (s) (.) (oscillation) f-äq I (A) 100 75 (6) (ft-Err) 76, 294 (a-g\$#T) 30. (i) (ii) 2. 3. •i, æ: iäfr-« (iii) I (ft) 33037ToqToëo 13 (vi) m:qrq-VIII 31. -a a-TT (stop) (4) (back light) fG1* (aspect) I (6) (mechanism) 1976 '3â?2Tq-tli 32. -cd -a-ra 3.377 € , I (4) (facing point) (movable) ZT+iZ (movable diamond crossing) I (5) qiTT, Hlq-l 338AN-VII I 33.) *FT-I 37t-qrq-V11 Mfqzr?r 9-1PT-I 3-T±ATZI-VII (3) fitQi *ai, am-I 3+-AA-VII I (5) t, (home and last stop) I 34. -g•q-Rp-r fä;-ér (2) 14 THE GAZETTE OF NDIA : EXTRAORDINARY [PART II—SEC. 3(i)] (3) (bay) (refuge) 35. (fouling points), 36. (2) (3) (4) (5) (6) (7) (8) (9) (10) frzrr t, 4.11 I t, (facing) MTVTT I 84Tq-l -a-fi •q-v-f@I 3.q-a•rr I qTR7TT : 3*i I Gi) 1976 3.40 I I 3.40 ft fr•q, 1 80 120 #rzO 711-9 I (-qq-q•rä) 1976 3.40 (4) (sand hump) (rall) 15 37. (2) VII& marq-IX 38. (1 fiqq, 1956 fit*ffi7 (live conductor) t, qz•i (3) 875-64 (value) fitaffi7 (4) (return circuit) (earth) üilii (earthing) (5) (earthing) fiZlq, 1956 (6) (earth wire) •-1-711 I H- 1987 I (8) (lighting arresters) I (9) (live conductor) (high tension equipment) I (10) ...ITTI 3.77 (11) -q-q-qi 39. q..ll-q•r • 16 (73) (Z) (a) THE GAZETTE OF INDIA • EXTRAORDINARY [PART IJ—SEG 3(i)] ftqqq), (fr+T), fz- *i, -e-q-q-ä *ré; Z#TJZ' ' #4friTT 25/2 x 25 qor. zorq««, a-TN 40. (inductive) x 25 qi A.-T (conductors) (induction) (conductors) (Inductive) (conductors) 41. energisation (energisaüon) 15 25 x 25 (q) 1994 fr«-ll (•m-1) 21007 2); (2) fitra-Bi, (1) *Til, : — 1910 [•m 3(i)] t, 25 x 25 42. 1994 () 21008 21009 43. 17 (1) (2) (3) (4) (5) (6) (i) 41 (ii) (iii) (fiqf0T) (clearance) (iv) (1) 25/2 (ii) (iii) 25 /2 x 25 (ii) (fiqf0T) (iii) Ati (iv) ' *-tTT; 2009 (31/2000—3 18 (7) 443. (i) (ii) (iii) (iv) (v) (vi) (vii) (viii) THE GAZETTE OF INDIA : EXTRAORDINARY 25 50 'k' 25 SO EquiT--25 50 5(2) 443 451 (éqß), -51±T, [PART IPSEC. 3(i)] 444. 1200 I 840 fi.#r. (1020 fitF, i. 28, 445, I å, fiü fffÉh-zqq €t, I ?itz 446. 19 447. 7M, I 150 j 448. pfiz 449. 1 Q. 0.5 1 = 10 450. 10 a«, aftqi, RT*i ttT 0.8 I (frfio I I ' (frfra) I 1 = 0.5 1 = 0.5 fr.xft. t, AR, 3-Tt*-§i I 451. (Nfiq) ft-e-fi, 'fiA7 : 1.676 : 9.19 1. 4.00 2. 3.00 583.33*r.) 3. 2.00 875*r.) 2 3 2 6 3 0.49 1.13 1.30 (31.97 % THE GAZETTE OF INDIA EXTRAORDINARY 3 0.51 0.64 1.00 1.10 5.94 9.19 [PART 11 —SEC. 3(i)] : 1.676 7i. : 9.19 151 201 300 301 401 1 501 1001 1 3000 1 0.51 : 0.10 : 9.19 2 2 2 9 15 2 30.50 3 2 4 61.00 5 4 5.550/0 6.96% 10.88% 11.97% 64.64% 100.00% : 1.676 6 üA.—1123 1124 3. 4. 5. (i) (iii) (iv) (v) (vi) 6. 2 5.00 3.05 2.00 1.83 3.05 2.90 6.64 5.17 3 2 9 2 2 3 2 19 21 4 5.00 6.10 18.00 3.66 6.10 8.70 61.00 47.56 108.56 5 3RR.ér.æå. ' 'Q (qrax@) 18 12 (\$ 300 1000 t) 4 21 6 : 1.676 7 1 8 2 fr.xft. 5 12 6 9 3 10 11 13 22 [PART 11—SEC 3(i)] : 8.78 THE GAZETTE OF INDIA EXTRAORDINARY : 1.676 (1540) 250 fi.qft. 50 13 qt. ür) 52 I 12 1 8.5 1 I fit*ffiq VI 9.19 1 2 x 3

61.48 5.35 66.83 fr.#r. 3.54 70.67 4 6 : 1.676 7 686.00 At. 700.00 8 : xiræ I 11—7Ätrg 3(i)] THE GAZETTE OF INDIA : EXTRAORDINARY [PART 11—SEC. 11—os 3(i)] 2009 GI/2000—4 26 : 292 2. THE GAZETTE OF INDIA : EXTRAORDINARY &-650 [PART 11 : 1.676 t, 1000 t. 72 103 ft.qfr. I 107 fi.#r. a•iü ! 65 ft.*r. (19.210) t Qi@i (masts) 112.5 I 63 1 160 fr.zft. I t 12.5 qq.âq., 132/25 2 t 2 41 ft-em I : 292 Bs.#r. : 1.676 2 3 3 3 14 12 23 4 2. 3. 4. 5. 6. 3(i)] : 292 2, • 292 1 1 2 1370/15-16 1454/7-8 2 3 xm - a-fi 4 6 25 Qi. €1. 7 27 : 1.676 S 1.676#1. 8 3 (2.0 #ra) ATé 4 •qlé 5 THE GAZETTÉ OF : EXTRAORDINARY [PART 11 : 292 1 2 (1) 1. 2. 3. 4. 5. 6. 2 1321/3-4 1327/13/14 3 11 TITÉ t 4 xv 5(3) (2) æiG3T 5 6 —SEC. : 1.676 7 (3) (•u) \3TüßT) 3(i)] 29 (3) (1) 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. (2) 3âaré ? 37 a-ifr7 fiqfur ? 9 MT(T) t ? 30 (1) 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42

43. THE GAZETTE OF INDIA : EXTRAORDINARY (2) fi*r ? 4.57 1.22 qorz-(I 7 ft-rra-« 25 50 [PART 11—SEC. (3) 11—avg 3(i)] 31 (3) (1) 44. 45. 46. 47 48 49 so 51 52 (2) qitz 400 1 ? fit-q 3.7-qq•rq * 1 : 260 1 2 : 100 1 ft-em t, 1 2 Alé 2 (ii) (fizn, izti ? 4.18 53 •qqf•q ? 54 ? 32 (1) 55 56 57 58 59 60 GAZETTE OF INDIA : EXTRAORDINARY (2) [PART 11—SEC. (3) fiftfq ? (ii) (XNf, fr*i z•a-a t I (iii) (iv) : —ZTV Qrrr I (vi) 30.qrq-V111 (# XVII) t, 11—uos 3(i)] (vii) fiqqSi (viii) (ix) XVII 33 i.q.zt.q«. 7 xvm 2 2009 GI/2000—6 3 4 5 6 8 9 10 11 : 1.676 3im•f7 fèzr«: 12 : 1.676 tfr. 34 THE GAZETTE OF INDIA : EXTRAORDINARY 36(9)] \$1 (ZTZTTUFT) €5) 1201180 €1. -«r.fi. 3.40 180 120 [PART 11 —SEC. 3(i)l tTTFT ZIT [3(i)] 35 53 (7) (1) (2) (3) (4) (7) ARzqi 100 frfr#rzx ft ? ? (ii) (10) t 3i7(36 THE GAZETTE OF INDIA : EXTRAORDINARY [PART YI—SEC. 3(i)] (11) (12) (13) (14) (15) (üq) (16) t (17) (18) (19) (20) (3fi) 2.5 (21) (22) ' ' ft-q7 (23) (24) (qi) (25) 11. : -a-fi ? qfi•qq ? () (Gi-ü) i, i 2. 3. 4. 5. 6. 7. 8. 9, 11. 12. 13. m. 1. 2. 1. 2. 3. 37 qvi 5 ft.*f. ' ' ' ' qfi) ? F) "fgäzæf" Rr*i Meri t, () t, 3i-«-rf« (qi) (Sv qv) i, fiF1*i 38 4. s. 6. 1. 2. 3. 4. 5. 6. 7. S. 1. 2. 3

4. THE GAZETTE OF INDIA EXTRAORDINARY [PART 11—SEC. 3(i)] (i) 320 (Rig) t (Rfirr) 180 (ii) 200 t ? (O (q) tfQi ? (fiia), I TIAT t, ? " •fifi' ' t, (q) (371Qz) [3(i)] 5. 6. 7

8. MVi t, fiqfffi7 fiq*i : —1. 2. 3. 4. 6. (iM) 200 ? 11. 39 1. 2. 3. 4. 5. 6. 7. 8. ziäßEr t t ? zi7T* ? 40 THE GAZETTE OF INDIA : EXTRAORDINÄÄY [PART 11—SEC. 3(i)] 3. (qi-a 4. 6. 7. 1. 2. vré 4. (37TQz) (O (*Tüâ) t ? 6, 43 (7)] 25 so t«, tt. 1. 25 is. 50 q. [Il—vos 3(i)] 2. (37e}) ? 3. qzi t, qvi 4. 5. fi*) *.€r. 250 fit () zi7 R•qzqi (zhx 300 ft. ? 2. (qTZRxq#ä) 3. ftz# ? 6. 60 ? efift*i 7 PAT 1. 41 1. (OVI) t ? 2. (afiST) 3 ? 3. 10 (OVI) 2009 GI/2000-.a TI-IE GAZETTE OF INDIA : EXTRAORDINARY [PART IPSEC. 3(i)] 4. (VAIâ) (3V.i) ? 1. 2. (TFü) ? 4. zor.€r. ? 4. 5. 8. 9. 10. t 1. fit 2. (*Err) ? 5 1 so q.æfr. 4. (aqâ) 5. fiz éQT*i, 25 (@lëi) 6. (tq•atv) ? äfizrà 43 MINISTRY OF RAILWAYS (Railway Board) NOTIFICATION New Delhi, 21st July, 2000 The Railways Opening for Public Carriage of Passengers Rules, 2000. G.S.R. exercise of the powers conferred by sections 28, 29 and 198 of the Railways 1989 (24 of 1989), the Central Government hereby makes the following rules, namely: -- CHAVER 1 PRELIMINARY 1. Short tide, commencement and application -(1) These rules may be called the Railways (Opening for Public Carriage of Passengers) Rules,2000. (2) shall come into force on the düe offmeir publicüion in fre Official Gazette. (3) Th%' shall apply to Government railways and also to non-government railways

