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अनुसंधान अभिकल्प और मानक संगठन  
लखनऊ-226 011  
Government of India - Ministry of Railways  
Research Designs & Standards Organization  
LUCKNOW - 226 011

**Om Prakash Kesari**  
**Executive Director Standards Electrical/Co-Ord**

D.O.No.EL.8.5.10.1

Date 08.09.2016

Subject: PCDO for the month of August, 2016

## **1.0 HIGHLIGHTS OF THE MONTH**

### **1.1 Meeting for Upgradation of WAG9 to 9000 HP**

Railway Board vide letter no. 2015/Elect(TRS)/440/4PtI dated 12.7.2016 had accorded in principle approval to upgrade the existing WAG-9 loco from 6000 HP to 9000 HP by RDSO/CLW in association with industry and advised RDSO to examine the feasibility of up-gradation of WAG-9 locomotive from 6000 HP to 9000 HP and take suitable action accordingly. A meeting was held at RDSO on 4.8.2016 with traction motor manufacturers to explore the feasibility of upgrading the traction motor continuous power rating from existing 850 KW to about 1200 KW with bare minimum mechanical changes in bogie. All the traction motor manufacturers had stated that it is feasible to design the traction motor of about 1200 KW within the available envelop. All the firms were advised to submit their initial design proposal to RDSO by 15.9.2016. Minutes of meeting had been issued vide letter no. EL/3.2.182/9000HP dated 4.8.2016.

### **1.2 On Line Data Acquisition of Locomotive**

A meeting was held on 10.8.2016 at CRIS on the issue of online data capture from MPCs/RDS on CRIS SLAM server. It has been decided that packet data from M/s SIL MPCs V3 will be captured by vendor server and pushed to CRIS server, packet data from M/s ARC RDS will be directly transmitted to CRIS server and display screen shall be developed in consultation with RDSO. Minutes of meeting had been issued vide letter no. 2015/CRIS/NDLS-HQ/CMS/BUDGETS/SLAM/Rollout/0065/ Pt-1 dated 10.8.2016.

### **1.3 Reliability improvement of Surge Arrestors:**

Presently there is no maintenance guideline available to Zonal Railways on preventive maintenance of LAs provided on Electric Locomotives/EMUs. However, it is essential that the health/condition of the LAs provided on Electric Locomotives/EMUs is to be monitored at a regular interval. In this connection RDSO has prepared a Technical Circular No. RDSO/2016/EL/TC/0136, Rev'0' for condition monitoring of LAs provided on Electric Locomotives/EMUs and issued to Zonal Railways.

### **1.4 SMI on Brake Hanger for WAP 7&WAG 9**

SMI No. RDSO/2007/EL/SMI/0251,Rev. '0', has been revised and the revised SMI No. RDSO/2007/EL/SMI/0251,Rev. '1' dated 16.08.2016 Maintenance Instructions of Brake Hanger for WAP 7&WAG 9 Electric Locomotives has been issued to Railways.

### **1.5 SMI on Maintenance and Trouble Shooting of Hotel load Converter**

Draft SMI on Operational, Maintenance and Trouble Shooting of 2x500 kVA, IGBT based hotel load converter of WAP7 locomotive was prepared and sent to Railways and Firms for their comments/suggestions vide this office letter of even no. dtd. EL/11.5.5/6 dtd. 09.08.2016.

### **1.6 SMI for Technical Scope of Work for AMC of GTO based Propulsion Equipment**

After consultation with OEM and Zonal railways, a comprehensive SMI No. RDSO/2016/EL/SMI/0294(Rev 0) dated 16.08.2016 for maintenance of GTO based converter, auxiliary converter and VCU have been issued.

### **1.7 Expression of Interest for Development of New Sources**

Expression of Interest (EOI) for 39 items had been published for developing more sources. EOI no. RDSO/2016/EL/EOI/1 dated 11.8.2016 had been published in newspapers and uploaded on RDSO's website. for these items we have less than three sources at present.

## **2.0 RELIABILITY IMPROVEMENT:**

### **2.1 Reliability improvement of VCB of M/s BTIPL:**

a meeting with M/s BTIPL representatives and Sr.DEE/MGS was held at RDSO on 17-8-16 to discuss the failures of single bottle VCB of M/s BTIPL and other warranty replacement issues of ELS/MGS. Based on the discussion MOM has been issued by RDSO.

