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No. EL/11.5.5/5

Dated. 08.05.2009

Chief Electrical Engineer,

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SPECIAL MAINTENANCE INSTRUCTION No. RDSO/2009/EL/SMI/0255(Rev.'0'), Dated. 06-5-09

1.0 TITLE

Air delivery measurement in three phase locomotive to ascertain proper cooling and pressurization of machine room.

2.0 Background:-

The accumulation of dust on electronic cards and high temperature of these cards is a major cause of failures of electronic cards of three phase locomotive. To avoid the dust ingress, proper pressurization of machine room is very important. The problem of under pressurization of machine room has been analyzed and studied by RDSO. Joint measurements were carried out at Electric Loco shed, Gomoh with CLW and RDSO. Measurements revealed wide variation in air delivery at same locations in different locomotives. Based on its importance, this item was taken as agenda item 10 in 33rd MSG for discussion.

3.0 Objective:

To avoid dust ingress in three phase locomotive and proper cooling of electronic cards by making air delivery measurements a schedule activity.

4.0 Instructions:

Presently air delivery measurements are done by electric loco sheds at different locations and in different schedules. Air delivery measurements are required to be carried out at different locations in three phase locomotives in different schedules as indicated in the table below. Minimum value of anemometer reading has also been indicated. If the values are recorded less than specified values, suitable action needs to be taken such as filter cleaning, checking of blockage in duct, cleaning of radiator and checking of air delivery of concerned blower etc. depending upon the measurement.

S. No.	Location at which air delivery reading should be taken	Minimum Value of anemometer reading m/sec.	To be performed in Schedule
1.	Above SR gate unit	3.0	MOH, IOH & POH
2.	Above incoming hose side of SR electronics	2.5	MOH, IOH & POH
3.	Above middle of SR electronics heat sink	0.8	MOH, IOH & POH
4.	Above opposite side of incoming hose of SR electronics	1.0	MOH, IOH & POH
5.	Control Electronics heat sink top right back side	2.0	MOH, IOH & POH
6.	Control Electronics heat sink top left back side	2.0	MOH, IOH & POH
7.	Front left side above electronic rack heat sink of BUR	1.2	IA, IB, IC, MOH, IOH& POH
8.	Back side of electronics rack heat sink of BUR	8.5	MOH, IOH & POH
9.	Front middle above heat sink of GG module of BUR.	3.0	IA, IB, IC, MOH, IOH& POH
10.	Front right side above WRE module heat sink of BUR.	2.8	IA, IB, IC, MOH, IOH& POH
11.	Below under frame of opening of SCMRB	12.0	IA, IB, IC, MOH, IOH& POH
12.	OCB in under frame at middle of radiator side wall.	8.0	IA, IB, IC, MOH, IOH& POH
13.	In under frame at TM end shield jally	12.0	IA, IB, IC, MOH, IOH& POH
14.	Below under frame at opening of SCTM	13.0	IA, IB, IC, MOH, IOH& POH

5.0 Test Equipments Required: Properly calibrated digital anemometer of suitable capacity.

6.0 Application to:
WAP5, WAP7, WAG9 and WAG9H locomotives.

7.0 Agency of implementation:
All sheds holding WAP5, WAP7, WAG9 and WAG9H locomotives.

(Sandeep Srivastava)
For Director General (Elect)

Copy to:

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(Sandeep Srivastava)
For Director General (Elec.)

Encl: As above.