2. Definitions - In ffese rules, unless the context oårerwise requires, —(a) "Act" means the Railways Act, 1989 (24 of 1989); (b) "Bridge Engineer" means the Chief Engineer, the Deputy Chief Engineer (bridges) or any other engineer responsible for the construction and design of bridges ; (c) "Commissioner" means âe Chief Commissioner of Railway Safety or 44 GAZETTE OF : EXTRAORDINARY a Commissim2er of Rail%ov Süy qpoimed under 5; (d) "carriage" âe carri.age of passagers or goods by a (e) "Form" means a form t) diese rules; (f) "Galeral M&'ager" - [PART 11—SEC. (i) (ii) in case of a railway, the Manager of a 7.mRl Railway qpointed under section 4 nd includes the Chief Administrüve Officer, die Chief Project Manager or any Odier officer, rot below die of Under Secretary to I)qa.rünan and tie powers of the Galeral Manager have beat delegated by galera.l or special order tmder sectim 28; and in die case of a non&vernrrnan railway, die person who is the Chief Executive of railway, by whatever name and such other officer of that railway to whom the pwers of tie Chief Executive have beal delegated; (g) ' 'Galeral Rulæ " means âe Indian Railways (Open Lines) General Rules, 1976, as amended by the Indian Railways (Open Lines) General Arnaldment Rules, 1991 ; (h) "Govenmment railway " means a railway owned by the Central G)vemment ; (i) " Inspection Report "means the inspection report of âe Commissioner gival under

rule 18 ; (j) "level crossing" means an inter-section of a road with lines of rails the same level ; (k) " non-Government railway "means a railway other than a Government railway ; 45 (l) means a person travelling with a ticket; (m) "railway" means a or portion of a railway, for the public carriage of passengers or goods, and includes - (1) all lands within the fences or other boundary marks indicating the limits of the land appurtenant to a railway ; (2) all lines of rails, sidings, yards, branches used for the purposes of, or in connection with, a railway and includes bridges over which lines of rails pass; (3) all electric traction equipment, power supply and distribution installations used for the purposes of or in connection with, a railway; (4) all rolling stock, stations, offices, warehouses, wharves, workshops, manufactories, fixed plant and machinery, roads and streets, running rooms, rest houses, institutes, hospitals, waterworks and water supply installations, staff dwellings and any other works constructed for the purpose of, or in connection with, railway; (5) all vehicles which are used on any road for the purposes of traffic of a railway and owned, hired or worked by a railway; and (6) all ferries, ships, boats and rafts which are used on any canal, river, lake or other navigable inland waters for the purposes of the traffic of railway and owned, hired or worked by a railway administration, but does not include - (A) a tramway wholly within a municipal area; and (B) lines of rails built in any exhibition ground, fair park, or any other place solely for the purpose of recreation ; Explanation. - For the purpose of these rules, "railway" shall include newly built railway lines, either as extension of an existing railway, or as double or multiple lines alongside an existing one, conversion of railway from one gauge to another, restoration of abandoned lines, the use of electric motive power or change of traction from Direct Current(DC) to Alternating Current(AC) on an existing line; (n) "railway administration", in relation to — (a) a Government railway, means the General Manager of a Zonal Railway; and a non-Government railway, means the person who is the owner or lessee of the railway or the person working the railway under an agreement and includes the Chief Executive of that railway by whatever name called; (o) " railway servant " means any person employed by the Central Government or by any railway administration in the service of any railway ; (p) "rolling stock" includes locomotives, tenders, carriages, wagons, rail-cars, containers, trucks, trolleys and vehicles of all kinds moving on rails; (q) "section", means a section of the Act ; (r) "Schedule" a Schedule annexed to these rules ; (s) "traffic" includes rolling stock of every description as well passengers and goods; (t) "Zonal Railway" means a railway constituted under section 3 and in the case of a non-Government railway such division or section of that railway as the Central Government may, in consultation with that railway, notify ; (u) all other words and expressions used in these rules, but not defined shall mean respectively the same as in the Act and the Indian Railways(Open Lines) General Rules, 1976. 3(i)] 47 CHAPTER 11 PREPARATION FOR OPENING OF RAILWAYS 1. Reference to the Commissioner - (1) Every railway administration shall ensure that the railway line or a portion thereof to be opened for public carriage of passengers is complete in all respects as per the Indian Railways Standard Codes and Manuals of Practice and for such opening all are complete and that the working of the railway is regulated by the Indian Railways(Open Lines) General Rules, 1976

2. The Chief Executive of the railway of a non-Government railway, before making a reference to the Commissioner under sub-rule(3) for inspection of any railway, shall obtain a clearance from the Central Government that the railway which is sought to be opened has been constructed and maintained by that administration in accordance with the Indian Railways Standard Codes and Manuals of Practice and the working of the railway is governed by the Indian Railways(Open Lines) General Rules, 1976

3. Where the General Manager of a Zonal Railway, or the Chief Executive of a non-Government railway is of the opinion that the railway or part thereof is required to be opened for public carriage of passengers, he shall refer the matter to the Commissioner for inspection and report the safety of that railway

4. Supply of certain documents to Commissioner -(1) 'The General Manager of a Zonal Railway or the Chief Executive of the non-Government railway shall furnish all the relevant to the Commissioner while making reference to the Commissioner for inspection under rule 3 from the following list of namely :- 48 THE GAZETTE OF INDIA : EXTRAORDINARY (a) Tabulated details; (b) Index Plan and Section of railway; (c) Drawings of works; (d) List of questions and answers; (e) Certificates; [PART 11—SEC. (f) List of infringements of Maximum and Minimum Dimensions; (g) Working orders to be enforced at each station; and (h) Administrative note giving the salient features of the project. (2) The referred to in sub-rule (1) shall indicate the distances from the same "fixed point", in kilometres and decimals up to two digits and the fixed point shall be clearly defined in a Note and on the

Plan and Section sheets of the work documents. (3) The datum adopted shall be "Mean Sea Level" as fixed by the Survey of India and all heights shall be mentioned reference to the datum in meters and decimals up to two digits



5. Content of documents to be supplied - 'The documents referred to in rule 4 shall contain the details as specified below:- (1) details which shall consist of important characteristics of the or a portion of railway to be opened for public carriage of passengers and in particular include - (a) Curve abstract as specified in



Form I; (b) Gradi'lt abstract a.s specified in Form 11; (c) Bridge abstract as specified in Form m; (d) bridges — particulars of waterway and construction as specified in Form IV; 3(i)] (e) Ballast and Permanent Way as specified in Form V; (D md sites as specified in Form VI; (g) Stmion accommodüon as specified in Form VII; (h) Stnion machinery as specified in Form VIII; (i) Level crossing as specified in Form IX; (i) Brief particulars of traction installnions as specified in Form X; (k) Power supply installation abstract a.s specified in Form XI; (l) Traction depot abstract as specified Form XII; (m) Restricted Over Head Equipment clearances abstract as specified in xm•, and (n) crossing wer railway track abstract as specified in Form XIV. (2) Index Plan md Section sheet shall be prepared as laid in paragraphs 443 to 451 ofãe Indian Railways Code for the Engineering Departünent as reproduced in Schedule. (a) Completion drawings of bridges, with drawings showing each type of ørders used and giving the loading standard for which each is designed, and (if called for by the Commissioner), details of the calculations of their strength; (b) drawings of tunnels, if any; (c) Diagrammatic plans of station yards showing the gradients, the layout of tracks and particulars of turn out, block working and of any signals and interlocking installed; (d) Implantnion of diagrams of Over Head Equipment masts, if applicable. (3) List of Questions and Answers shall be prepared in terms of questions enlisted in Form XV. (4) Certificates of works shall comprise - (a) Certificate in Form XVI containing the comments on the following 20æ GI/2000—7 49 THE GAZETTE OF : EXTRAORDINARY namely :- (i) maximum and minimum dimensions; (ii) of bridges; (iii) number of engines on one span ; (iv) brake and communications; [PART 11—SEC. (v) accommodation in coaches to cateq for differalt cdegories of passengers ; (vi) system of working; (vii) electric traction equipment (only if Qplicable); and (viii) types of rolling stock proposed along widi list of restrictions. (5) List of infringements of mædum and minimum dimensions shall be prepared in Form XVn and shall show the gauge of railway and items infringed and shall contain ffil for the infringement and the reference to authority under which the is permitted or allowed. (6) Working orders to be enforced at each station on die railway to be opened shall be prepared in accordance with frie rulö provided in Chapter V of the General Rules and shall speci& any special conditions that are required to be met with. (7) Where it involves introduction of electric traction on ü•ne railway line the working orders shall include traction working rules. [•m 3(i)] 51 CHAPTER m DUTÆS OF THE GENERAL MANAGER 6. Deviation from or infringement of Standard Codes and Manuals of Practice to be notified - (1) The General Manager shall ensure that the railway proposed to be opened is operationally fit in every respect before inspection. (2) The General Manager shall, while making the reference under rule 3, bring to the notice of the Commissioner any deviation in design, material and construction of the works, rolling stocks or appliances of the railway, instances in which Maximum and Minimum Dimensions have not been observed, or the bridges, tunnels are not capable of carrying the prescribed or standard load without exceeding the stress specified in the Indian Railways Standard Codes and Manuals of Practice

7. General Manager to make special arrangements - (1) The General Manager shall make such arrangements as are necessary to facilitate the inspection by the Commissioner, of the railway, which is to be opened. (2) The General Manager shall be responsible to make such arrangements as the Commissioner may require for inspection and testing of bridges and tunnels on the railway, which is to be opened

8. Supply of information to Commissioner - lhe General Manager shall supply all the information and give all the assistance in his power to the Commissioner and supply or provide all instruments and apparatus required for making measurements, testing of bridges and and Mher iBtallations. 52 TI-E GAZETTE OF INDIA : EXTRAORDINARY [PART II—SEC. 3(i)] 9. Dismanding of any work on request by Commissioner - (1) The General Manager shall, on receipt of a request made by the Commissioner, make arrangements to dismantle any structure on the railway to be opened, with a view to make complete examination of the details or workmanship of the structure, as quickly and completely as possible. (2) The Commssioner, while requesting the dismantling of the structure, shall be responsible to see that such dismantling does not affect the uilty or strength of the structure, tmless total dismantling is necessary for its proper inspection

10. General Manager to accompany Commissioner at inspection - (1) The General Manager shall accompany the Commissioner throughout the (2) If, for any unavoidable reason it is not possible for the General Manager to accompy the Commissioner, then, an officer not below the rank of Under Secretary to the Government of India authorised by general or special order of the Central

Government issued under section 28, shall accompany the Commissioner and shall be present during the entire period of (3) During the inspection of each portion or division of the railway, the engineer or officer who is or was in immediate charge of that portion or division of the during its construction may also be present.(4) An officer not below the rank of Assistant Engineer shall be made responsible for making arrangements for testing bridges on the railway line. 11—vus 3(i)] 53 CHAPTER W DUTIES OF THE COMMISSIONER 11. Commissioner to make full and complete examination - (1) On receiving a reference under rule 3 from the General Manager of any railway for inspection of a railway to be opened for public carriage of passengers, the Commissioner shall, with a view to determine whether it is fit to be so opened, enquire into all matters which appears to him relevant for the safety of public carriage of passengers and go«xis, on that railway. (2). The Commissioner shall satisfy himself that - (a) the Indian Railways(Open Lines) General Rules, 1976 have been applied to the railway or portion of a railway proposed to be opened; (b) the maximum and minimum dimensions have been observed; (c) the works, structures, rolling stocks and appliances belonging to, or working on, the railway are designed properly or constructed in such manner so as to guard the system against accident and failure

12. Provisions for handling traffic at stations -The Commissioner shall satisfy himself that at every station on a railway proposed to be opened - (a) provisions have been made for handling of traffic of passengers and goods; and (b) arrangements have been made for easy access by road

13. Accommodation works - Where the works made under section 16 are to be inspected, the Commissioner shall ensure that such works are sufficient and suitable for the purpose for which are provided or constructed

14. Inspection of light railways - The Commissioner shall, while 54 THE GAZETTE OF INDIA : EXTRAORDINARY [PART 11 —SEC. Inspecting any light railway to be opened for public carriage of passengers, take into consideration - (a) speed limits which are specified with reference to narrow gauge of the line and the kind of traffic proposed to be handled; (b) standard of convenience of the passengers keeping in view the condition in which the light railway shall be operated, and shall lay down the speed limits to be observed and the kind of traffic the light railway may be allowed to handle

15. List of questions and answers - (1) The Commissioner shall take into the answers provided by the General Manager to the questions listed in the list of questions and answers submitted in relation to them under sub-rule (4) of rule 5 and satisfy himself that the points - enumerated therein have been duly observed by the concerned railway administration.(2) The Commissioner may, if he considers it necessary, modify the requirements specified in answers in accordance with the circumstances of each case

16. Inspection of railway bridges - (1) The Commissioner shall satisfy himself that the railway bridges and other elevated structures on the railway proposed to be opened for public carriage of passengers are designed and constructed as to the loads specification specified in the IRS Bridges Rules, 1964 and that the loads specification and stress limits are not exceeded.(2) The Commissioner shall be responsible to see that under no circumstances the stresses specified in the Standard Codes of Practice for bridges are exceeded, unless the Central Government, by general or 11*Yu-s 3(i)] 55 special order, specify different stresses or loads specification, for the reasons recorded therein, in a specific case. (3) Where the Commissioner is satisfied that first class standards are not required in the cases such as temporary bridges, railway worked at low speed or with small axle loads, he may recommend departure from the IRS Bridge Rules, 1964 and the Standard Codes of Practice on such conditions as he may deem fit, provided that the Commissioner shall forward with his report the calculations showing that the opening of such bridges, railways or axle loads will not be dangerous to the public carriage of passengers and the railway servants. (4) Where any particular bridge is not up to the standards mentioned in sub-rules (1) to (3), the Commissioner shall submit the design of the bridge along with the standard of loading to the Central Government along with his recommendations as to whether the bridge may be brought in use and if so, under what conditions

17. Procedure for inspection of bridges - (1) The Commissioner shall examine at least one bridge of each different pattern or type and satisfy himself about the adequacy with reference to safety of - (a) the general design of the bridge; (b) designs of different parts or portions of the bridge; (c) the construction and erection of the whole structure of the bridge; (d) girder spans and their bedding at all four supports; and (e) type and design of bearings in regard to pre-stressed bridges. (2) Where the Commissioner feels that it is necessary for the purpose of inspection and to see whether any riveting has been properly and efficiently executed, he may order for cutting out any rivets and may also order the dismantling of any part of the structure of the bridge for more detailed examination. (3) If the Commissioner considers it necessary, in addition to the certificate of a Bridge Engineer employed for the purpose, he can call for the Load Deflection Test under the loads for which the bridge is designed and where this is not possible under the heaviest loads available. 56 THE GAZETTE OF INDIA : EXTRAORDINARY [PART II—SEC. (4) (a) When making Card Deflection Test, the test cards are to be placed at angles to the centre line of the track, in order to record oscillation and recording pencil point should be as fine as possible. (b) When central deflection is measured, allowance shall be made for the deflection, if any, of the abutments. (5) In order to record the static deflection, the test shall be carried out at dead slow speed and at the maximum permissible speed of the section and the speed shall be carefully measured by stopwatch or by some automatic means. (6) The actual deflection cards shall be submitted to the Commissioner together with a statement of deflections and oscillations in