### **2.2 Investigation Report on Entanglement of Pantograph**

An investigation report on entanglement of pantograph of loco no 22797 of ELS/MGS has been prepared and issued to concerned railways vide this office letter no EL/2.2.1/1 dated 08.08.2016 .

### **2.3 SMI on Maintenance Practices for 1750 LPM Lubricated Compressor**

A draft SMI on standardization of schedule maintenance practices for 1750 LPM capacity lubricated reciprocating compressor has been uploaded on RDSO portal for comments from Zonal railways vide this office note no EL/3.2.15/ 3 phase dated 19.08.2016

### **2.4 Workshop on Ultrasonic Testing (UST)**

A workshop on ultrasonic testing (UST) as per different UST codes given in TC No. 0047(Rev. 02) on ultrasonic testing procedures for axles of Electric Locomotives was conducted for sheds at ELS/GZB, AQ & RPM in pursuance of instructions by AML. The workshop was attended by GZB, TKD, LDH, CNB, JHS, BRC, MGS, at ELS/GZB shed on 1.8.2016, AQ,KYN,BSL,ET,BIA,NKJ at ELS/AQ shed on 2.8.2016 and RPM,ED,AJJ,BZA,LGDKZJ,WAT at ELS/RPM shed on 4.8.2016.

### **2.5 Performance Review Meeting of Traction and Auxiliary Converter**

Performance review meeting of IGBT based traction and auxiliary converter was held on 29.07.2016. MoM of this meeting was prepared and issued vide this office letter no. EL/11.5.5/1/IGBT dtd 17.08.2016.

### **2.6 Reliability Action Plan (RAP) for three phase Locomotives**

Reliability Action Plan (RAP) for three phase locomotives is being monitored for its early implementation. Current status of the activities of RAP is enclosed as Annexure 'A'.

## **3.0 PROTOTYPE TESTING/QUALITY AUDIT:**

### **3.1 Quality Audit of M/s Power Pack Commutators**

Quality Audit of M/s Power Pack Commutators(India) Pvt. Ltd., Umbargaon, Valsad, Part-II source for manufacturing & supply of Commutator Assembly for traction motors of conventional electric Locos had been carried out on 22/23.08.2016. Quality audit report is under preparation.

### **3.2 Quality Audit of M/s. Stone India**

After scrutinizing revised QAP as submitted by M/s. Stone India Ltd./ Kolkata the Quality audit report for renewal of panel mounted brake system IRAB 9/10 submitted for finalization.

### **3.3 Dispatch Clearance to M/s Medha for Hotel load Converter**

M/s Medha offered three (03) sets 2x500 kVA hotel load converter (5th, 6th & 7th set) for witnessing the routine test as per RB contract no. 2011/RSF/466/1(GP-215) dtd. 21.03.2011. Three sets of hotel load converter were tested as per approved test protocol at the works of M/s Medha from 08.08.2016 to 11.08.2016. Dispatch clearance of the same was given vide this office letter no. EL/11.5.5/6/Medhadtd. 19.08.2016.

### **3.4 Type Test of M/s Trolex make Pressure Sensor**

Type test of M/s Trolex make pressure sensor for transformer oil has been carried out on 23 & 24 August'2016.

### **3.5 Type Test on M/s Medha make Line Inductor for Kolkata Metro**

Type test on M/s Medha make line inductor for Kolkata Metro has been carried out at the works of M/s Medha, Hyderabad on 25 & 26 August 2016.

## **4.0 SPECIFICATION/STR:**

### **4.1 Revision of Technical Specification for Traction Motor for 25 KV AC BG EMUS & MEMUS**

Final Draft of revision '1' of technical specification No. RDSO/PE/SPEC/D/EMU/0047 of August 2016 for high horse power traction motor for 25 KV AC BG EMUs & MEMUs and the reasoned document has been prepared and uploaded on RDSO's website ([www.rdsol.indianrailways.gov.in](http://www.rdsol.indianrailways.gov.in) -> draft Spec/STR for comment->Final draft) for 15 days (Up to 08.09.2016) for comments from Firms/vendors and Railways.

