

# Plant Maintenance Procedures

EPP-32-02

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SMS

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## 1 Introduction

### 1.1 Purpose

This Procedure describes the ARTC Plant & Equipment maintenance management system, along with the forms and standards which support the process.

### 1.2 Scope

To ensure the internal plant and equipment in use within ARTC is operated safely and to the specified standards ARTC will procure, inspect, maintain and dispose all items of plant and equipment in accordance with the procedures outlined within this procedure and the relevant documents listed in Appendix A

### 1.3 Procedure Owner

The Plant Manager is the Procedure Owner and is the initial point of contact for all queries relating to this procedure.

### 1.4 Responsibilities

All maintenance inspection, assessment, monitoring and review functions of ARTC Plant & Equipment must be carried out by authorised staff, professionally qualified Engineers of the relevant discipline, or suitably qualified tradespersons and trades assistants.

The **Plant Manager** is responsible for managing the efficient provision of Plant & Equipment resources for infrastructure works in accordance with the annual plans, budgets & work schedules; compliance of personnel with the above mentioned ARTC policies and procedures, and ensuring outcomes arising from the maintenance works comply with ARTC's strategic plans and Safety Management System requirements.

The **Plant Compliance Engineer** is responsible for maintaining the Ellipse asset database and accuracy of associated maintenance scheduled tasks (MST's) for all plant related assets including road rail vehicles. This includes asset database integrity, MST currency and assessing documented compliance by Plant Coordinators with maintenance tasks, maintaining operating statistics and reporting on monthly schedule compliance statistics, The Plant Compliance Engineer is also responsible for maintaining current plant item registration where required for ongoing compliance with the Commonwealth Work Health and Safety Acts and Regulations.

The **Senior Plant Coordinator** is required to lead and manage the Plant support team to optimise the day to day management of the Plant & Equipment fleet and plant inventory ensuring the safety, reliability and serviceability of equipment is maintained in accordance with company policies, standards and budgets; whilst maintaining alignment with relevant Workplace Health and Safety and rail safety regulations.

The **Plant Coordinator** is responsible for the effective implementation of the inspection and maintenance program for the plant and equipment in their allocated area by the tradespersons and/or Contractors under their control or operating within their designated region. Including accountability for:

- Equipment safety
- On-time completion of Maintenance Scheduled Tasks
- Accurate recording of relevant information in the Ellipse maintenance management system
- Maintaining documented evidence of works completed to meet statutory requirements
- Effective minimisation of equipment downtime
- Planning maintenance outages to coincide with operational needs
- Service / labour contract implementation and management
- Budget expenditure, cost control and cost reduction initiatives, and
- Reliability improvement.

The **Team Manager** or **Project Manager** (where relevant) is responsible for the operation, inspection and daily maintenance of ARTC plant & equipment in use within their allocated area, ensuring the required activities are delegated to appropriately trained personnel and carried out safely. They are responsible for ensuring:

- The daily maintenance tasks such as completion of Daily Pre-Start Checks are carried out routinely using the correct format
- Refuelling and replenishment of appropriate top up oils and fluids is carried out
- Defects found with Plant & Equipment are duly noted in the relevant pre-start record book and then notified to the local Plant Coordinator or immediately rectified by a team allocated Fitter.
- That cautionary “Out of Service” tags are placed on equipment found to be defective within their area of control to prevent further use until repairs can be completed
- That routine maintenance, inspection and repair of minor plant is carried out and documented for items within their area of control
- They provide clear direction to internal or contracted operators to ensure that the items of Plant & Equipment are:
  - Used for their intended purpose
  - Operated safely and within the design limits of the equipment
  - Not mistreated or damaged in any way.