Form XVIII. (7) The deflection of the girder shall be worked out theoretically and shall be shown in column 12 of Form XVIII to enable a comparison being made with the observed deflection. (8) In addition to the Card Deflection Test, the Commissioner may, at his discretion, require Stress Recorder Test to be carried out on any plate or open web girders of clear spans exceeding 30 metres. (9) (a) Stress Recorder Test shall be carried out with a stress recorder of approved type. (b) Test loads and speeds shall be as specified for card Deflection Tests. (c) Tests shall be taken, on the chords or flanges at mid span and on such web and floor members as the Commissioner shall specify. (d) If a sufficient number of instruments are available, these tests shall be made simultaneously. (10) The stress recorder diagrams together with calculations showing how the maximum stress under the design load with full impact (including dead load stresses) is deduced from the measured stress shall be submitted to the Commissioner who shall, before sanctioning the opening of the bridge, satisfy himself that the stresses in the girders will not exceed those specified in the IRS Steel Bridge Code, 1962. (11) If the Commissioner is satisfied that the girder has been properly designed for the work it is intended to perform, then, the open web and plate girders are not required to be tested. 3(i)] (12) New plate girders of standard designs need not be tested if those girders were inspected at the time of their manufacture by the Research, Design and Standards Organisation or any other inspecting agency and a certificate of satisfactory erection including the seating of the bearings and field riveting has been given. (13) The Commissioner may decide that the second hand plate girders are not required to be tested if he is satisfied that - (i) the girder is strong enough for the work it is intended to perform; and (ii) the responsible officer of the concerned railway has certified that the condition of the material and workmanship are such that the use of the girder for the specified loading shall not involve stresses in excess of those permitted in the IRS Steel Bridge Code, 1962, provided that this sub-rule shall not apply to welded girders. (14) The Commissioner may have tests of any number of spans made and may have a span tested any number of times and at any speeds as he considers desirable, up to the maximum permissible speed of the Section. (15) Card Deflection Test shall be carried out for each welded girder including second hand girders, and results of such tests, together with the cards, shall be supplied to the Commissioner. (16) The Commissioner shall examine as many welded girders as possible and shall also have Card Deflection Test of fully welded girder carried out in his presence. (17) The Commissioner shall be supplied with a certificate from the engineer (not below the Junior Administrative Grade) responsible for design and construction of the bridge to the effect that welds have been designed in accordance with the IRS Code for Mild Steel Bridges carrying rail, 1972 and executed to the satisfaction of the said engineer. (18) If radiographic examination of the welds is specified in the drawing or procedure sheet or is required to be done in accordance with the provisions of the IRS Code for Mild Steel Bridges carrying rail, 1972, the results of such examination shall be annexed to the certificate. 2009 GI/2000—8 57 58 THE GAZETTE OF INDIA : EXTRAORDINARY CHAVER V THE INSPECTION REPORT [PART II—SEC. 3(i)] 18.

Contents of Inspection Report - (1) The Inspection Report of Commissioner shall specify that - (a) he has made a careful inspection of the railway and the rolling stock that may be used thereon; (b) the moving and fixed dimensions as laid down have not been infringed; (c) the structure of lines of rails, strength of bridges, general structural character of the works and size of, and maximum gross load upon the axles of any rolling stock, comply with the requirements laid down; and (d) in his opinion, the railway can be opened for the public carriage of passengers without any danger to the public using it. (2) The Inspection Report shall be clear and concise and shall deal with all matters which are required to be considered, particularly whether the railway line is designed for standard loading and the instances of deviation or infringement of Maximum and Minimum Dimensions

19. Documents accompanying Inspection Report - 'The following documents shall accompany the Inspection Report, namely :- (i) Index Plan and Section of railways; (ii) Tabulated details in Forms I to XIV; (iii) List of Questions and Answers in



Form XV ; (iv) Certificate by the General Manager of concerned railway in Form (v) List of infringements of Maximum and Minimum Dimensions in Form xvii ; (vi) Results of the bridge test in Form XVIII; Explanation.- When sanction is required for the initiation of electric traction on a line already opened for passenger traffic, only such of the as are required by the Commissioner, need be forwarded to him—[3(i)] 59 20. Submission of Report to Central Government - In respect of every reference made to him under sub-rule (3) of rule 3, the Commissioner shall submit an Inspection Report to the Central Government

CHAPTER VI SANCTION TO OPEN RAILWAY FOR PUBLIC CARRIAGE OF PASSENGERS

21. Sanctioning of opening of railway - (1) The Central Government may, after considering the Inspection Report of the Commissioner, sanction the opening of any railway or a portion of a railway for the public carriage of passengers. (2) While sanctioning of the opening of any railway, Central Government shall give due consideration to the suggestions or conditions subject to which the Commissioner has recommended the opening of the railway. (3) Where the Commissioner has not recommended the opening of any railway, or has proposed to cancel the sanction already given, the Central Government shall confirm, modify or cancel the sanction given to the opening of such railway or a portion thereof and shall take steps to remove the defects or shortcomings pointed out by the Commissioner in his Inspection Report in the case of railway, and in the case of non-Government railway direct the General Manager concerned to remove the defects or shortcomings reported by the Commissioner. (4) Where the defect or shortcomings are such that cannot be removed unless the railway or a portion thereof is then the Central Government shall order the closing of the railway forthwith for the public of the passengers. (5) A railway line, which is closed for the public carriage of passengers under section 25, shall not be reopened until it is duly inspected by the Commissioner in accordance with the provisions of Chapter IV of these rules and the Commissioner of such railway line. (6) The actual date of opening of a new railway line or a portion thereof 60 GAZETTE OF INDIA : EXTRAORDINARY [PART 11—SEC. of such line for passenger traffic shall be notified by the concerned General Manager, after consulting the Central Government, by notification in the Official Gazette, and in the local news papers of the areas through which the railway line passes. Explanation .- In this Chapter new lines of railway shall include - (a) extensions of existing railways, new double, treble or other running lines laid alongside existing lines and conversion from one gauge to another; (b) the initiation of electric traction on the existing line

22. Temporary opening of railways by Commissioner - Commissioner may sanction the temporary opening of new railway lines for public carriage of passengers, subject to such conditions as he may impose during the period of inspection in the interest of the passengers. (2) On receipt of the Inspection Report of the Commissioner, the Central Government may confirm, modify or cancel the sanction given under sub- rule (1) subject to such conditions, alterations or relaxation as may be considered necessary

23. Sanction to use locomotive engines and rolling stock on new lines- (1) The Commissioner may sanction the use of locomotive engines, rolling stock, or any other motive power under section 27 which is already running on any Zonal railway, or any division or section of any non- Government railway, or on any new lines in accordance with provisions of the Indian Railways (Open Lines) General Rules, 1976 or orders on the subject issued by the Government from time to time. (2) Before according sanction under sub-section (1), the Commissioner shall ascertain that the application of the Indian Railways (Open Lines) General Rules, 1976 by the concerned railway administration which operates the line has been previously sanctioned and notified in the Official Gazette. 3(i)] 61 CHAPTER VII OPENING OF BRIDGES, MINOR WORKS, DIVERSIONS AND USE OF NEW TYPES OF ROLLING STOCK ON EXISTING RAILWAYS 24. Notice of construction of deviation lines, etc. - (1) Where It is proposed, on the railway which had been opened after inspection, to construct any deviation lines, stations, junctions or crossings on the level, or to make any addition, alteration or reconstruction materially affecting the character of any work and such work forms part of, or is directly connected with the working of that railway, the railway administration concerned shall give notice to that effect to the Commissioner. (2) Before any such work, the execution of which may affect the running of trains carrying passengers, is put in hand, the concerned railway administration shall furnish to the Commissioner for his approval drawings or particulars of the work and of any temporary arrangements necessary for carrying it out (3) Every temporary deviation line irrespective of its length and any permanent diversion less than 2 kilometres in

length, where no new station is involved, shall be treated as new minor works. (4) In case of an accident, temporary diversions may be opened under section 24 after a responsible officer of the concerned railway certifies that the use of such diversion will not be attended with danger to passengers or to the railway servants. (5) Where the use of the temporary diversion is likely to be extended to for more than three days, the Commissioner shall take action to inspect the diversion at the earliest opportunity 25. Power of Commissioner to open minor works - (1) "The 62 THE GAZETTE OF INDIA EXTRA(Commissioner may, without previous notice, sanction the opening of any minor work for passenger traffic, if he is satisfied, either with or without inspection, that the provisions of clauses (b),(c) and (d) of sub-section (1) of section 22 have been duly fulfilled (2) For the works opened without inspection, the Commissioner shall take steps for carrying out a subsequent inspection, (3) The authority for opening any work shall be communicated in writing by the Commissioner to the concerned railway administration and a record of all works so authorised during each year, with particulars of the prior or subsequent inspection, if made, shall be maintained by the Commissioner. 26 Infringements of Maximum and Minimum Dimensions - No infringement of the Maximum and Minimum Dimensions shall be permitted without the prior sanction of the Commissioner or of the Government 27 Opening of new or strengthened bridges - (1) No railway bridge shall be erected or re-opened to traffic, after strengthening, without the sanction of the Commissioner even though it is able to carry the loads without exceeding the stresses prescribed in the relevant Codes of Practice or in the absence of any such reference, the design criteria approved by the Central Government (2) No load shall be imposed on any railway bridge which would cause in any member thereof stresses greater than those specified in sub-rule (1) without the sanction of the Commissioner (3) Closure of an existing bridge shall require the sanction of the Commissioner 3(i) 63 28. Use of new types of locomotives or rolling stock - (1) Any administration which desires to use new types of locomotives or rolling stock different from those already running on any section or division of its railways, shall apply for sanction for the same to the Central Government through the Commissioner. (2) The application under sub-rule (1) shall be accompanied by - (i) such diagrams as may be necessary to give full particulars of the axle loads, wheel spacing, length over buffers and other principal dimensions of the rolling stock for which sanction is required; (ii) a certificate signed by the Chief Engineer, the Chief Mechanical Engineer and the Chief Electrical Engineer (for electric stock) of the concerned railway in the form given below:-

"CERTIFICATE Certified that it is safe to run (particulars of locomotive and rolling stock proposed to run) not exceeding -----units (in the case of locomotive) coupled together on the section (station) to (station) from (km) to (km) of the Railway at a maximum speed of ____ km/h against a maximum speed of (km/h) certified by Research, Designs and Standards Organisation, subject to the following speed restrictions and conditions:- (a) Speed restrictions Sl. No. From Km. to Km. Nature of restriction Brief Reason for restriction 64 GAZETTE OF : EXTRAORDINARY ART II—SEC. 3 i (b) Special conditions 1 2 3 4 To be signed by - I. The Chief Mechanical Engineer... 3. The Chief Electrical Engineer ..

5. The Chief Operating Manager

2. The Chief Engineer...

4. The Chief Signalling and Telecommunications Engineer... Note 1. - The Chief Operating Manager and The Chief and Telecommunications Engineer should be associated when there is an increase in the speed of a loco/rolling stock is contemplated over the sanctioned speed for a specific category of train (Passenger or Goods) over a particular of the railway. Note 2. - Over the railways where both the shop maintenance and open line maintenance of electric locos and Electric Multiple Unit rolling stock are under the control of the Electric Department only, the Chief Electrical Engineer, otherwise the Chief Mechanical Engineer should also sign. Note 3. - Where motion power with chopper control is to be used, the Chief Electrical Engineer and the Chief Signalling and Telecommunications Engineer should sign the certificate. N (iii) Such calculations and stress sheets showing 3(i) 65 (iv) (v) (vi) (a) the conclusions arrived at ; (b) the external forces on which the stress calculations are based ; (c) the stresses which will be produced in the various bridges over which the proposed rolling stock will run ; and (d) the effects which the said rolling stock will have on various structures or tracks as compared with those caused by the rolling stock already in use, or allowed by the existing Government orders. The calculations, stress sheet must show as to what allowance has been made for any secondary or deformation stresses in addition to the primary stresses caused by the external forces and what relief of stress, if any, has been included. The cost of modification to signalling and telecommunication installations necessitated by the use, if any, of chopper or thyristor control systems

shall also be indicated. -An approximate estimate of the cost of such improvement in existing structure or track as the use of the proposed rolling stock is likely to render necessary on the railway concerned, whether immediately or in the near future. (3) The same must be scrutinised by the Commissioner and his recommendations thereon shall be submitted to the Central Government for its orders. (4) No new type of engine or rolling stock which would cause stresses exceeding those specified in the IRS Bridge Rules, 1964, or the Standard Codes of Practice, or in the absence of any such reference, the design criteria approved by the Central Government for existing structures or excessive stresses in track shall be ordered until the sanction of the Central Government has been received through the Commissioner for doing so. (5) (a) For permitting new designs of locomotives, the Commissioner may require oscillation trials to be conducted and call for the records for his scrutiny. (b) The certificate referred to in clause (ii) of sub-rule (1) shall clearly state that the speed certified does not exceed the limit laid down by the Research, Designs and Standard Organisation. In addition, the maximum number of motive power units proposed to be coupled together for multiple operation shall be specifically mentioned. Note.- Provisions contained in this clause shall also apply for increasing the speed of existing rolling stock by making improvements. (c) For increase of speed beyond 100 km/hour on broad gauge and 75 km/hour on meter gauge of nominated trains on specific routes, the Commissioner may require route proving run by portable accelerometer or confirmatory oscillograph car run as per the instructions for the same being in force on the entire route at the maximum proposed speed. The Chief Signal and Telecommunication Engineer and the Chief Operations Manager shall sign the joint safety certificate in this case also. (6) Any modification in the design of the coach which alters the system of operation and control over the rolling stock, like change in the braking system or change in the principle of traction shall be considered as a material modification and shall constitute a change in the type and design of the rolling stock. (7) Any modification in the coach or rolling stock affecting the salient dimensions or suspension system or running gears and any other modifications including body, seating and like irrespective of whether such affect the riding quality of the rolling stock or shall also constitute a change in type or design of the rolling stock. (8) Introduction of any train consisting of new coaching stocks of different design or type which are not already running on the section of a railway system shall also require the sanction of the Commissioner.