### **4.2 The Special Maintenance Instruction for maintenance of DPWCS**

The Special Maintenance Instruction for maintenance of DPWCS fitted in conventional and 3-phase Electric Locomotives bearing no. RDSO/2016/EL/SMI/0295(Rev. '0'), dated 16.08.2016 was issued vide letter no. EL/3.1.3/DPWCS dated 16.08.2016 and uploaded on RDSO website.

### **4.3 Technical Specification for set of Multi core Cables**

Draft technical specification no. RDSO/2016/EL/SPEC/..... Rev. '0' for set of multi core cables for WAG-9/WAG-9H/WAP-7/WAP-5 locomotives with improved conductor temperature of 150 degree C has been prepared and up-loaded on RDSO website for a period of one month for comments/ suggestions. Based on the comments suggestion specification shall be finalised.

### **4.4 Technical Specification for IGBT based 3-phase propulsion equipment**

A draft Technical Specification for Design, Development, Supply and Commissioning of IGBT based 3-phase drive propulsion equipment including Hotel Load Converter on WAP-5 locomotive (Spec. No. RDSO/2016/EL/SPEC/XXXX, Rev. 0) was prepared and uploaded on RDSO website on 22.08.2016 for comments and suggestions.

## **5.0 DEVELOPMENTAL WORKS:**

### **5.1 Extended Field Trial of carbon brushes in Hitachi Traction Motor:**

Based on the performance of carbon brushes grade E49X of M/s Schunk for Hitachi Traction Motor, RDSO vide letter No. EL/2.2.41/HS/SM dated 12.8.2016 advised ECR, SECR and WCR to carry out extended field trial of Schunk grade E49X carbon brushes in Hitachi traction motor by procuring 10 loco set quantity each.

### **5.2 Capacity Assessment of M/S Swarnagiri Wire Insulations**

RDSO representative carried out the capacity assessment of M/s Swarnagiri Wire Insulations Pvt. Limited, Hubli followed by prototype testing of corona resistant wire from 08.08.16 to 13.08.16.

### **5.3 Prototype Tests on Roof Mounted Air Conditioning Unit**

Prototype tests have been conducted on roof mounted air conditioning unit as per RDSO's Specification No. RDSO/2007/EL/SPEC/0055(Rev-01) manufactured by M/s. Intec Corporation, Dehradun at firm premises. Prototype clearance has been given provisionally to the firm vide this office letter No. EL/3.1.10/2 dated 30.08.2016 for field trial of prototype unit for the period of six months.

### **5.4 Capacity assessment of M/s Ultra Engineers, Pune for suspension tube**

Capacity assessment of M/s Ultra Engineers, Pune for suspension tube & its assembly components for 3-Ph traction motor type 6FRA 6068, mechanical rehabilitation of magnet frame & assembly components of TAO 659, assembly components (stator chamber, end frame & Labyrinths) for Traction motor type 6FRA 6068 and assembly components(stator chamber, end frame & Labyrinths) for Traction motor type 6FXA 7059 have been conducted on 24.08.2016. Assessment report is under preparation.

### **5.5 Capacity assessment of M/s Pune Carbons**

Capacity assessment of M/s Pune Carbons, Pune for manufacturing & supply of Carbon brush for Hitachi traction motor type HS 15250A, Carbon brush for earth return brush for Hitachi traction motor type HS 15250A and Carbon brush for MCPA type CRC-150 have been conducted on 25.08.2016. Testing of carbon brushes are also being conducted from 22.08.16 to 26.08.2016. Assessment report is under preparation.

## **6.0 OTHER ITEMS:**

### **6.1 Approval of QAP of M/S BHEL for Kolkata Metro**

M/s BHEL's QAP no. QTM/QAP/15-16/TM3701/Suspension Tube/01, Rev.01 dt. 10.08.2016 for Suspension Tube of Traction Motor type TM3701BY/BX for Metro Railway, Kolkata had been provisionally approved vide RDSO letter No. EL/4.3.42 (Metro) dated 12.08.2016. Similarly M/s BHEL's QAP No.QMX/QAP/TM/10-11 Rev 08 for manufacturing of TM type 4303BY for 25 KV conventional EMU/MEMUs had been provisionally approved with covering note number EL/4.5.35 dated 29.08.2016.

