



Om Prakash Kesari
Executive Director Standards Electrical/Co-Ord

No.EL.8.5.10.1

Date: 08/08/2016

Subject: PCDO for the month of July, 2016.

1.0 HIGHLIGHTS OF THE MONTH

1.1 Special Maintenance Instruction for cab AC Unit

Special maintenance instruction (SMI) No. RDSO/2016/EL/SMI/0293, Rev. '0', Dated 29.07.2016 for maintenance of cab AC unit for Electric Locomotives has been prepared and issued to Railways. This will help Zonal Railways to adopt uniform practice for maintenance of cab AC for better reliability.

1.2 Technical Report on Distributed Power Wireless Control System (DPWCS)

The issues related to DPWCS and current status have been studied and a technical report on DPWCS bearing no. RDSO/2016/EL/IR/0171 Rev '0' was issued & uploaded on RDSO website on 25.07.2016. This will guide Zonal Railways to take necessary steps for operation and maintenance of DPWCS.

1.3 Technical Audit of ELS/MGS for Maintenance of Vacuum Circuit Breakers (VCBs).

Technical audit of ELS/ Mughalsarai for maintenance of VCB of Electric locomotives of different make has been carried out by RDSO during the month. Earlier technical audit of ELS/Vadodara & ELS/Kanpur was carried out during June 2016 by RDSO . Based on the details of maintenance practices collected from the loco sheds a Technical Audit Report No. RDSO/2016/EL/TAR/009 Rev.0 dated 25-7-16 has been prepared and issued. The technical audit report has also been uploaded on RDSO website.

1.4 Quality Audit of High Reach Pantograph of M/s. Schunk Metal Ltd

The quality Audit of high reach pantograph of M/s. Schunk Metal Ltd / Bangalore has been conducted and the firm has been asked to submit compliance on reliability issues vide letter EI/2.2.1/ high reach dated 25.07.16.

2 RELIABILITY IMPROVEMENT

2.1 Meeting to Improve Reliability of Three Phase Transformer:

The problems in 3-Ph locomotive transformers on account of abnormal DGA have been reported by SCR and ER. Based on the failure reported by two Railways transformer manufacturers and representatives from SCR and ER were called upon to decide the action plan for the same. The action plan has been framed to tackle the failure and MOM has been issued.

2.2 Meeting to Improve Reliability of Surge Arrestors:

Based on the failure details submitted by Zonal Railways for 42 kV surge arrestors provided on Electric Locomotives, a meeting of approved suppliers of Surge Arrestors was called by RDSO. During the discussion, it has been concluded that failure of Polymer based LA of M/s CGL provided in 2005-06 have been reported by ELS/HWH and ELS/JHS. Also, there are no maintenance guidelines available with Zonal Railways for its condition monitoring. It has been decided that M/s CGL shall replace the failure prone surge arrestors and RDSO shall prepare maintenance instructions for condition monitoring of surge arrestors provided on Electric Locomotives by August 2016.

2.3 Workshop On Ultrasonic Testing

A workshop on ultrasonic testing was conducted for sheds of Eastern region at ELS/HWH to demonstrate correct method of ultrasonic testing and precaution to be taken during testing. This was done in pursuance of instructions by AML.

2.4 Performance Review Meeting on Carbon Brushes for Hitachi TMs:

Performance Review Meeting on carbon brushes for Hitachi TMs was conducted jointly with Manufacturers and Zonal Railways at RDSO . Discussions on various issues were held on the performance of carbon brushes. Detailed Minutes of Meeting comprising make wise failure statistics & action to be taken for improvement of performance of carbon brushes has been prepared and issued vide RDSO letter No. EL/2.2.70 dated 5.07.2016 for implementation by the firms and Railways.