29. Testing of bridges - Before sanctioning the opening of new or strengthened bridges or the running of heavier loads over existing bridges, the Commissioner may require Card Deflection or Stress Recorder Test to be carried out as specified in Chapter IV. Test on Pre Stress Concrete girder or girder bridge may also be carried out

30. Use of new type of Block Instrument - (1) A railway administration, which desires to use a new type of block instrument, or main Signalling instrument, which is not an approved type, shall apply for sanction to the Commissioner. (2) The application under sub-rule (1) must be accompanied by - (i) a list of the requirements which the instrument fulfils, together with the result of the field trial conducted by the railway concerned; (ii) a certificate from the Chief Signalling and Telecommunications Engineer in the form given below. - 68 •GAZETTE OF INDIA : " CERTIFICATE [PART 11 —SEC. 3(i)] Certified it is safe to use of the traction / on the section of the railway, with the following precautions:- 1. 2. 3. 4. etc. "The Chief Signalling and Telecommunication Note. - The same should be scrutinised and satisfied, will communicate his sanction to the concerned railway. If he is not fully satisfied, he will give his comments recommending further action. (iii) A statement whether the equipment complies with the specifications provided by the (iv) A statement giving an account of the performance of the equipment as a result of bench conducted by Research, Designs and Standards Organisation. (v) The circuit diagrams and other relevant diagrams and as may be necessary, to give full details of the operation and safety features incorporated. A copy of the instructions by the Chief Operating Manager, to be used for the operation of the equipment by the operating those instructions for working under the conditions; 69 CHAPTER V REQUIREMENTS AND RECOMMENDATIONS FOR SIGNALLING AND INSTALLATIONS 31. Signal (1) The number of signals provided on the line of the SWs shall be limited to the extent to the actual necessity for safety and purposes. (2) The distance between the Disturbance and the first stop signal ahead shall be a minimum the former the highest authorised speed with due allowance for weight, braking power, gradient and signal can be stopped before passing the signal. (3) The subsidiary signals shall be readily distinguishable from the running signals. (4) Where a signal or its back is not visible to the railway servant operating the signal, the aspect of the signal and the colour of the light shall be repeated the

place of (5) It is desirable that signalling all block stations and level crossings in the same section shall conform to one type. (6) Signals shall be so designed as to give the most restrictive aspect in the event of failure of any part of the mechanism, which operates them. (7) The location and type of signals shall be in accordance with the provisions contained in Chapter VII of the Signal Engineering Manual, Part I and Chapter of the Indian Railways (Open Lines) Rules, 1976

32. Points - (1) Points shall be so located that movement over them shall be in the view of the cabin or the loco from which they are worked unless an approved alternative arrangement for direct vision is provided. [PART II—SEC. (2) The points, locks and bars

shall not be worked by wire but by reading or by power operation (3) Spring points shall not be used. (4) Movable crossings and movable diamond crossings on passenger lines shall be provided with complete facing point equipment of approved type. (5) The requirements of points as stipulated in Chapter Vn of the Signal Engineering Manual, Part I, shall be followed 33. Interlocking - (1) Signal and interlocking apparatus and installations shall be in accordance Chapter VI of the Signal Engineering Manual, Part I. (2) Apparatus provided for operation and control of signals, points, etc., shall be interlocked and arranged to comply with the essentials of interlocking and other requirements as laid down in Chapter VI of the Signal Engineering Manual, Part I. (3) The operation of the signalling gears may be from a lever frame or a panel with individual operation of points, signals and other functions or a panel providing operation of route setting type or other approved means in accordance with the provisions of Chapter VI of the Signal Part I. 3(i)] 71 (4) When a signal is controlled by more than one agency, it shall be possible for every such controlling agency to replace the signal to "ON" position. (5) The Station Master shall be provided with interlocked mechanical or electrical control of the Home and Last Stop Signals except where the conditions stipulated in the Signal Engineering Manual, Paragraph 7.88.2 are fulfilled. (6) Standards of signalling and interlocking shall be arranged complying with the requirements of the Signal Engineering Manual

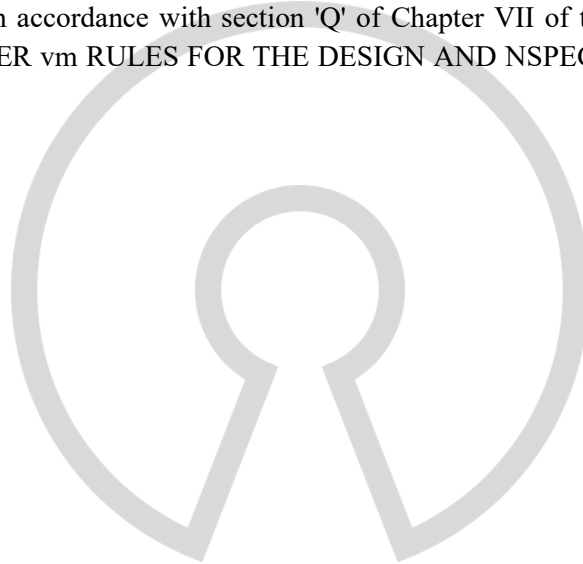
34. Siding and trap points - (1) Sidings shall be arranged in such a manner that shunting operations upon them shall involve the least possible use of, or obstruction to, running lines. (2) Trap points shall be provided upon goods lines and sidings at their junctions with passenger lines, with the points normally set against the passenger lines and interlocked with the signals. (3) Bay and loop points on line and refuge loops shall be isolated from main through lines. 72 GAZETTE OF : EXTRAORDINARY 11 —SEC

35. Junctions - Bars or other approved devices shall be provided in order to define the effect of junctions, loops, siding connections, crossings and the like

36. Provision for isolation at stations - (1) speed of trains running from stations shall be governed by Rules for all open lines administered by the railway both Government and the non-Government railways and shall be subject also to restrictions relating to standards of interlocking prescribed in the Signal Engineering Manual. (2) At no station where a line has not been provided through running trains shall be permitted the conditions laid down in the second paragraph of rule 4.11 of the General Rules are complied with (3) At any station where there is a speed restriction for running different from the running limits, a speed restriction board should be erected at the first approach signal or where no signals are provided, full braking distance outside the first facing point. (4) In order to maintain safety for through running, points for sidings must not be inserted in the main line or through line, except under approved special instructions in accordance with the Signal Engineering Manual, Part I (5) All passenger running lines shall be isolated from all goods lines or sidings connected thereto. (6) All goods running lines be isolated from all sidings connected thereto. (7) It is not necessary to isolate one goods receiving line from (8) Isolation may be accomplished by - (a) connection to or long siding; (b) the provision end siding; or [30] 73 (c) the provision of trap. Note. - (i) Whichever may be the method for isolation, a starter signal shall be provided, except when omitted under approved special instructions. (ii) When a trap is provided, the trap switch should be located at the heel of the switch in rear of the fouling mark and preferably on the straight. The switch should be in the rail away from the line to be protected. (9) The various methods of isolation are illustrated in the diagrams given in Appendix A attached to these rules and the following instructions shall apply to their use in the case of running lines, namely :- Method A: This method shall apply to cases in which the line on which the train shall run when the points are set for isolation of the through line, is kept clear for the adequate distance prescribed in Rule 3.40 of the Indian Railways (Open Lines) General Rules,

1976. B: When a short dead end siding is provided, it shall not ordinarily be long enough to permit of vehicles being stabled thereon. To obtain 'an adequate distance prescribed under rule 3.40 of the General Rules the points of the dead end siding shall be set for free cross over and against the siding, before a train is admitted on a line trapped by this method. Where it is necessary for the short dead end siding to be extended for the purpose of stabling vehicles, the above rule shall apply, unless a trap is provided on the dead end siding at a distance of not less than 180 metres (120 metres in case of stations provided with multi aspect signalling) from the starter signal where provided or from points leading to the main or freight line. A train be admitted on the running line unless the trap is set and locked against vehicles occupying 2009 GI/2000—10 THE GAZETTE OF INDIA : EXTRAORDINARY the further part of the dead end siding. [PART II—SEC. 5. Mahod C: When a trap is used, a train must not be admitted on to the trapped line unless the trap has been closed, so free train will not be derailed if the driver overshoots the (IO) When Method A cannot be used, and for any reason it is not convenient to use Method B or C and to provide adequate distance by setting the points of the short dead end siding or trap for cross over and against the siding or trap, a sand hump of approved design should be used as a substitute for adequate distance as provided in rule 3.40(4) of the Indian Railways (Open Lines) General Rules, 1976. In that case the length of the siding should be at least one rail length and formation should be made up for a short distance beyond the hump

37. General - (B) The requirements and of Block Instruments shall be in accordance with section 'N' and section 'R' of Chapter Vn of the Signal Engineering Manual) Part I.(2) The requirements of Train Control shall be in accordance with section 'Q' of Chapter VII of the Engineering Manual, Part I. 11—aus 3(i)] 75 CHAPTER VIII RULES FOR THE DESIGN AND INSPECTION OF EQUIPMENT FOR ELECTRIC TRACTION



38. Designs of electric installations - (1) The design of all electrical namely, transmission and distribution lines, substation, switching stations, Over Head Equipment, etc. shall be according to approved standards laid down by the Central Government and the Indian Electricity Rules, 1956 or any other relevant statutory rules for the time being in force. Wherever, any departure from accepted norms becomes necessary, approval of the Central Government shall be obtained. (2) (a) Adequate protective arrangements shall be made to ensure that the public cannot come in contact with the electric equipment on line within the railway premises. (b) Suitable protective screens shall be provided where live conductors pass under or over bridges. (3) The structures supporting overhead equipment shall be designed in accordance with the relevant Indian Standards. The wind pressure to be adopted in such cases shall be generally in accordance with IS 875-64 except when a higher value is prescribed by the State Government, which should be ascertained by a reference to the State Government unless a notification on the subject in connection with the electric installation other than the electric traction on railways is already issued by the State Government. (4) When the distribution system involves overhead wires carried on steel structures including bridges and roofs and a return circuit via running rails or earth, all such structures, masts and associated tracks shall be effectively earthed and bonded or other precautions taken to ensure that contact with the steel work of the structure will not be dangerous to the public and the railway staff. In AC traction earthing and bonding shall be as per the approved Code for Bonding and Earthing. (5) Earthing arrangements at power supply installations shall strictly conform to the Indian Electricity Rules, 1956 and accepted Codes of Practice for Bonding and Earthing for AC traction. (6) No earth wire shall cross any track. Where structures to be connected to an earthwire are located on opposite sides of a track, separate wire runs shall be used for connecting the structures. In complicated areas, structures may be connected to individual earthing stations. (7) When overhead lines transmitting electric power (other than lines

forming part of the railway traction equipment) have to be carried across railway track, the details of the equipment provided in connection with such lines must be designed with the object of minimising danger in the event of breakage and in accordance with the regulations for the Electrical Crossing, 1987. These details must be approved of the Electrical Inspector to the Government of India (EIG) Note - The Chief Electrical Engineer of a Zonal Railway functions as the Electrical Inspector to the Government of India (8) Lighting arresters of standard or approved types shall be provided wherever they are necessary. (9) All component parts of the equipment which carry live conductors shall be provided with devices approved by the Electrical Inspector to the Government of India to prevent unauthorised persons climbing them. Anti-climbing device shall also be provided, wherever necessary, on structures carrying equipment within railway premises. 3(i)] 77 (IO) On both sides of roads level crossings, gauges of suitable design shall be provided to ensure that no part of any road vehicle or its load shall come in contact with overhead equipment. (11) Warning notices shall be erected in conspicuous positions at level crossings and the like indicating to the existence of live electrical equipment

