AUSTRALIAN RAIL TRACK CORPORATION LTD

Discipline: Engineering (Signalling) **Category: Procedure**

Signals - Technical Maintenance Plan

ESM-26-02

Applicability

ARTC Network Wide	✓

Primary Source

SMS 15

Document Status

Version	Date Reviewed	Prepared by	Reviewed by	Endorsed	Approved
1.4	24 Feb 14	Standards	Stakeholders	Manager Standards	General Manager Technical Standards 27/02/2014

Amendment Record

Version	Date Reviewed	Clause	Description of Amendment
1.0	28 Apr 09		First issue. Supersedes NSW Standard SMS 15 v1.2 in part
1.1	07 Oct 09		Disclaimer updated as per Risk & Safety Committee 14/09/2009
1.2	13 Aug 10	All	Issued as final.
1.3	02 Aug 13		Update for reference to Service Schedules and TMP periodicities and Team Manager Signal Maintenance. Minor editorial updates throughout document.
1.4	24 Feb 14	2.3	Updated responsibility for monitoring compliance from 'Compliance Manager' to 'Compliance Engineer or Signalling & Compliance Manager Hunter Valley'.

Contents

1 Introduction

1.1 Purpose

This procedure covers requirements for the technical maintenance plans of signalling maintenance activities.

1.2 Scope

This procedure covers all ARTC jurisdictions.

1.3 Responsibilities

The Signal Maintenance Engineer / Team Manager Signal Maintenance is responsible for the application of this procedure within a given maintenance region. This includes ensuring that all signals assets are included in the systems for managing the maintenance work activities.

The Signal Work Group Leader/Manager is responsible for managing the process for each maintenance activity.

1.4 Reference Documents

The following documents support this procedure:

- Maintenance Service Schedules
- Technical Maintenance Plan for New South Wales
- Technical Maintenance Plan for Victoria
- Technical Maintenance Plan for South Australia

2 General

This Technical Maintenance Plan (TMP) specifies maintenance policy for ARTC's Signal infrastructure. It is provided for the use of personnel responsible for implementing these policies and programming preventive maintenance work. The TMP is to be read in conjunction with Signal Maintenance Procedures.

The TMP specifies:

- **Which** items are to be maintained
- **What** maintenance is to be carried out
- **When** maintenance is required.

The maintenance tasks and periods defined in this document are mandatory. The requirements are based on equipment in good and reliable condition, and normal working environment. Maintainers must review other situations and determine, in conjunction with the Signal Work Group Leader, Team Manager Signal Maintenance and Signal Maintenance Engineer, whether more stringent requirements are appropriate.

Approval of the Manager Standards is required for any change of the maintenance tasks and periods contained in this plan involving an extension of the periodicity or rationalisation of servicing tasks.

Only suitably accredited maintainers are permitted to maintain and certify signalling equipment and systems.

2.1 Application

The maintenance is scheduled in the works management system and is to be carried out by the maintenance due date plus, exceptionally, a latitude time that is specified for safety critical and non- safety critical maintenance. The maintenance due dates are based on either the date of the previous maintenance action plus the maintenance period exclusive of the latitude times or fixed time based on the maintenance period exclusive of latitude.

2.2 Latitude

Signal Workgroup Leaders / Managers must notify the Signal Maintenance Engineer / Team Manager Signal Maintenance when it becomes apparent that the required maintenance will not be done by the due date plus the latitude applicable for Signal Workgroup Leader. The Signalling Maintenance Engineer / Team Manager Signal Maintenance will be responsible for ensuring that the safety and integrity of the system is maintained by either:-

- For Safety critical maintenance:

  Approve additional discretionary latitude period available to the Signal Maintenance Engineer or Team Manager Signal Maintenance as specified. An assessment of the asset condition, risks and any necessary risk mitigation is required to be documented.

  or

  The equipment is to be booked out of order until the maintenance is completed.

- For Non-Safety critical maintenance:

  The maintenance may be extended by the latitudes specified.

See ESM-26-03 Signal Maintenance Latitudes.

2.3 Compliance

Compliance is achieved if maintenance is completed by maintenance due date plus Signal Maintenance Engineer / Manager latitude, provided that the necessary assessment of the asset condition, risks and any necessary risk mitigation is documented.