### **6.2 Evaluation Design Document of Traction Motor C1023**

Design document, type & routine test schedule of traction motor C1023 (Equivalent to NGEF Traction Motor) of Metro Railway Kolkata submitted by M/s CGL had been examined. Detailed comments had been given vide letter no. EL/4.3.42/MRK/CGL dated 12.08.2016 for compliance and re-submission of the revised documents.

### **6.3 Approval of Test Plan for Traction Motor of M/S Medha For Kolkata Metro**

Type test & special test plan No. MTEPL/KM/TM/TYPE TEST/001, Rev. '02' dated 01.08.2016 and Routine Test plan No. MTEPL/KM/TM/RTP/001, Rev. '02' dated 01.08.2016 of 3-Ph traction motor type TME 45-40-4 of M/s Medha for Kolkata Metro has been provisionally approved vide note No. EL/3.2.182/K Metro/166 dated 19.08.16.

#### 6.4 Planning of Modification of Power Car and Coaches for HOG Operation

A meeting was held at RDSO, Lucknow on 05.08.2016 for planning of modification of power car and coaches for HOG operation. In this meeting, CLW, ER, WR, NR, M/s Medha and M/s Siemens participated. The MOM was issued vide this office letter no. EL/11.5.5/6 dtd.12.08.2016.

#### 6.5 Simulation Studies for Determining the Time loss

Simulation Studies for determining the time loss of passenger & freight trains with different type of locos, load & speed was carried out in line with Traffic Dte. note no. TFC/55/Tech. Dated 23.08.2016 and communicated to Traffic Dte. vide note no. EL/3.1.39/1 dated 31.08.2016.

#### 6.6 Fresh Vendor Registration application during Aug'2016

Group	No. of Online Application received	No. of Application registered after fee verification	No. of application where query raised	No. of application rejected due to deficiencies
TM	1	1	0	0
SEE	3	2	1	0
PS & SC	NIL	NIL	1	NIL

Yours sincerely,

**(Om Prakash Kesari)**

**Shri A.K. Kapoor,  
Member Traction,  
Railway Board, Rail Bhavan,  
New Delhi-110 001**

Copy to-

1. Additional Member (Electrical), )  
Railway Board, Rail Bhawan, )  
New Delhi. )
2. Secy to DG/RDSO )

For kind information

**(Om Prakash Kesari)**

For Director General/Electrical

**Annexure A for PCDO for Month Aug-2016**

\* T-No. of locos for which the modification required. \*\*D-No. of locos in which modification done

S N	Work	RDSO Ref. No.	ER		NR		SCR		CR		WCR		WR		SR		SER		SECR		ECR		TOTAL		
			T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	*T	** D	
1.	Use of 8 Amps rating reed relay	RDSO letter no. EL/11.5.5/5 dtd. 28.12.12.	24	24	123	93	159	159	22	153	100	7	7	32	5	5	70	2	6	18	13	1	102	62	
2.	Avoiding low pressure zone above hood ventilator.	RDSO/2014/EL/MS/0434 'Rev-0' dated 28.03.2014	24	24	83	75	172	171	226	184	100	9	7	55	9	5	76	3	7	46	13	9	105	83	
3.	dB level of output of fibre optic transmitters.	SMI/257	Being done														22	0	Being done				SER to start		
4.	Prov. of partial redundancy for HBB/STB processor in WAG9/9H and WAP7.	MS/0429&MS/0435	24	24	60	22	159	116	226	2	100	3	1	18	5	5	76	2	7	31	13	2	919	37	
5.	Modified cooling radiators for SR.	RDSO L/N EL/11.5.5/5 dt. 15.02.10.	24	24	130	120	124	124	129	9	217	6	4	41	4	4	79	7	4	43	10	9	938	72	
6.	Shifting of MCB-100 to HB-2 panel.	MS/0367	24	24	130	130	171	171	215	215	217	9	0	0	4	4	79	6	7	45	14	140	109	93	
7.	Rehabilitation and replacement of electrolytic caps.	RDSO guideline no. ELG/2008/01, Rev. '1' dated 13.08.09	3	3	88	31	86	22	90	5	3	2	2	2	0	2	0	2	0	1	3	69	3	382	14
8	Test set up for SAP cards and sensors .	SMI 260	Test setup not available				Test setup available				not available		Available		Test setup not available										