39. Display of caution boards and notices - The following caution board and notices written in English, Hindi and the regional language shall be displayed at the various locations indicated below:- (a) "Treatment for electric shock" boards, giving instructions for of electric shock at all railway stations signalling cabins, Offices of the Station Managers, the Assistant Managers, Senior Sectional Engineers (Permanent Way), the Senior Sectional Engineer (Works), the Senior Sectional Engineer (Signal), Over Head Equipment Maintenance depots, Over Head Equipment Inspection Car Sheds, substations, switching station cubicles, loco sheds and the like. (b) General 'Caution notices' regarding danger of high voltage traction %hres for public at various entrances to railway stations and for staff at prominent places at each station, particularly on stanchions or pillars supporting platform roof. (c) "25 KV cautions Boards" shall be affixed on to the screen erected on foot over and road over bridges. (d) 'Danger' boards on level crossing height gauges. (e) 'Engine stop' boards, at termination of Over Head Equipment in the sections to be energised. (f) "Caution-Unwired turn out" boards ahead of all unwired turn outs or crossovers taking off from wired tracks. (g) "Warning" boards for neutral sections. (h) Boards for "Switching on" and "Switching off" of power at neutral sections. 78 THE GAZETTE OF INDIA : EXTRAORDINARY (PART 11—SEC. (i) "Danger" boards to be installed on Over Head Equipment near watering stations, if any. (j) "25/2 x 25 KV caution" boards at substations and switching stations, (k) "Caution" notices on all diesel, Electric and steam locos, which work on the energised section, including those owned by private parties. (l) "Caution" boards at such signal posts where protective screening cannot be provided for signal and telecommunication staff

40. Protection of private property against inductive effects of AC traction - Under 25/2 x 25K V AC traction, there is a heavy induction on all metallic structures and conductors in the vicinity of track. Inductive effects show themselves on any overhead conductor, such as clothes lines, power line, and the like belonging to private parties running parallel and close to the electrified tracks. Wide publicity shall be given to the effects of the induction, so that special precautions may be taken by private parties concerned against the possibility of electric shocks from conductors running in their premises

41. Approval of energisation of High Tension installations - (1) Application shall be submitted at least a before energization to the Chief Electrical Engineer and the Electrical Inspector of the concerned railways for the following :- (a) Formal approval, if not already received to the design and layout of all high voltage equipment including traction sub-stations, transmission lines, 25kv/2 x 25 kv feeders, switching stations, booster stations, etc ; (b) Approval for energization of High Tension installations mentioned above including Over Head Equipment ; (c) 'The should be accompanied by documents as prescribed in Volume II (Part-I) of the Manual of AC Traction 79 Maintenance and Operation, 1994 (sub-paragraph 2 of paragraph 21007).(2) On receipt of an application under sub-rule(1), the Electrical Inspector shall scrutinise and inspect the design and installations in respect of the following, namely :- (a) The layout and design for substations, Over Head Equipment and other installations for compliance with the Indian Electricity Act, 1910 (9 of 1910) and the rules made thereunder; (b) Inspection of the completed installations, either personally or by deputising his officers for compliance with the safety requirements. (3) After conducting the inspection under sub-rule (2), the Inspector shall convey his approval for the energization of 25 KV/2x25 feeder lines from traction sub-

station to feeding posts, sub-stations, booster transformer stations and Auxiliary transformer stations, subject to such directions as he may consider necessary

42. Submission of application to commissioner - An application shall be submitted to the Commissioner all relevant documents and certificates and notifications mentioned in paragraph 21008 and sub-paragraph 2 of paragraph 21009 of the Manual of AC Traction Maintenance and Operation, 1994, Volume 11 (Part I) alongwith the approval of the Electrical Inspector to the Government of India for energization.

43. Procedure for a energization of traction installations-(1)(i) After obtaining the sanction of the Electrical Inspector to the Government of India for energization under rule 41, the sub-station should be commissioned sufficiently in advance of the energization of Over Head Equipment. 80 THE GAZETTE OF INDIA : EXTRAORDINARY PART 11 —SEC. 3 i (ii) Before energization of the sub-station, full communication facilities should be available and power supply authorities should be ready to give power supply. (iii) On the appointed day necessary clearance certificate should be obtained from the Senior Divisional Electrical Engineer (Construction) and others who had been hitherto working in the sub-station premises to the effect that their staff had been withdrawn and the sub-station could be energised. (iv) After final measuring of the whole installation and check on the satisfactory operation of all equipments including protective relays, the traction sub-stations and other installations may be energised. (2) In addition to giving wide publicity through newspapers and other media, the Station Master shall - (iii) warn all passengers about the danger of 25/2 KV AC Over Head Equipment and not allow them to ride on tops of coaches; advise all diesel and steam engine drivers not to climb on engines when they are under the Over Head Equipment; warn all members of the staff engaged in watering not to climb on the carriages without power being made off and obtaining order of the concerned controlling authority. (3) Energization of Over Head Equipment shall be progressively undertaken starting with 25/2x25KV feeders from the sub-stations to the feeding posts, bus bars of the feeding posts followed by one sub-sector after another. (4) Before running electric rolling stock on the newly electrified section a confirmatory field test for the proper operation of the protective relays shall be conducted. (5) (i) The inspection of the entire section shall be carried out by means [3(i)] of an Over Head Equipment Inspection Car by the Commissioner. (ii) A responsible officer preferably the Chief Project Manager or the Chief Electrical Engineer (Construction) and a Senior Administrative Grade officer of Electrical Department nominated by the General Manager (open lines) should accompany the Commissioner throughout the inspection. (iii) The engineers who had been in charge of the section during construction, the Divisional Railway Manager and concerned Divisional Officers should also be present. (iv) During inspection, particular attention shall be paid to safety and operational aspects of train movements and to see that staff are in possession of statutory rule books instructions books, registers, forms, etc. The Transportation, Electrical, Permanent Way and Signalling and Telecommunications staff are fully acquainted the duties to be carried out after AC traction is introduced. (6) Subject to the inspection being satisfactory an "all concerned message" may be issued by the Commissioner communicating his sanction for the introduction of commercial services under electric traction (7) The signalling and telecommunication requirements in 25 KV 50 Hz AC electrified sections shall be in accordance with the provisions of section 'R' of the Signal Engineering Manual, Part I and Manual for 25 KV 50 Hz AC Traction. Note. - A dealing with the requirements of signalling and installations for 25 KV 50 Hz AC electrified sections are Appendices B and C to these rules. 2009 81 82 THE GAZETTE OF INDIA : EXTRAORDINARY SCHEDULE (See rule 5(2)) [PART 11 SEC. Paragraphs 443 to 451 of the Indian Railways Code for the Engineering Department 443. Plans, Sections and Design for Works -- A set of plans and sections for a project should of :- (j) (ii) (iii) (iv) (v) (vi) (vii) (viii) General Map of the country traversed by the project scale about 25 km. to 1 cm. Index Map, scale about 2.5 km. to 1 cm. Index Plan and Sections. Detailed Plans and Sections. Plans and Cross Section. Plans of Station Yards. Detailed Drawings of Structures. Plans of Junction Arrangements

444. As exceptions to this rule, Index Plans and Sections and plans of stations may be longer than 1200 mm if necessary, to enable all the information to be shown on one sheet. In such cases, however, the width of 840 mm should still be kept to, and the length in excess which however should not exceed 1020 mm should be folded so as to project beyond the edges of the sheets. A Catalogue of maps published by the Survey of India is obtainable from the Director, Map Publication Survey of India, Hathibarkala Estate, Post Box No.28, Dehradun-248000

2. The latest information on availability of maps and aerial of the region would be available from the concerned Regional Director of Survey of India. 445. Throughout each set of plans and sections the kilometreage should be from the same fixed point. This fixed point should, if practicable, be at that end which is in the direction of the nearest sea port with which the line is in through communication by rail, and should be clearly defined on the Index Plan and on at least the first and last of the Detailed Plans and sections. If the line takes off from an existing railway station the zero point should be fixed the centre of the existing station yard, and when it ends an existing station the centre of the survey should be taken as the centre of that station. Each sheet should be plotted in the direction of the through so that the kilometrage may be read from left to right] 446. The datum used for all plans and sections should be Mean Sea Level, and all heights should be referred to this datum in whole and decimals. If any other datum is adopted for temporary use during the progress of the survey the figures referring to such temporary datum should be reduced to Mean Sea Level before being entered on the plans and sections

447. On each sheet should be noted a reference of letter, the name of the railway or section of the railway, the gauge and the scale. The scale may be described in words, and need not be drawn. The north should be indicated on each map and plan by a line not less than 150 mm in length



448. The Index Plan and Section and the first and last sheets of the set of Detailed Plans and Sections should be signed and dated by the Engineer In-charge of the survey. Every sheet should be signed and dated by the officer responsible for its preparation. Index Plan and Section — The Index Plan and Section should be drawn to a scale of 449. 0.5 km. to a cm. horizontal and 10 metres to a cm vertical, the plan being drawn above the section on the same sheet. The Index Plan -- On the Index Plan should be shown all towns, roads, canals, rivers, 450. hills boundaries of states and districts within a distance of 10 on each side of the railway. The centre line of the proposed railway should be indicated by a full red line 0.8 mm. in thickness. The degree and radius of all curves should be figured. The position of each station should be shown by a red block, the name of the station being given. The kilometrage from the "fixed point" should be marked and figured at every and the extent of each of the detailed plan shown. Where practicable, the Index Plan should be traced from the sheets of the Survey of India Map published to a scale of 0.5 km. to a cm. The details in the immediate neighbourhood of the railway being filled in or corrected, if necessary, from the information given by the railway survey. For a districts where a map to the scale of 0.5 km. to a cm. is available, the information required should be to that scale from such other maps or data as can be obtained 451 The Index Section -- The Index Section should show the formation level by a red line; the gradients should be figured, and the height of formation above Mean Sea Level entered at each change of gradient. The position of each important bridge with the name of river and number and size of bridge spans should be indicated, also level crossings with their classification "as special", "A", "B", "C" or "D" class and position of each station with its name and distance from the "fixed point". The kilometrage from the "fixed point" should be marked and figured at every 83 84 THE GAZETTE OF INDIA :

EXTRAORDINARY [PART II—SEC,



FORM 1 [See rule CURVE ABSTRACT SECTION: LAKSHMIKANT PUN-KULPI STATION
 LENGTH: 9.19 km Degree of curvature and radius 1 1. 4.00 Degree (Radius 437.5M) 2. 3.00 Degree
 (Radius 583.33M) 3. 2.00 Degree (Radius 875 M) Total Number of each 2 1 3 2 Railway GAUGE: I .676
 M Length in kilometre of primary curve 3 0.49KM 1.13KM 1.30KM 2.92KM Ratio of Curved Length to
 Total Length of line 31.97% FORM 11 [See rule GRADIENT ABSTRACT SECTION: LAKSHMIKANT
 PUN-KULPI STATION LENGTH: 9.19 km Gradient (compensated) and radius 1 1 in 100 or 1 1 in 101 to
 1 in 150 1 in 151 to 1 in 200 1 in 201 1 in 300 1 in 301 to 1 in 400 1 in 401 to 1 in 500 1 in 501 to 1 in 1000
 1 in 1001 to Level TOTAL Number of each 2 1 2 2 1 9 15 Length in km 3 0.51 0.64 1.00 1.10 5.94
 9.19km 85 Railway GAUGE: I .676 M Percentage to total length of line 4 5.55% 6.96% 10.83% 11.97%
 64.64% 100.00% Steepest Compensated Grade 1 in 3000 (FALL) Longest Continuous length of Grade 0.51
 km Followed by: LEVEL for 0.10 km FORM-m [See Note S(l)(c)] BRIDGE ABSTRACT SECTION:
 LAKSHMIKANTPUT-KULPI LENGTH: 9.19 km Class of Bridge 1 1 . Steel Girder (Riveted) 2. Steel
 Girder Welded 3. P.S.C. Girder 4. Composite Girder 5. RC/PSC/SLAB/BOX (I) R.C.C Slab (II) R.C.C
 Slab (III) R.C.C Slab (IV) R.C.C Slab (V) R.C.C Box (VI) R.C.C Box 6. Arches (Major Bridges) (Minor
 Bridges) Total Clear span in Metre 2 30.50 5.00 3.05 2.00 1.83 3.05 2.90 Total Number of Spans 3 2 1 2 2
 2 3 2 19 21 6.64M 5.17M 11.81M Water way in lineal Metre 4 61.00 5.00 6.10 18.00 3.66 6.10. 8.70
 61.00 47.56 108.56 Loading standard for which designed 5 M.B.G. Loading M.B.G. Loading -do- Railway
 GAUGE: I .676 M Reference to plan in case of Girder Bridges 6 No. B.A-1123 to B.A-1124 O Water
 Way per km. + (Major Bridges): (Minor Bridges): Total: Note 1: "Major Bridges are those having a total
 water way of 18 lineal metres or upwards or having a clear opening of 12 lineal metres or upwards in any
 one span." Note 2: The particulars furnished above are illustrative. FORM [See rule IMPORTANT
 BRIDGES Bridges having a total waterway of 300 lineal metres or 1000 sq. metres or upward SECTION:
 LENGTH: kms Name of River Kilometre- Railway GAUGE: I .676 M Drainage Rise of ordinary Slope of
 flood above low bed per area water Number of each Mean velocity in flood per second Metre 6 Semjona
 area in flood Sq. Metre. 7 Discharge per Second Cub Metre 8 Span Height of under Average depth of
 foundations below 1 terage 2 side of girder Low water (even. Sq. km. 3 Metre 4 Metre 5 Metre 9 No. above
 above low flood water level Metre Metre 12 Metre 13 88 THE GAZETTE OF INDIA :
 EXTRAORDINARY —PART FORM V [Rule 5(1)] BALLAST AND PERMANENT WAY : Section
 Length: 8.78 km RAILWAY GAUGE 1,676 mm. The permanent way consists of 52 kg/90 UTS new rails of
 'Indigenous Make' 13 M long (partly on single rails and partly on 3- Rail Welded Panels) laid on concrete
 sleepers with the density of 1540 sleepers per km) and 50 mm stone ballast with minimum cushion
 of 250 mm under the sleepers

2. All the turnouts to be negotiated by passenger trains are of I in 12 (curved switch) elsewhere I in

8.5 Certified that Tested and Qproved P. Way materials have been used in this section. Note: A brief description to be given of the rails, fastenings, sleepers and ballast provided. Details of dimensions of rails, fishplates etc. should not be given in the case of the standard section. It should be stated whether any of ffe material is second hand and if so, its approximate age should be given. In the case of new rails and fish plates manufactured in India, the name of the producer should be given. If they are imported, the name of ùle county of origm should be indicated. A certificate should also be submitted by the Chief Engineer/Engineer- in-Chief that the materials are of tested and approved quality and comply with the accepted specifications.