2.5 Technical Audit of Kanchrapara Workshop on Maintenance of 3-phase Traction Motor bearings, Motor Suspension Unit (MSU) and Hitachi Traction Motor

Technical audit of maintenance practices for 3-phase traction motor bearings, Motor Suspension Unit (MSU) and Hitachi Traction motorat Kanchrapara Workshop of Eastern Railway had been carried out by RDSO from 09.05.2016 to 13.05.2016. Technical audit report No. RDSO/2016/EL/TAR/0008 Rev '0' comprising observation and recommendations for maintenance practices for 3-Ph traction motor bearings, Motor Suspension Unit(MSU)& Hitachi traction motor has been prepared and circulated to Railways vide letter No. EL/1.3.10/3 dated 20.07.2016.

2.6 Reliability Meetings on Performance of M/s ABB make & M/s BHEL make Propulsion System for 3 phase Electric Locomotives

Reliability meetings on performance of M/s ABB make& M/s BHEL propulsion system for 3 phase Electric locomotives was held in RDSO on 29.07.2016. Representatives of Firms, CLW & Zonal Railways participated in the meeting. The performance related issues were discussed in detail and firms were advised to address the issues and submit the action plan at the earliest.

2.7 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 Lakshmanan Isola/Bangalore**

Quality Audit of M/s LakshmananIsola/Bangalore, Part-II source for manufacturing & supply of Glass Mica Sheet GU-FZ, Segment Mica and Flexible Mica Sheet MP-60-FCZ for traction motors of conventional electric Locos had been carried out on 07/08.07.2016. Quality audit report has been issued vide letter No. EL/2.2.8/Hitachi dated 01.08.2016.

3.2 **Quality Audit of M/s Sahney Commutator/Bangalore**

Quality Audit of M/s SahneyCommutator/Bangalore, Part-I source for manufacturing & supply of Commutator Assembly for traction motors of conventional electric Locos had been carried out on 05/06.07.2016.

3.3 **Quality Audit of M/s Intek Tape Pvt.Ltd./Bangalore**

Quality Audit of M/s Intek Tape Pvt.Ltd./Bangalore Part-I source for manufacturing & supply of Polyimide Adhesive Tape for traction motors of conventional electric Locos had been carried out on 09/11.07.2016. Sample sealed for testing at Third party NABL accredited lab. Test report from third party NABL accredited lab is awaited.

3.4 **Quality Audit of M/s Technova Tape./Bangalore**

Quality Audit of M/s Technova Tape./Bangalore, Part-II source for manufacturing & supply of Polyimide Adhesive Tape for traction motors of conventional electric Locos had been carried out on 12/13.07.2016. Sample sealed for testing at Third party NABL accredited lab. Test report from third party NABL accredited lab is awaited.

3.5 **Quality Audit for Panel Mounted Brake System IRAB 9/10 of M/s. Stone India**

Quality audit for panel mounted brake system IRAB 9/10 of M/s. Stone India Ltd./ Kolkata has been carried out as per latest TC & approved QAP. The test report and the Quality audit report are under scrutiny. Firm has submitted the revised QAP as per latest approved Technical Circular issued by RDSO.

3.6 **Routine Test Protocol for Testing the Hotel Load Converters of M/s Medha**

M/s Medha has developed the 2x500 kVA Hotel load converter for WAP7 locomotives. Routine test protocol for testing the hotel load converters has been approved, vide letter no EL/11.5.5/6/Medha dated 12.07.2016

3.7 **Routine Test Plan for M/s Bombardier make IGBT based Traction Converter**

Routine test plan for M/s Bombardier make IGBT based traction converter for 3 phase Electric locomotives has been approved vide letter no EL/11.5.5/1/IGBT/BT dated 08.07.2016.

4.0 SPECIFICATION/STR:

4.1 Revision of Specification of Elastomeric Cables

RDSO have proposed revision in Specification no ELRS/Spec/ELC/0019, Rev.2 for thin walled flexible elastomeric cables and framed new specification for three phase locomotives based on CLW specification No.CLW/ES/3/0458 duly including the clauses for raising the conductor temperature from 120 °C to 150 °C and including clause for Anti rodent, Anti termite and Anti ant properties as per Railway Board's directive. These draft specifications were uploaded on RDSO Website for comments and suggestions as per ISO guidelines. Based on the comments received from approved suppliers, a meeting of all approved suppliers was called at RDSO to clarify the requirement of specification. Based on the discussion, MOM has been issued.

