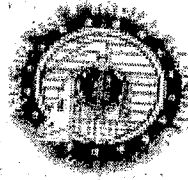


RBE No:124/2019



PCPO's Sl.No.159/2019

No. E/MPP/O/ECR/HJP

Dated:- 11.09.2019

1. CAO (Con.)/ उत्तर एवं दक्षिण / पटना।
2. सभी PHOD/CHOD, पू.म.रे, हाजीपुर।
3. DRM/ पू.म.रे / मुगलसराय, दानापुर, धनबाद, सोनपुर एवं समस्तीपुर।
4. मुख्य कार्मिक अधिकारी / प्रशासन / पू.म.रे / हाजीपुर।
5. मुख्यालय के सभी कार्मिक अधिकारी।
6. CWM/ पीडी / मुगलसराय, यांत्रिक कारखाना / समस्तीपुर / हरनौत।
7. Sr.DPO/ पू.म.रे / मुगलसराय, दानापुर, धनबाद, सोनपुर एवं समस्तीपुर।
8. उप महाप्रबंधक / विधि / पटना।
9. प्राचार्य / क्षेत्रीय रेल प्रशिक्षण संस्थान / मुजफ्फरपुर एवं भूली।
10. सभी मुकाय्याधी / कार्याधी / पू.म.रे / हाजीपुर।

विषय : Introduction of refresher course for SSE/Bridges.

संदर्भ : Railway's Boards Lt.No.E(MPP)2019/3/25 Dated: 31.07.2019

विषयांकित से संबंधित संदर्भित पत्र की छायाप्रति सूचना, मार्गदर्शन एवं अग्रोत्तर आवश्यक कार्रवाई हेतु प्रेषित की जा रही है।

A copy of above referred letter on the subject matter is being forwarded herewith for information guidance and needful onward action please.

संलग्नक : यथोपरि।

DA : As above.

(सौरभ सावर्णी)

11.9.2019

वकाधि / ई.एस.एम

कृते महाप्रबंधक (कार्मिक) / हाजीपुर।

प्रतिलिपि सूचनार्थ, मार्गदर्शन एवं आवश्यक कार्रवाई हेतु प्रेषित :-

1. महासचिव / ईसीआरकेयू / पू.म.रे / हाजीपुर।
2. महासचिव / एस० सी० / एस० टी० / एशोसिएशन / पू.म.रे / हाजीपुर।
3. वकाधि (एम.पी.पी.) / पू.म.रे / हाजीपुर। कृपया इसे नेट पर अपलोड कराने की व्यवस्था करें।
4. महासचिव / ओ.बी.सी.एशोसिएशन / पू.म.रे / हाजीपुर।

Comparison between the syllabus of Refresher Training-Module at ZTS and syllabus of proposed refresher course at SSTW/Pune of SSE/Bridges

Lesson Content (Refresher Training Module at ZTS)	Module No. (ZTS)	Hours allotted in the syllabus (ZTS)	Sl. No. SSTW/Pune
Duties of JE/SSE/Bridges	BRC101	2	1
Basic concept and classification of bridges	BRC102	2	-
Investigation and Survey for construction of bridges	BRC103	2	-
Concrete Technology, Reinforcement and Formwork	BRC104	4	14.1, 14.3, 14.4 & 15.1
Construction of substructures of bridges	BRC105	7	17.7
Bearing	BRC106	2	15.4, 15.5 & 17.6
Construction of super structure of bridges	BRC107	7	13.1, 15.1-15.3, 16.6 & 17.3
Erection of Bridge Super structure	BRC108	7	16.1 to 16.6
Construction of Misc structures	BRC109	2	15.2
Temporary arrangement for bridge works	BRC110	3	16.1 to 16.3
Inspection of bridges and Misc. structures	BRC111	7	17.1 to 17.8
Underwater inspection	BRC112	2	17.9
Maintenance of bridges and Misc. structures	BRC113	7	11, 17.1 to 17.8
Inspection and maintenance of Tunnels and Deep Cuttings	BRC114	2	-
Rehabilitation of bridges	BRC115	4	18
Precautions while executing works in electrified section	BRC116	1	-
Plant and machinery of the Engineering Department	BRC117	2	19.1 to 19.4
Laying channel sleepers on steel girder bridges & replacing of Elastomeric bearing in PSC girders	BRC118	2	17.6
Track on bridges, track protection during bridge maintenance	BRC119	1	5.1
Quality control & safety and vigilance related issues	BRC120	3	10.2, 10.3
Bridge rules & specifications, Bridge code of practice, bridge management system and updating bridge data	BRC121	4	12
Action during accidents and breaches	BRC122	3	20
Schedule of dimensions and CRS sanction	BRC123	2	5.2