FORM VI [See rule STATION AND STATION SITES LAKSHMIKANT RJR-KULPJ RAILWAY GAUGE: 1.676M Name of Station LAKSHMIKANTPUR UDAYRAMPUR KULPI LENGTH: 9.19 Km Class *Engine Changing X=Cmssing F=Ftag 2 x Hatt Hatt from point* 3 61.48 km (from Sealdah) 66.83 km (from Sealdah) 70.67 (from Sealdah) Distance Apan Crossing Engine sites 4 5.35km 3.54km 5 changing 6 Clear length of Crossing loop 7 686.00 M 700.00M Remarks 8 • Note:- These should ordinarily agree with the kilometrage figured on kilometer posts and telegraph posts. FORM [See rule S(1)(g)] STATION ACCOMMODATION SECTION: LENGTH: Name of stations LAKSHMIKANTPUR UDAYRAMPUR KULPI LAKSHMIKANT POR-KULPI 9.19 km Station Building RAILWAY GAUGE: 1.676 M Station Offices sq.M 50.00 9.30 26.10 Waiting Waiting Room sq.M Hall (2nd a.) Sq.M 50.00 9.30 29.67 Toilets Nos Goods Shed sq.M 65 Passenger Platforms Length Height above Rail (Pl) 237.74M H.L.(Common) (P2) 274.40M H.L.(Common) 213.36 M 275.00 M Goods Platform Length NIL NIL Water Suplly for Passengers Hand Tube on both the Platforms 300/200 mm.dia Deep Tubewe" with 50,000 Gallons Capacity O.H Tank One tubewe" with hand Pump at Station One Hand Tubewell on Platform NOTE: (1) In case existing accomrrwdation is to be uüised, indicate so by(a). (2) The particulars shown above are illustrative. o o FORM vm [See STATION SECTION: LENGTH: Names of Station 1 LAKSHMIKANTPUR UDAYRAMPUR KULPI LAKSHMIKANTPUR-KULPI 9.19 km Intec-locked 2 Yes No No INTERLOCKING Non-inter locked 3 Yes Yes SIGNALS Outers Home Isolated 4 Wamersl Distant 5 Yes 6 7 Yes Staners 8 Yes Advance Statler 9 Yes type of Block wod(ing in 10 Singie læ Block One Train Working System Railway GAUGE: 1.676 M Weigh Bridge No.&Capacity 11 Nil Nil Nil NOTE: The fumished in this form are illustrative. FORM IX [See LEVEL CROSSNG ABSTRACT SECTION: LENGTH: No of Location crossing Kilometr Class as ptBsaid in the permanen manual 3 Length of the Guam Reil 4 Width Distance of the of Gate Gates Posts at from right centre angle line of to the nearest center track Length Angle of Radius of Interlocking of Xing centre line of gates provided Mraight between of road on with signals portion Gates approaches or provision 1 2 Wicket Gate or not 7 of road outside Gates 8 within (50M) of telephone of the etc. against centre lines trains line of Road 5 6 9 of track 10 running through crossing 11 Gradient of Road way(a) between gates(b) out side gates 12 Width of metalling between gates 13 Distance of gate lodge from (i) centre of the nearest track (ii) edge of road metal 14 Whether road traffic has been wamed about the proximity of level crossing 15 RAILWAY Gauge: 1.676 M Provision of numble strip/speed breaker 16 o til 93 [See rule 5(1) (j) I BRIEF PARTICULARS OF TRACTION INSTALLATION Sectim - Imgth Tundia-Delhi 292 RKM Northern Railway Gauge 1676 mm l. track lans electrified section — 650 2. Brief particulars of traction system:- The type of Over Head Equipment on main line of the section is of the simple polygonal with swivelling brackets having taisions in the conductors regulated automatically. The in the catenary and cmtact wire is kept as 1000 kgf each. The cmtact wire has beal gival a presage of 103mm for a span of 72m (suitably reduced for smaller spans). On secondary lines and yards the Over Head Equipmelt is of fixed type and unregulated. The contact wire is grooved hard drawn copper with 107 sq. mm cross section supported by means of copper droppers from catenary which is standard (19.210mm) with 65mm cross section made up of cadmium having 80% The maximum wind pressure for design of masts and foundation has been takål as 112.5 kg/sqm. maximum spal adopted on main lines is 63 m. The Over Head Equipment has beal desgled for a maximum speed of 160 kmh. The power su.Qply is takal from UPSEB at a single point viz. Aligarh from where railways own transmission lines are run for feeding the sub stnions Hathras, Khurja and Sahibabad. At each of the sub •Nations two power transformers 12.5 MVA, 132/25 KV are installed, one of æm acting as standby. Standard arrangemafl of having neutral sction 41m in Idigth has beal two sub statims for s.aratim of phases. From sectiming and isolning facilities sub sectioning and paralleling stnims have bea provided. All the switching qeratims at power su.Qply statims are ranæe cmtrolled from a single remote control catre Tundla. The Railway will provi& suitable in%nnnim as per sample. 94 THE GAZETTE OF : EXTRAORDINARY [PART 11—SEC. 3(i)] FORM X1 [See POWER SUPPLY NSTALLATION ABSTRACT SECTION LENGTH: No. 1 2 3 4 5 6 SECTION: LENGTH: S.No. 1 1 2 : Tundla -Delhi 292 km Type of Switching Stations 2 Traction substation and feeding stations Sectioning and paralleling stations Sub-sectioning and paralleling stations Sub-sectioning stations Booster transformer stations LT Supply transformer stations Total Nos. 3 3 3 14 Nil 12 23 FORM xn Location and Nearest Railway Stations 4 (List to be attached) (List to be attached) RAILWAY GAUGE: 1.676mm Remarks 5 rsæ MAINTENANCE DEPOT ABSTRACT Tundia -Delhi 292 km Location 2 km 1370/15-16 km

1454/7-8 Name of the nearest Railway stations and distance therefrom 3 Hathras 2.0 kms towards Delhi Sakur Basti 1.5 km towards Delhi Whether OHE maintenance car (tower wagon provided or not 4 Yes RAILWAY GAUGE: 1.676mm Remans 5 FORM xm [See nde S(l)(m)] RESTRICTED OHE CLEARANCE ABSTRACT SECTION: Tundla-Delhi LENGTH: 292 km A. Overline %uctures RAILWAY GAUGE:I .676M Minimum Static Remans S.N0. 1 Location of Overline Structure 2 Type of Structure 3 Clearance from R.L.to Bottom of Structure 4 Height of Contact below the structure 5 Whether Catenary is anohoted or Freely Running Below/Above the Structure 6 Clearance between 25 KV Live Parts & Earth- 7 8 B. Location of 01-iE where specified (2.0 m) working clearance are not available S.N0. 1 1 Location 2 km.1172/3-4 Up line Type of near Actual distance Remans rest earther between live part part 3 OHE structure at location On line and earth 4 5 FORM XIV (See rule ELECTRICAL CROSSNG OVER ELECTRIFIED TRACKS *AYSTRACr SECTION : LENGTH : S.No. 2 Locathn 2 1321/3-4 Tundla -Delhi 292 km. Brief Tech.PattiaJlars Inculding vottage 3 Three phase single citu.ait Whether with Guards OR w/o Guards 4 w/o with guards Owned by 5 C*SEB Nigam Electric Supply Whether clearence as per the regulations for Crossing available 6 No. Yes RAILWAY GAUGE•I .676mm Remarks 7 Relaxation given in terms of ct.22 of the regulations. The height of lowest conduãor from Rail level is 11.4M 1327/13/14 Double circuit three phase 11 KV inside station area O til 11 3(i)] 97 1 2 3 4. 5 6 7 8 9 FORM XV [Nle 5 (3)] LIST OF QUESTIONS AND ANSWZRS SECTION Length in kn Questions 2 Are there any sections of the line over which special to ensure safe working are necessary, owing to sknrp curves or steep grades? What widths of formation have been adopted: (a) in ban.k, (b) in cutting (exclusive of side &ains) ? Have any special precautions been taken against slips in cutting and embankments ? Are side drains to the formgüon and catch water drains above the side slopes, provided for all cuttings ? Are trolley refuges necessary in any long cuttings, and if so, have they been provided at suitable intervals ? Are there any tunnels not fully lined ? If so, are they safe without further lining ? Do any portions of the sides or roof of any tunnel infringe maximum and minimum dimensions ? Have adequate facilities been provided to enable workmen to escape from an approaching train without difficulty ? Have the tunnels been properly ventilated ? . Answers (3) 2009 GI/2000—13 98 (1) 10 11 12 13 14 15 16 17 18 THE GAZETTE OF INDIA : EXTRAORDINARY (2) Are the bridges/elevated structures desigled in accordance with the provisions contained in Bridge Rules, having regard to the standards of loading which they are intended to carry? Full particulars should be appended of any case of departure from the requirements ? Has care ben taken to provide suffcient waterway to guard against scour ? Are free board and vertical clearance tmder bridge provided according to bridge sub structure code? If not, quote sanction number with date. Has due notice been taken of Railway affected works in the catchanent of the wataways and all necessary safeguards provided for wash aways and breaches due to breaching of tanksmunds ? Have the waterways provided been formally approved by the Local Government? Have suffcient head-way been provided for crafts plying or likely to ply, on navigable waters ? Are there any bridges intended for use by the public ? (a) If so, in the case of a road or pathway clear of the track, have adequate handrails or parapets been provided ? (b) Or in the case of a passage cornmon with the track, have suitable gates across the roadway, and siglals for trains been provided ? Are long bridges provided with adequate facilities to enable workmen to stand clear of an approaching train without difficulty ? Have trolley refuges been provided if necessary ? [PART 11 —SEC. (3) 3(i)] (1) 19. 20 21 22. 23 24 25 26 27 99 (2) the wooden sleepers, adequately protected from Are all girdz bridges provided with guardrails? Are there any bridges where it is necessary to pmvide guard rails but these are not yet provided? Has information of the nature and depth of the foundation and hid&o work irr bridges, culverts and other structt.res likely to be exposed to scour, been recorded on the structures themselves ? Have urplusing been made for canals crossing track ? Have completion drawings of all important bridges and other structures been prepared ? Do these contain all information regarding foundations and other hidden work as actually executed? Where are they recorded ? LAND BOUNDARIES AND Have the botmdaries of the Railway land been properly defined by suitable marks, which can readily be found and identified ? Have complete and accurate land plans beal prepared and do they bear the signatures of the responsible Civil and Railway Officer concerned? Where are they recorded ? LEVEL CROSSNGS Has the L.ocal Govenrnalt approved the sitting and classification of the level crossings ? Have all level crossings been constructed in accordance with the Standard Sepcifications for level (vide Chapter IX of P. Way Manual) according to the class of crossing ? L?ART 11—SEC. 3(i)] 100 (1) 28. 29 30 31 32 33 34 35 36 37 THE GAZETTE OF INDIA : EXTRAORDINARY (2) If not, at