5.0 DEVELOPMENTAL ACTIVITIES:

5.1 Fresh Vendor Registration during This Month

The position of fresh vendor registration application received during this month is appended below.

| 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 |
|-------|------------------------------------|--|---------------------------------------|---|
| SEE | 1 | 1 | 0 | 0 |
| TM | 1 | 0 | 0 | 0 |
| TPL | 3 | 3 | 1 | 0 |
| PS&SC | 4 | 3 | 0 | 0 |
| Total | 9 | 7 | 1 | 0 |

5.2 Capacity cum Capability Assessment Report, M/S SKF Technologies India

After satisfactory capacity cum capability assessment report, M/s SKF Technologies India Pvt. Limited, Ahmedabad requested RDSO to consider their field trial for which prototype test already done of Suspension bearing (M249747/710/VU1701 & M349547/510/VU1701) for Hitachi/TAO-659 Traction Motor, and TM bearing (NU326 & NUP318) for traction motor type TM4601BX/BW used in AC EMU/MEMU against fresh vendor registration case. M/s SKF's request had been accepted and 60 sets of above mentioned bearings under field trial, supplied to CLW and 60 TM sets of above mentioned bearings under field trial, supplied to ER will be considered against the fresh registration case .

5.3 Madhepura Project for 12000 HP Locomotive:

A meeting was held on 21st and 22nd July 2016 with M/s Madhepura Electric Locomotive Pvt Ltd in N Delhi . During the meeting technical issues raised by M/s Madhepura Electric Locomotive PvtLtd were clarified by RDSO.

5.4 **Modified Version of Software Version-37 for Traction Converter**

In order to improve the performance of the M/s ABB make IGBT traction converters , a modified version of software version-37 was uploaded in 5 locomotives on trial basis. On the basis of the satisfactory performance of the modified software, the modified version of software version -37 has been approved to upload in locomotives being commissioned in CLW fitted with M/s ABB make traction converters vide letter no EL/1.5.5/1/IGBT/ABB dated 18.07.2016.

5.5 **Indigenized Types of VCU Cards for GTO Based Traction and Auxiliary Converters**

M/s CGL had indigenized the 16 types of VCU cards for GTO based three phase locomotives. The renewal of approval for manufacturing of above cards of VCU has been extended for two years vide RDSO letter no.EL/11.5.5/3 dated 23.07.2016. Similarly M/s CGL had indigenized the 05 types of cards for GTO based auxiliary converters of 3 phase electric locomotives. The renewal of approval for manufacturing of above cards has been extended for two years vide RDSO letter no.EL/11.5.5/3/2/CGL dated 08.07.2016.

5.6 **Upgradation of M/s NEI**

Based on the compliance of RDSO Work Instruction & performance, M/s NEI, Jaipur had been included in part-II category for Suspension Tube bearings (NU1964&NH1044) for WAG9/WAP7 locomotive vide letter number EL/1.3.10 dated 27.07.2016.

5.7 **Change of Work Address of M/s Cosmic General Industries**

Based on the compliance of RDSO Work Instruction, the request of Change of work address of M/s Cosmic General Industries from N-8, Kasturi Industrial Estate, Goddev Road, Bhayander-E, Distt. Thane to Plot No. 43, sector A, Industrial Area, Mandideep, Distt-Raisen(MP)-462046 for manufacture & supply of Hitachi field coils(MP&IP) has been considered vide letter No. EL/3.2.172/AD/HFC/Cosmic dated 06.07.2016.

6.0 **OTHER ITEMS:**

6.1 **Closure of Registration Case:**

Based on the request of M/s TEXSPIN Bearings Limited, their online vendor application with vendor reference ID: 2013/1628 for manufacture and supply of bearings (NU330 & NH324) for Hitachi traction motor type HS15250A is permanently closed and will be considered as 'withdrawn' by firm. This was communicated to firm vide RDSO letter no. EL/2.2.13/TEXSPIN/NU330 dated 20.07.2016.