## 1.5 Reference Materials

The following reference materials are applicable to this policy and procedure:

- Rail Safety Acts and Regulations in force nationally or by state as determined by the Office of the National Rail Safety Regulator (ONRSR)
- Commonwealth Work Health and Safety Act 2011
- Commonwealth Work Health and Safety Regulations 2011
- Managing the risks of plant in the workplace – Code of Practice

## 1.6 Standards

The following standards are applicable to this policy and procedure:

- ARTC WOS Engineering rolling stock standards
- Relevant Australian Standards including:
  - AS 4292 – Rail Safety Management
  - AS 3873 – Pressure Equipment – Operation & Maintenance
  - AS 3788 – Pressure Equipment – In service Inspection
  - AS 1636 – Tractors – Roll-over Protective Structures
  - AS 2294 – Earth Moving Machinery – Protective Structures
  - AS2550 – Cranes, Hoists and Winches
  - RISSB Rolling stock standards

## 1.7 Definitions

Within this document, the following definitions apply:

Term	Definition
Availability	The proportion of total time that an item of equipment is capable of performing its specified functions, normally expressed as a percentage.
Breakdown Maintenance	An equipment maintenance strategy, where no routine maintenance tasks are performed on the equipment. The only maintenance performed on the equipment is Corrective Maintenance, and then only after the equipment has suffered a failure.
Corrective Maintenance	Any maintenance activity which is required to correct a failure that has occurred or is in the process of occurring. This activity may consist of repair, restoration or replacement of components.
Minor Plant	Any item of plant that is hand operated only (ie non-driven plant)
Planned Maintenance	Any maintenance activity for which a pre-determined job procedure has been documented, for which all labour, materials, tools, and equipment required to carry out the task have been estimated, and their availability assured before commencement of the task.

<b>Term</b>	<b>Definition</b>
Plant	Includes any machinery or equipment and any component thereof. For this procedure, hand tools are not considered to be plant.
Predictive Maintenance	An equipment maintenance strategy based on measuring the condition of equipment in order to assess whether it will fail during some future period, and then taking appropriate action to avoid the consequences of that failure.
Preventative Maintenance	An equipment maintenance strategy based on replacing, overhauling or remanufacturing an item at a fixed interval, regardless of its condition at the time.
Reliability	The capability of an asset to continue to perform its intended functions.
Repairable or Rotable item	A rotable component is one which, when it has failed, or is about to fail, is removed from the asset and a replacement component is installed in its place. The component that has been removed is then repaired or restored, and placed back in the maintenance store or warehouse, ready for re-issue.
Re-sleepering Equipment	Re-sleepering equipment works as a consist of a number of different machines each of which performs individual functions in the replacement of railway sleepers.
Resurfacing Equipment	Resurfacing equipment typically consists of track tamping machines and ballast regulators, which as a consist, are capable of realigning an operating rail line to meet the required survey locations and track geometry conditions.
Utilisation	Is a measure normally expressed in terms of a percentage (%) recognising the proportion of time a piece of equipment has actually been used over the time it was available for use; ie hours used / (total time less downtime).

## **2 Plant Maintenance**

### **2.1 Maintenance Objectives**

ARTC’s target for maintenance activities is to add value by safely delivering fit for purpose Plant & Equipment to our customers which delivers a reliable, value for money service, taking into account both the unit production costs and capital expenditure.

In achieving this goal, it is imperative to have a predetermined maintenance plan emphasizing the pro-active rather than reactive actions for key production assets. This plan is to be clearly communicated to workers so they can understand their contribution to achieving it. ARTC’s Plant Maintenance workers are required to have a clear understanding of their roles and responsibilities, with defect elimination and reliable equipment performance being a clear priority to all maintenance personnel.

## 2.2 Technical Maintenance Plans

Technical Maintenance Plans (TMP) will be developed and implemented for the various major equipment classes. These TMP's shall be in the format as shown in form EPP3202F-04 which details the complete life cycle maintenance needs and shall address (where relevant):

- Predicted life of equipment until economic to replace, undergo major refurbishment or planned disposal
- Service intervals, preventative maintenance tasks, scheduling frequency and sequence
- Predictive maintenance tasks including proposed condition monitoring activities
- Component items identified as technically feasible and economically viable to be maintained on a condition based predictive maintenance program
- Component items identified as most economically maintained on a preventative maintenance basis, and the frequency of that maintenance cycle, method of measurement of the cycle duration (e.g. operating hours, full load hours, calendar time, etc).
- Component items identified as most economically maintained on a breakdown or corrective maintenance basis
- Methods for the control and inspection of pressure vessels, lifting equipment and other high risk plant.