5/11

CATEGORY : SSE/JE Bridge

TRAINING MODULE FOR REFRESHER COURSE

DURATION OF COURSE: 03 WEEKS

SN	TOPIC DETAILS	PDS
✓ 1	Duties of JE/SSE Bridges-	1
✓	Stores - accountal of material, stock verification, preparation of Indents etc.	3
✓ 3	Establishment rules- Pass & Leave rules, conduct rules, D&A rules, HOER, Witnessing of payment, Minimum wages act, Factory Act & workmen's compensation act.	3
✓ 4	Rajbhasha - Directives for implementation of Rajbhasha, Unicode usage.	1
✓ 5	General rules and subsidiary rules and SOD	5
✓ 5.1	General rules applicable to all Railway servants, Signals – General provisions, Descriptions of Fixed signals, Hand signals, Detonating signals, Flare signals, General rules and procedure to be followed while carry out engineering works, protection of track, working of lorries, trolleys, motor trolleys, works of short duration, long duration, engineering indicators, protection of track, single line, double line, safety during execution of works on bridges,	3
✓ 5.2	Schedule of dimensions - Dimensions and clearances of fixed structures for B.G. & M.G, ODC, CRS sanction, Works requiring CRS sanction.	2
6	Interaction with other departments- Working in track circuited & Electrified sections, Co-ordination with P. Way and Works; and with other departments like S&T, TRD, Operating, Personal, RPF etc.	2
7	Training on soft skill- Managerial skill, Leadership, Personal Development and Soft Skill, Personal Management. Meditation, Ethical Training.	2
8	Navigation of RDSO site and IRCEP and IRICEN Website	1
✓ 9	Engineering codes/Manuals- IRPWM, IRBM. Latest correction slips, PCE, CBE circulars. Steel Bridge Code, Welded bbridge Code, IRS B1, BS report Nos. 102, 103, 110, 111, 113, 115	14
✓ 10	Contract Management-	6
✓ 10.1	Types & forms of contracts, tenders, GCC&SCC, SOR.	2
✓ 10.2	Quality control measures at site, various registers to be maintained for progress, quality, safety of contractor's persons, safety measures at work site, accountal of new and released material, issue and receipt from contractors, important points from vigilance angle, Dos and don'ts for different works.	4
✓ 10.3	Vigilance related issues- Do's and Don'ts and other precautions, Up-keep of records, contract and material management.	2
✓ 11	Field demo on layout for bridges and Camber measurement using total station	8
✓ 12	Bridge management system	4
✓ 13	Construction of Super Structure of Concrete bridges-	6
✓ 13.1	Basic concept of Pre stressing- equipment for stressing, method of pre stressing, formwork for PSC, stages of pre stressing. Load test for girders.	4
✓ 13.2	Rehabilitation of Pre stressed concrete structures.	2
✓ 14	Concrete Technology, Reinforcement and Formwork-	8
✓ 14.1	Ingredients of concrete, Types of cement, Design Mix, Admixtures & chemicals, Mixing & Placing of Concrete, Curing.	2

16

20	Action during Accidents and breaches- Accidents and breaches: Duties of SE/Bridges, sounding of hooters, & classification of accidents, action to be taken on reaching site, first aid, preservation of clues, assessments of men and material for restoration, expeditious restoration, breaches & its types, Action during breach, washout of bridges, temporary restoration, restoration of bridges, enquires, provisions of ARS – water ways, scour, flood discharges, protection works, sounding – flood register.	1
21	Disaster management- DM Act 2005, NDMA; Rolé of NDRF, NPDM. Risk reduction, recovery, rehabilitation, medical aid- first aid, food and health.	1
22	Field visit – Field visits at important constructions/project/Regirdering site/Girder fabrication site.	16
	TOTAL NUMBER OF PERIODS.	144
	TOTAL NUMBER OF DAYS	18
	TOTAL NUMBER OF WEEKS	3