6.2 **Rejection of Application:**

Fresh vendor registration application of M/s ShetElectricals(P) Ltd., Bangalore for commutator assembly of conventional locomotives has been rejected on account of non-submission of required documents vide RDSO's letter no. EL/3.6.15 dated 26.07.2016 for six months (If firm reports complete compliance within six months from the date of issue of this letter, the case can be reviewed for consideration of approval).

6.3 Design Evaluation for Toshiba make Traction Motor type SEA-445 for Metro Railway, Kolkata

Design document, Type and Routine test protocol for Toshiba make Traction Motor type SEA-445 for Metro Railway, Kolkata submitted by M/s Dalian Locomotives had been examined. Comments had been given vide note No. EL/3.2.182/KM/30(Dalian)dated 04.07.2016 to PS&EMU Directorate for compliance.

6.4 Evaluation of QAP of Traction Motor for AC EMU of BHEL

The QAP no. QMX/QAP/TM4601/12-13 dt. 25.05.2016 Rev.11 of traction motor type TM4601BX for AC EMU submitted by BHEL had been examined and provisionally approved vide RDSO letter No. EL/4.5.21 dated 14.07.2016. Similarly the QAP no. QAP No. .QMX/QAP/TM/10-11 Rev 07 dated 08.07.2016 of traction motor type 4303BY for AC EMU submitted by BHEL had been examined and provisionally approved vide RDSO letter No. EL/4.5.35 dated 14.07.2016.

Yours sincerely,

(Om Prakash Kesari)

**Shri A. K. Kapoor,
Member Electrical,
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Copy to-

1. Additional Member(Electrical), }
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2. Secy to DG/RDSO }

(Om Prakash Kesari)
For Director General/Electrical

Annexure A for PCDO for Month July-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 | 0 | 12 | 54 | 15 | 15 | 22 | 153 | 9 | 6 | 7 | 2 | 4 | 3 | 70 | 8 | 6 | 18 | 13 | 1 | 10 | 527 |
| 2. | Avoiding low pressure zone above hood ventilator. | RDSO/2014/EL/MS/0434 Rev-0 dated 28.03.2014 | 43 | 24 | 85 | 70 | 16 | 16 | 226 | 16 | 9 | 9 | 7 | 5 | 4 | 4 | 76 | 2 | 7 | 46 | 13 | 9 | 10 | 790 |
| 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 | 41 | 24 | 79 | 18 | 15 | 10 | 22 | 2 | 9 | 1 | 1 | 1 | 4 | 4 | 76 | 2 | 7 | 31 | 13 | 2 | 94 | 331 |
| 5. | Modified cooling radiators for SR. | RDSO L/N EL/11.5.5/5 dt. 15.02.10. | 24 | 24 | 13 | 12 | 12 | 12 | 129 | 9 | 97 | 6 | 4 | 4 | 4 | 4 | 76 | 7 | 4 | 43 | 10 | 9 | 81 | 728 |
| 6. | Shifting of MCB-100 to HB-2 panel. | MS/0367 | 24 | 24 | 13 | 13 | 17 | 17 | 215 | 21 | 97 | 9 | 6 | 6 | 4 | 4 | 76 | 5 | 7 | 45 | 14 | 1 | 10 | 988 |
| 7. | Rehabilitation and replacement of electrolytic caps. | RDSO guideline no. ELG/2008/01 , Rev. '1' dated 13.08.09 | 3 | 3 | 41 | 28 | 73 | 8 | 15 | 4 | 3 | 2 | 0 | 0 | 4 | 0 | 2 | 0 | 1 | 3 | 69 | 3 | 41 | 147 |
| 8 | Test set up for SAP cards and sensors . | SMI 260 | Test setup not available | | | | Test setup available | | | | | not available | | Availab le | Test setup not available | | | | | | | | | |