which crossings and in what respects do they fall short of them? VEHICLE AND GRADIENT POSTS Are proper Kilometer and gradient posts provided? (8) Are the telegraph posts numbered, and (b) can the figures be read with ease from passing and trolleys? From which fixed point has the Kilometrage been reckoned? BALLAST AND PERMANENT WAY Is the ballast provided of good quality and sufficient in quantity for the traffic anticipated? Is there any departure from permanent way manual? Is the permanent way properly laid, compliant with maintainings, and is it suitable for the proposed speed & loads? Are there any especially sharp curves at which checkrails are considered necessary? Have they been provided at all such curves? Are the curves laid out with transition curves at each end? Have all curves been adequately super-elevated for the speeds in force? Is the super-elevation to be given to each curve indicated at site? STATION FACILITIES Have Maximum and Minimum Dimensions in station yards been observed? Has suitable accommodation for passengers been provided at all stations? Have latrines been provided on platforms, and are they properly situated, constructed and lighted? 3(i)] (1) 38 39 40 41 42 43 101 (2) Are there proper arrangements for drinking water? 3) for supplying Is foot over bridges or sub-ways for crossing the line provided where necessary? Are any landings provided? Are the rise and tread of steps properly proportioned? *If the total height of steps exceeds 4.57 metres, it is usually desirable that there should be an intermediate landing not less than 1.22 metres in length. Are the names of stations shown both in Hindi and English and in vernacular language, in large and distinct letters in conspicuous positions so as to be seen readily by passengers in the trains during day and night? Are clocks provided at all block stations? BLOCK WORKING Have the requirements and recommendations for signalling interlocking, and the for and interlocking installations of the rules, and the appendix thereto, fully complied with, to the class of signalling and interlocking installed? If not, in what respect the arrangements provided fall short of them? Have the requirements and recommendations for signalling telecommunication in with instructions for installations of equipment in 25 kV 50 Hz electrified sections been complied with? If not, in what respect be provided fill of them? 102 THE GAZETTE OF : EXTRAORDINARY (PART II) SEC. (1) 44 45. 4-6 (2) STATION WORKING Is provision made, whether by points or other means, to prevent, vehicles standing on sidings, from fouling any running line? Are there any stations on a steeper gradient than 1 in 400? If so, what special safety devices are adopted and / or special rules enforced at those Stations? * What safety sidings are provided? Are they suitable? @ Are any others necessary? *Note : No station should be constructed nor should any siding join a passenger line on a steeper gradient than 1 in 260, except where it is unavoidable, and then only with the previous sanction of the Railway Board obtained through Commissioner of Railway Safety, when a slip siding or other arrangements is made, sufficient to accidents. (QN# 2: At any station situated in the immediate of an incline steeper than 1 in 100 fringing away the station, a catch siding in the former case, and a slip siding in the latter case, be if necessary, in a suitable position. The take off points to a catch siding or a slip siding should normally be set and locked for the siding, except where required to be trailed "For the purpose of the footnotes marked* 1 and 2 the definition of a station yard as given in item 2 (3) 3(i)] 47 48 49 50 51 52 103 (2) of Chapter 11 of Schedule of Dimensions shall apply". Are station yards so arranged that shunting past junctions or level crossings may be avoided as far as possible? Are shunting necks for goods working provided in large yards, where shunting operations cannot otherwise be carried on without interfering with incoming trains? ROILING STOCK Is the following information noted in a conspicuous position on each vehicle? (i) Passenger Carriages- The maximum number of passenger intended to be carried in each compartment of every description of carriage? * (ii) Goods wagons-The tare weight of the empty wagon (including wheels, axles and axle boxes and springs) and the maximum load, in tonnes, which the wagon is constructed to carry? Are means for communications between passengers and the guard, provided in all trains carrying passengers? ** Have all engines and tenders, and all vehicles intended to run on passenger trains been fitted with the vacuum/air brake? Are all locomotive & motor coaches provided with: (a) Cattle guards (b) fog power headlights (c) Other prescribed safety equipments. *Note: This information should be in the vernacular language as well as in English and Hindi. 104 [PART 11 —SEC. (1) 53 54 55 56 57. 58. 59 GAZETTE OF INDIA : EXTRAORDINARY (2) * *Except in the case of complete or partial failure of vacuum, trains carrying passengers may run without such means of communication, only in accordance with general Rule 4.18. Are suitable arrangements made at all stations for the booking of passengers? Are suitable weighing machines provided at all stations open for goods/parcel booking? Are time and fare tables placed in a convenient position for inspection by the public at each Are these documents clearly

exhibited in Hindi & English and also the vernacular language of the district ? Is a copy of the general rules for regulating the working of the railway available for at every station ? Is every station provided with station diagram, station working orders, coaching and goods tariffs, and all other necessary manuals or instructions, forms and registers for the work of the station ? Do the working orders comply with all special conditions with at each station ? the Rules for the Design of equipment for Electric Traction (Vide Chapter VIII of these rules) individually and fully complied with ? If not, where and in what respect, do the arrangements provided fall short of them? What provision of Medical First Aid equipment has been made for use in case of accident ? 3(i)] 105 FORM XVI [See rule S(4) I CERTIFICATES TO BE GIVEN BY GENERAL MANAGER I do hereby certify :- (i) that the Maximum Dimensions for railways in India have in every case been worked to, with the exceptions detailed in the statement herewith annexed. * Also, that the Standard Dimensions will be observed in future, and no work or structure infringing the Standard Dimensions will hereafter be permitted without sanction of the Central Government. (ii) that each bridge is of such design, dimensions and construction as will enable it to bear the dead load of the structure itself (with flooring, roadway, permanent way etc. complete), and in addition the equivalent of the live loads specified in the rules prescribing Standards of Design and loading for Railway bridges, without exceeding the maximum permissible stress on the available material in any member or portion of the structure. (iii) that more than two engines shall not under any circumstances be allowed at one time on the same track of one span of any bridge. (iv) that every coaching vehicle constructed or procured for the use of the railway in mail and passenger trains is, and shall be provided with vacuum/air brake and effective means of communication between passengers, guard and driver. Note: This item of certificate is not necessary for those lines on which the use of vacuum (or air) brake has not been insisted upon. (v) that one compartment or such number of berths or seats, as the railway may deem fit, of a second class carriage of every train carrying passengers shall be reserved for the exclusive use of females. (vi) that the shall be worked on the system known as Absolute Block "in accordance with section Chapter VIII of the Rules for Railways in India 2009 GI/2000—14 106 THE GAZETTE OF INDIA : EXTRAORDINARY [PART 11 —SEC. 3 showing the cases in which the Maximum and Minimum dimensions have been infringed, full details for each case must be given, in the form (Form XVII) with the statement of the necessity for such infringement and a reference to the authority under which it was permitted. If there have been no infringement of the minimum dimensions the words, "with the exception detailed in the statement herewith annexed", should be omitted or struck out (vii) that no electric equipment be used for the public carriage of passengers without due regard to the public safety the rules for the inspection of equipment for electric of Chapter VIII of these Rules) have been complied (viii) that the telecommunication equipment have been installed according to the approved and safe for use (ix) has been agreed to the Commissioner of Railways and on his recommendation and all supplied or altered in) by him. I bear my # To be my where applicable. [Sd/- . The General Manager FORM [See rule INFRINGEMENT OF MAXIMUM AND MINIMUM DIMENSIONS SECTION: Sl.No. Name of *ich infringe RAILWAY GAUGE: I .676 M Existing Amount of Prescribed maximum Dimension infringe- and Minimum Dimension \$ gement Particulars of to Infring- ment & Remarks \$ Dimension end Kilometer 4e Che Aer/ Item Maximum & Minimum FORM xvm 17(6) and DEFLECTION TESTS OF BRIDGES SECTION: Date of Tests... .. LENGTH: Desai \$ion of Test Load(Including Engine No.)... .. Bridge Number 1 Railway GAUGE: I .676 M Kilometer- Material of the Clear Span between bearing plates 4 Overall Speed of Test Load EUDL 7 Design Ratio of Den of 5 train in M.M 8 load EUDL Design for B.M B.M to 2 girders 3 9 test load B.M 10 Reduced Deflection under design Speed 11 theoretical (calculated) deflection (approx.) under the *ned load 12 108 LOOP MAIN LINE SIDINGS MAIN LINE LOOP MAIN LINE LOOP MAIN LINE LOOP MAIN LINE LOOP MAIN LINE GOODS LINE OR LOOP MAIN LINE MAIN LINE THE GAZETTE OF INDIA : EXTRAORDINARY APPENDIX A I See rule 36(9) | DIAGRAM ILLUSTRATING METHODS OF PROVIDING (a) Adequate distance of 120 / 180 mts or (b) Or Adequate distance under GR 3.40 No stabilizing [PART 11 — SEC. 3(i)] Or TRAP 180 m or 120 m in multi aspect TRAP (c) or or LOOP LINE T R Ap 3(i)] 109 APPENDIX B [See rule 43 (7) | CATECHISM FOR SIGNALLING AND INTERLOCKING INSTALLATIONS INSPECTION AT SIGNALS: (1) Are all running signals controlling trains placed in such a position and at such a height above rail level so that they can be clearly seen by Drivers in sufficient time and be readily distinguished by night or by day from the subsidiary signals? (2) Are all signals constructed so that their normal position is at "ON" or most readily visible, and that stand at or return to the

posmn in case of failure of part of the signals or their connections? Note: This paragraph does not apply to automatic signals in the normal position of which is "OFF" (3) Do all signals come fully "OFF" when worked and return freely to the "ON" position? (4) In the case of slotted or controlled signals, can the signals be freely returned to danger by either of the controlling agencies? Note: This paragraph does not apply where signals are controlled by key transmitters or similar form of control. (5) Are signal counter weights, where possible, fixed out of reach? (6) Is the facing side of the arms of all semaphore signals (including miniature and disc signals) painted the same colour as the light exhibited in the "ON" position? 110 GAZETTE OF INDIA : ORDINARY PART - II - Section 3 (1) - The following provisions shall apply to signals. (7) Are signals in the fixed "ON" and distinguished by inverted crossed bars item less than 1 meter long and 100 mm wide? (8) Are signals of standard type and comply with requirements laid down in the General Rules and have passed by a Signalling Committee? (9) (i) Are all signals, the front light of which can be from the point from which are worked, provided with a small white light which is actually necessary and visible when the signal is "ON"? Also is the fixed green of the lantern, which is used by it, provided with a white back light? (ii) Do all the distant signals in multiple area two back in the "ON" position and in any other case where the distance between the signals is more than one back light in the "ON" position? Colour of the signal must not be the same as the back light of the signal. (10) Do miniature and dwarf signals, used to control the same route and back light, as are prescribed for running signals. (11) Are the lenses small to make them distinguishable from running signals? (12) Are signal lamp brackets on the post, and is suitable provision made for lighting and cleaning lamps? (13) If any signal is placed more than 180m away from the working point it controls, is arrangement made to keep the points locked until the train has passed them? (14) Are all signal arms placed on the left-hand side of the post as seen from the direction of the train which signals refer? (15) Are the signal arms placed on the left-hand side of the post as seen from the direction of the train which signals refer? (16) Are the signal arms placed on the left-hand side of the post as seen from the direction of the train which signals refer? (17) Are the signal arms placed on the left-hand side of the post as seen from the direction of the train which signals refer? (18) Are the signal arms placed on the left-hand side of the post as seen from the direction of the train which signals refer? (19) Are the signal arms placed on the left-hand side of the post as seen from the direction of the train which signals refer? (20) (a) Are the signal arms placed on the left-hand side of the post as seen from the direction of the train which signals refer? (21) Are the signal arms placed on the left-hand side of the post as seen from the direction of the train which signals refer? (22) Are the signal arms placed on the left-hand side of the post as seen from the direction of the train which signals refer? (23) Are the signal arms placed on the left-hand side of the post as seen from the direction of the train which signals refer? (24) (a) Do all signal lights show red in the "ON" position, or yellow or double yellow in the case of distant signals; or no light in the case of calling on signals? (b) Do all running signal lights show Green in the "OFF" position in two aspect signalling sections and yellow double yellow/green in multi aspect signalling sections? (25) Are signals where necessary guarded? 12. INSPECTION AT THE POINTS: 1. Is the locking of working points such that the points cannot be or become unlocked while a train is passing over them? i.e. (a) are lock bars provided of a length exceeding the greatest distance between any two adjacent axles likely to be used on the line or alternatively is point lock lever electrically controlled by circuit? (b) in the case of key locks, are the locks either under the rail or if not placed under the rail is the arrangement such that the key is used to release the signal and that it cannot be brought back to the "ON" position? Is the release of the working point lock depends the correct operation of lock bar where used, and is it impossible for the bar to be passed over a train is passing over it? Are the locks of a standard pattern made? Are fixed 113 4. 5. 6. 7. 8. 9. such a manner as to ensure the necessary rigidity and are key sufficient large and strong to minimise the chance of their being mislaid or broken? Do key locks fitted to facing points passenger running lines lock both switches? Are switches adjusted to come tight against stock rails? Does the insertion of a 5mm obstruction piece between the switch and stock rails 150 mm from the toe of switch prevent the points being locked and prevent the relevant signal from being taken "OFF", the giving of which is by the locking of the points. Do facing lock plungers clear the stretcher blade when the plungers are unbolted and in the event of there being an obstruction the points, it is impossible for the point lock plunger to enter the stretcher blade and for the point lock lever to be forced into its normal or reverse position? Are all facing points fitted with a gauge tie plate where steel sleepers are provided for the toe of the

switches, and are provided with split stretcher bars or other fitting giving equal security? Are all point locks and detectors securely fixed? (a) Are detectors fitted to all facing points and they efficiently detect with switches the signals controlling the of over arm? (b) cases where the lock and switches are actuated by the same lever, do detect the mechanism as well as switches? 10. Are trailing point on passenger running lines used in the facing 2009 GV2000—15 114 I. THE GAZETTE OF : EXTRAORDINARY [PART 11 SEC. direction for shunting movements which are not fitted with facing point locks detected with the relative shunt signals? 11. Is it possible for any detector slide to enter a notch other than that for it?