TRAINING

MODULES

FOR

1. SSE/Bridges - INDUCTION COURSE
2. JE/Bridges - INDUCTION COURSE
3. JE/Bridges - PROMOTIONAL COURSE
4. SSE/JE/Bridges - Refresher Course

Annexure X

Course duration for Bridge Cadre

Course	Duration		
	Class room training including field visit	Field Training	Total
a) Initial SSE/Bridges	15 weeks	89 weeks	104 weeks
b) Initial JE/Bridges	15 weeks	89 weeks	104 weeks
c) Promotional JE/Bridges	10 weeks	-	10 weeks
d) Refresher Course SSE/JE/Bridges	3 Weeks	-	3 Weeks

PROPOSED TRAINING MODULES FOR REFRESHER COURSE TO SSE/JE/BRIDGES

Module No.	Lesson Content	Proposed Hours		Proposed Field Visit
		Class Room	Model room	
BRC101	Duties of JESSE/Bridges	2		
1	Inspection, maintenance of bridges and other structures.			
2	Knowledge of Rules and Regulations			
3	Go-ordination with permanent way, works and higher staff of other Departments			
4	Accompanying on Inspections of Higher officials			
5	Execution of works			
6	Action in case of Emergency			
7	Establishment			
8	Correspondence and records			
9	Relinquishment of charge			
BRC102	Basic concept and classification of bridges	2		
1	Definition of bridge and Components of bridge.			
2	Classification of Railway bridges, different types of Loading Standard for Railway bridges/Road bridges			
BRC103	Investigation and Survey for construction of bridges	2		
1	Investigation of Minor, Major and Important bridges.			
2	Hydrological investigation			
3	Factors governing the choose of site			
4	Design, discharge, Design discharge for foundation, Design of waterways, Vertical clearance, Free board, Afflux, Scour depth.			
BRC104	Concrete Technology, Reinforcement and Formwork	4		
1	Ingredients of concrete, Types of cement, Design Mix, Admixtures & chemicals, Test on fresh concrete, Test on hardened concrete-Destructive & Non-Destructive, Concrete for PCC, RCC & PSC, use of concrete codes.			
2	Grade of steel, fabrication of reinforcement, preventing methods for corrosion of reinforcement			
3	Various type of Formwork- Fabrication & erection of formwork, removal formwork.			

SP/PA
MP/MP

BRC105		Construction of Substructure of bridges			
1		Soil investigation and classification, Load bearing capacity of soil.	7		
2		Setting the layout of bridges, Cofferdam, Island formation, Trim concrete, Tilt & Shift, Quick sand, Anchoring of foundation.			
3		Open foundation, Pile foundation, Well foundation, Box Caisson.			
4		Pile load test, Plate load test.			
5		Pier, Abutment, Wing wall, Return wall and Protective works.			
6		Bed block and trestle beam.			
BRC106		Bearing	2		
1		Need of bearing, Selection of bearing.			
2		Types of bearing- Sliding bearing, Roller bearing, Rocker & Roller bearing, Elastic bearing, Pot bearing, PTFE bearing, Phosphor bronze bearing Teflon bearing.			
3		Manufacturing of bearing- Erection of bearing.			
BRC107		Construction of Super Structure of bridges	7		
1		PSC Slab/Girder- Basic concept of Pre stressing- High strength concrete, High tensile steel, equipment for stressing, method of pre stressing, losses of prestress, formwork for PSC, stages of pre stressing, Design of PSC, Rehabilitation of Pre stressed concrete structures.			
2		Composite Girder.			
3		Types of steel girders, Fabrication of Steel Girder- Preparation of fabrication, trial shop erection, welding techniques, riveting.			
4		Misc. RCC slab, Box culvert, Limited Use Subway (LUS), Pipe culvert, Box pushing, Pipe pushing, Box Siphon.			
5		Load test for girders/slab.			

PCPO'S No. 159/19
E/MP/10/ECR/HOB
dt. 4/9/19.