Monitoring of compliance with the intent of the periodicities contained in the TMP is to be assessed by the Signal Maintenance Engineer / Team Manager Signal Maintenance and Compliance Engineer or Signalling & Compliance Manager Hunter Valley. This process requires that a comparison of the maintenance due date with the actual completed date looking for exceptions outside the maintenance due date plus Signal Workgroup Leader latitude. The exception report is to be checked off against the approval for use of the signal maintenance latitude for each event.

2.4 Maintenance System Listing

See ESM-26-04 Signalling Service Schedules Index for the identification of individual items of equipment.

2.5 Technical Maintenance Plan Schedules and Periodicities

The maintenance periodicities and service schedules are listed in ESM2602-S01, and S02 and S03.

ESM2602-S01 covers the Service Schedules and Periodicities for New South Wales and Queensland.

ESM2602-S02 covers the Service Schedules and periodicities for South Australia and Western Australia.

ESM2602-S03 covers the Service Schedules and periodicities for Victoria.

3 Maintenance Concept

3.1 General

ARTC applies a comprehensive preventive maintenance program to minimise disruption to services, commensurate with cost effective practices and budgetary constraints. There are three levels of maintenance supporting ARTC's asset management system:

- Operational Level
- Depot Level
- Workshop Level.

3.1.1 On-System Maintenance

In general equipment is maintained On-System i.e. as traffic permits.

Alternatively equipment is made available for maintenance either by reducing system capability (failure tolerance, traffic speed etc.), or by use of track possessions.

3.1.2 Depot Level

Depot level maintenance, which is conducted on removed items in a controlled environment to ensure quality of product. These repairs are normally associated with items which are best handled locally to achieve rapid turnaround times, do not require specialised machine tools for repair and where numbers of items would not meet the throughput requirements of workshop level maintenance.

3.1.3 Workshop Level

Workshop level maintenance, which is major work such as complete equipment overhaul and extensive repair performed by an accredited service centre requiring a highly specialised workshop that has the throughput to justify the necessary support equipment and specialist skills.

3.2 Competency

Maintenance inspection, assessment, monitoring and review functions must only be carried out by suitably accredited staff.

Additionally

The ARTC "Signal Maintenance Engineer / Team Manager Signal Maintenance" shall be an accredited field signal engineer or equivalent role.

All "Signal Workgroup Leaders" shall be suitably accredited Signal Equipment Maintainers/Signal Electricians.

4 Technical Maintenance Plan User Information

The TMP table has the following elements:

- Technical Maintenance Code (TMC) for the asset group
- Asset description
- On System Maintenance
- Off System Maintenance.

4.1 Technical Maintenance Code (TMC), it is otherwise known as the Equipment Group Identifier (EGI)

The TMC/EGI identifies the asset group. The code is hierarchical with a maximum of 6 levels. A letter “L” has been added for service schedules where the maintenance periodicity is determined by the maintainer taking into consideration “local conditions”.

4.1.1 Level 1 - Application code

The application code is a 2-letter code that describes maintenance policy coverage. This code is SC for the signalling application

4.1.2 Level 2 - System code

The system number is a 2-digit code that identifies up to 99 systems within the application.

4.1.3 Level 3 - Sub-system code

The sub-system number is a 2-digit code that identifies up to 99 sub-systems within the system.

4.1.4 Level 4 - Assembly code

The equipment number is a 2-digit code that identifies up to 99 major assemblies within a system or sub-system.

4.1.5 Level 5 – Sub Assembly or item code

The component number is a 2-digit code that identifies up to 99 separate items within a major assembly.

4.1.6 Level 6 – Item

Used where level 5 is used to identify a sub-assembly. Defines the item within the sub-assembly.

4.2 Asset Description

This element details the name of the asset listed in the TMC/EGI. Acceptable abbreviations that fit the space available are permitted.

4.3 On-System maintenance

This field contains a number of columns:

- The first column contains the service schedule and version number
- The second column identifies the resource i.e. skill type required to perform the service

- The third column contains the maintenance periodicity for the service schedule.

4.4 Off-System Maintenance

This field contains three columns:

- The first column contains a task
- The second column contains the frequency for the service schedule (Note: OC= On Condition)
- The third column (Venue) contains the location or facility where the action is to be performed (e.g. on site, sales, scrap, dump, contract, workshop).