12. Do point indicators show the prescribed indications i.e. while for the straight and green out in both directions and where fitted to track to rails where these are still in use, red in (frections the track is open or the derail is on the line; both directions when the track is closed or free derail is off the line

13. Where the point indicators of the directional type have been provided, has this been done under approved special instructions? m. INSPECTION ON THE TRACK : I

2. Are all frough lines isolated from each other, from other running lines and from all sidings? Are running lines isolated from all sidings and goods lines, either by —(a) trapping into dead ends taking off the sidings or goods (b) derailing switches, or derails placed on the lines giving access from the sidings or goods lines, to the running lines? Note: - The use of details is now obsolete. ones however, continue to be used but when they require replacement, trap should be substituted Are dead ends traps, derailing switches or derails where these are still in use, so locked as to prevent any possibility of the running 115 2. 3. 4. 5. 6. 1. line which have been taken off? Are the dead end traps, derailing switches or derails where these are still in use, fitted with indicators, or are they protected by signals? Are these dead end derailing switches or are these are still in use, placed in such a position as to ensure that any vehicles there may be derailed by them shall not foul my running line? (i) Are all points worked by rodging within a distance of 320 m from the lever operating arm or in case of facing point on a passenger running line operated and locked by the same lever within a distance of 180 m? (ii) If the distances are greater than those are specified above, are within 460 m and 275 m respectively, and are a stroke of not less than 200 mm provided the lever Is the rodging efficiently laid and properly compensated where necessary and means for adjustment provided? Are all signal connections efficiently installed and means for adjustment provided? IV INSPECTION ON THE CABIN OR AT THE LEVER* Is the signal cabin provided with the following? :- (a) A clock in cabins where train movements are registered (b) A diagram correctly representing the of the points and signals worked from the cabin in their position and the number of the point and signals? Lights so arranged as not to be mistaken for running (c) 116 I. 2. 3. 4 5. 6

7. THE GAZETTE INDIA : EXTRAORDINARY signals or interfere with them. Is there sufficient space in the cabin to allow the cabin man or operator of movements for manipulating the levers or other apparatus in the cabin? Is the gear leading off from the cabin or frame securely fixed? Are the levers painted with distinguishing colours and in addition to its own number does each lever bear the number of the levers, which must precede it, and in the proper order? Is the cabin so located and built as to enable the cabin man to have the best possible view of all points and signals, the working of which he is responsible for and also for all under his control? Are all signals, which are not visible from the cabin or frame electrically repeated? If so, does the repeater free light as well as the arm? Have instructions for been issued to the staff and included in the Railway Working Instructions, and are they sufficient? Is the Station provided with mechanical or electrical of the Home and Last Stop Signals? {E—SEC. V. TEST TO MAKE THE LEVER CABIN OR AT THE LEVER FRAME: Note: It is essential that of it must so effected the which tested from the cabin or frame by pulling the levers for each combination allowed by the locking table and checking the security of each such combination by attempting to infringe it. 3(i)] 1. 2. 117 Is it possible to take off conflicting signals at the same time? Is it possible to take off a signal until - (a) all points on the running line including overlap are correctly set and the facing points locked? (b) all points, giving access to the running line from sidings and goods lines, are set against the running line? (c) Level Crossing gates, if included in or controlled by the interlocking, are locked across the roadway? a signal lever, when operated locks or back locks as (d) necessary, the levers operating the point and gate locks referred to in this paragraph? 3. When all signals are "ON" are all points, which would be locked by the taking off of such signals, free for shunting purposes? 4. Is it possible to take off a signal until all the relative stop signals in advance have first been taken off and when off does it back lock such signals? 5. Does the locking in the frame correspond with that shown in the approved locking table? 6. Is the locking strong,

durable and accurate, i.e. can any tQpet enter a notch other than ffat for which it is intended, or can the locking be forced? 7. Does the locking in the lever frame act on the commencement of the movement of the lever in case of direct locking type of lever frames pressing the cdch handle. in case of catch handle/DW type of lever frame? 8. Is release locking not effective before the completion of the movement of the lever? 2009 GI/2000—16 118 THE GAZETIE OF : EXTRAORDINARY [PART 11—SEC. B. AL»ITIONAL CATCHISM POWER OPERATED Pom•rs AND SIGNALS - These nales must be followed in conjuncão with those laid down in âe catechism for signalling and i*Etallations so far as they are Qplicable to power working

1. SIGNALS : 1.2. 3

4. Is âe mechanism ease weather proof and protected form unauthorised interference? Do indication contacts close if ffe arm is more -+or-5 degrees from "ON or "OFF" position? Is the signal and hold off mechanism so constructed, that in the even of a failure, the signl shall go to the "ON' position? With the exception of motor commutdors, etc. is a surface leakage distance of not less than 6mm provided between any metallic part of the mechanism carrying currant and my other metallic part thereof? The follovving shall apply to colour light signals only. Are the signals so bright as to cause confusion in reading at night? 5. When lamps are operated at normal voltage, is the range (on a 6. straight track) of signals used to govem high-speed trains, not less than 200m on a clear day widi a at or near its zenü? Are the signals so bright as to cause confusion in reading at night? 7

8. Does the signal give a distinct indcation to drivers when approaching or stopped at a signal? 11.PONIS Is die switch operamg mechanism of substarffal desiY) securely 1. fixed and protected from unauthorised interference? Is the mechmism provided with means for emergency operation 2. in the event of a failure? 3. Does the use of the bank* or other apparatus for emergensy operation disconnect the supply to the motor and prevent clearance of signal for which such poinG are required to be set. Wiff the exception of motor commutators, is there a surface 4. leakage distance of not less than 6mm provided between any 11—uos 3(i)] 5. 6. 7. 8. 1. 119 exposed metallic part carrying current md any other metallic part of the mechanism? Is the mechanism so constructed that it can be stopped reversed or obstructed at any point of iG movement with damage? Is the mechanism so constructed that it cannot give a "Normal" or 'Reverse" indication, unless the closed switch be within 5mm of the stock rail and in case of facing points the switches are properly locked? In order to prevent the movement of points while a train is passing over âem, are facing points provided with a lock bar, (alternüively) with track circuit locking of the point lever? Where ffe movemenG of trains over âe poinG are not within easy visibility of the cabin, is of the section between âe stop signals leading over Nie points and die fouling point ahead of such points, electrically indicated in the cabin? m CABm AND:LEVER : 2. 3

4. In the case of power interlocking frames, is the lever frame mechanism completely enclosed with removable covers giving free access to all pare and provision made for securing such covers against unauthorised opening? Have all metallic parts carrying current, not less than 6mm surface leakage distance betweai them and any other metallic part _ofthe mechanism? Are the levers operning power worked points provided wiff "Normal" and "Reverse" indication locks, adapted directly to prevent the {ill movement of the lever, tmless the point mechÜlism has made the required movement and the poins are in a position corraponding to that of ffe lever and in case of facing poine umless th%z are securely locked? Note.- Thiss test need not apply where approved alternative electric locking is provided Are levers operating power worked SiN provided with "Normal" indication locks, adopted directly to prevent die full retum movement of the lever to the normal position, unless die arm has returned to the "ON" position? 120 THE GAZETTE OF INDIA : EXTRAORDINARY ART 11 SEC. 5. 6

7. Note.- This test need not apply to a mechanical lever frame, if the signal is at the place of operafon through an arm and liölt repeater. Are all electric locks mechanically replaced to the locking position? Is all the wiring between different parts of the apparatus made with suitably insulated wire and effciently protected? Is the lever frame properly earthed and are effcient safeguards provided to prevent injury to the operator, in the event of a short circuit or other similar circumstances? IV CABLES AND CIRCUITS : 1. Do all main cables terminate in properly sealed boxes? 2. Are circuiß controlling operating and indication of signals so arranged, thm as far as practicable, a cross connection or a short circuit on any of üle vires,

cannot give a false "Clear" indication? 3. Are circuits controlling the and indication of points so arranged as far as practicable, a cross connection or a short circuit, cannot the switch, or give a false indication of the position of the points? 4. Is the battery or power supply for line circuit, as far as practicable, arranged at the end of the circuit farthest from the operated point? 5. (a) Are all main track circuits as far as practicable so arranged as to provide the best protection against broken rails, points crossings, etc.? (b) Are the adjacent track circuits staggered in polarity? 6. Are sidings and junction tracks circuited up to the fouling mark or sidings derailing where this is still in use? 7. Are hand worked switches, in or leading to automatic signalling territory, equipped with a circuit controller operated by the normally closed switch

8. Are such switches electrically locked by the approaching track circuits to prevent their movement in the face of an approaching train? 121 APPENDIX -C rule 43(7)] CATECHISM FOR SIGNALLING AND TELECOMMUNICATION INSTALLATIONS FOR 25 KV 50 HZ, PHASE AC ELECTRIFIED SECTIONS SECTION-I - SIGNALS : 1, 2.3. 4. 5

6. Are the signals located in accordance with the approved instructions as per Manual of Instructions for Signalling and Telecommunications Equipment in 25 K V, 50 Hz AC electrified sections? Have the protective iron screens as required for signals/fittings within 2m of live conductor/parts been provided and earthed? Where it is not possible to provide protective iron screens, has a caution board been provided on the signal post in accordance with the approved instructions? Has the "Signal Sighting Committee" certified that the driver's view of signal is clear? Have only multi aspect signals been used in colour light signalling area? Is the AC power supply arrangement for the colour light signals of a type approved for Railway Electrified areas? SECTION-10N-n - POINTS : Have the rodding transmission of points and other apparatus been insulated as per the approved instructions? SECTION-10N-m - ELECTRICAL SIGNALLING EQUIPMENT: 1

2. Does design of signalling equipment and the circuits used in Railway Electrified areas provide for a safety factor of 1.5 against AC interference. Has it been ensured that the signalling equipment not suitable for Railway Electrified areas on external circuits like banner type indicators, Luminous indicators, telephone type relays, electrical lever locks, rotary key transmitter, DC neutral polar relays, 250 ohms DC neutral line relays and door coils of IRS block Instrument etc. have not been used? 122 3. THE GAZETTE OF INDIA : EXTRAORDINARY [PART 11 —SEC. Has it been ensured all stick relay have at least 4 front and 4 back contacts and their pick transfer time is not less than 300 milli seconds? SECTION-10N-1v - WIRING OF CIRCUITS: 1. 2. 3. 4. 5. 6

7. Have all telephone circuits, except cabin to cabin and cabin to ASM circuits, which be retained on signalling cable, been transferred to separate underground telecommunication cable? Have all overhead wire circuits been shifted or cabled as per the approved instructions? Has it been checked that the voltages induced due to parallelism in the cable under short circuit conditions are within safe limits (limits specified by the Consulting Committee of International Telegraph and Telephones)? Has it been ensured that the earth return circuits are not retained and have been replaced by metallic return circuits except the block circuits? Has the principle of double cutting been used for all external signalling circuits? Have the external circuits and batteries been isolated from internal circuits and Has it been ensured that the induced voltages in the length of inter cabin telephone circuits in signalling cables does not exceed 60 V? SECTION-V - BATTERIES: 1. Has it been ensured that power supply for internal and external circuits and for each block instrument are isolated? 2. Has it been ensured that the battery for signalling equipment is separate from the battery for telecommunication equipment? SECTION-10N-V1 - 1. 2

3. Have the lever frames and other equipment been earthed in accordance with the approved instructions? Has it been checked that no earthing pipe is less than 3 m away from any other earthing pipe? Has it been tested that the earth resistance does not exceed 10 ohms for the signalling equipment and 1 ohm for telecommunication copper cable earth? 11-vug 3(i)] 4.123 Has the screening of the telecommunication cable terminated at the signalling points and repeater stations been earthed in accordance with approved instructions? SECTION-Vn - 1. 2. 3. 4

5. Has it been ensured that track circuits are of approved type? Have measurements of DC track current been taken before installations of DC single rail track circuits and whether these are within permissible limits? Has the longitudinal and transverse bonding in track areas been provided as per the approved instructions? Have the DC single rail track circuits of closed type been installed in

accordance with the approved instructions? Have the measures like surge discharges (intervals off discharge) been provided on track circuits, Where required, as per the approved instructions? **SECTION-N - BLOCK INSTRUMENTS: 1. 2. 3. 4. 5. 6**

7. Are the block instruments installed of a type approved for use in AC electrified sections? Have block filters for single and double line block, instruments been provided in accordance with the approved instructions? Are the filter units of an approved design? Have the line terminals of block filters been painted red to caution the maintenance staff against high voltages? Where a block section falls between an electrified and non-electrified section, has it been ensured block filters have been provided for block instruments at either ends of such block section? Have the block telephones been provided a separate pair of conductors in accordance with the approved instructions? Have the block circuits been provided on underground cables as per the approved instructions? 124 8

9. THE GAZETTE OF : EXTRAORDINARY (PART 11 SEC.3(i)] Have position polarised relays of SGE block instruments been provided in accordance with the approved instructions? Have the block release and advance starter of block instrument been provided in accordance with the approved circuit? IO. Has it been ensured that the circuit from a non electrified section approaching and electrified and vice versa been cabled for a length of 1 km beyond the sections. **SECTION-X - GENERAL SAFETY: 1. 2. 3. 4. 5**

6. Has chart on of treating electric shock been displayed in cabins and relay rooms, etc? Has the rubber matting been provided in relay rooms, repeater stations and cable huts etc. as per approved instructions? Have special instructions been issued to the personnel about the accessible parts of the installation and apparatus in free repeater stations and cable huts, connected to the telecom cable are likely to attain an induced voltage of 150 V AC under 5 normal working conditions and have such parts of installation and apparatus suitably marked to indicate this? Have the metallic cabinets/covers/frames of telecommunication equipments provided in railway electrified areas been earthed properly? Are fire protective devices installed on telephones provided at grid stations, 25 KV sub stations and switching posts as per the approved instructions? Are the tools used by maintenance staff properly insulated ([No.70/WDO/OR1/RO/1.] XN. MALHOTRA, Member Engineering & Ex-officio secy. Printed by the Manager, Govt. of India Press, Ring Road, Mayapuri, New Delhi-110064 and Published by the Controller of Publications, Delhi-110054—2000.