These TMP's will be developed according to guidelines and recommendations supplied by the Original Equipment Manufacturer (OEM) where available and may be optimized for local operating conditions through the relevant experience of competent persons.

Where scheduled maintenance activities are identified, these will be directly implemented as Maintenance Scheduled Tasks (MST's) in the Ellipse maintenance management system. All equipment and MST changes or additions in Ellipse are to be processed following the completion of an approved Change Authorization Form (CAF) as defined in configuration management procedure *EGP-03-02 Equipment Register – Updating and Maintenance*.

Technical Maintenance Plans and associated MST's are to be reviewed at least biennially (every two years) to ensure currency.

## 2.3 Maintenance Improvement Projects

It is essential to plan and act on opportunities for maintenance improvement. As opportunities are identified, through poor cost effectiveness or performance limitations, improvement options will be sourced and assessed to ensure ongoing issues are not inadvertently introduced by the proposed solution. Informally these assessment criteria may include:

- Cost and availability of alternate parts
- Reliability of supply
- Impact of the proposed change on other systems
- Need for fleet rollout to other like items of equipment



## 2.4 Maintenance Budget

Correct budgeting is an essential part of ARTC business focus & performance. The Plant Delivery Unit will compile an annual budget, which will focus on ownership, accountability and asset management. It should be produced with consideration of other relevant Asset Management teams to adequately reflect the ongoing needs of the business.

The desired budget outcome will be set up to achieve 100% recovery of maintenance costs, i.e. break even, through the annual Asset Management works plans. Daily Plant hire rates will be attributed to each piece of major plant to achieve cost recovery and to ensure accurate costing of Plant to individual project and line segments. Plant hire rates may be adjusted on a six monthly basis in order to achieve the desired cost recovery rate.

It is intended that all major components, parts, maintenance labour & minor maintenance consumables be costed to the Plant Ledger in order to fully capture the true cost of owning & operating Plant within ARTC. Daily fuel usage and top up lubricants are charged directly to the project using the plant unless supplied on a wet hire basis.

The major cost drivers in the maintenance budget should be considered, along with plans for improvement, or opportunities to apply engineering effort, or replacement. This includes the high consumers of expenditure, work effort and/or planning resources. The cost of maintenance engineering support, workshop overheads and inventory management should be reflected in the maintenance budget.

Wherever capital expenditure is outlaid either for new pieces of equipment or for the overhaul / upgrade of existing equipment, an appropriate amount of depreciation shall be charged as an operating cost for that particular piece of Plant. The amount of depreciation charged shall be calculated using the relevant accounting & taxation standards. This increase in operating costs shall be directly reflected in the daily plant hire rate.

## 2.5 Equipment Performance Measurement

Reporting of Plant & Equipment operating performance parameters including measurement of productivity and downtime will be standardized for all key production equipment and based on accounting for 100% of the time available within planned track possessions.

All maintenance reasons for not operating during possession should be coded to downtime. Allocation of downtime will be on the basis of capturing the total downtime loss against the event which causes it in the first instance.

Opportunity maintenance undertaken in off-line production time i.e. no production need, is still to be coded to the relevant maintenance downtime category, but recorded separately to identify that it did not affect production at the time. The reporting of this component of maintenance downtime should always be distinguishable from the rest of maintenance downtime that did affect production.

Targets for equipment availability include:

- Shoulder Ballast Cleaner – 98% Availability (during possession)
- Resurfacing equipment – 95% Availability (during possession)
- Rolling Stock – 90% Availability (total time)

- Other Equipment – 85% Availability (total time)

Availability will be calculated as follows:

$$\% \text{ Availability} = \frac{(\text{TotalTime} - \text{Downtime})}{\text{TotalTime}} \times 100$$

Availability will be reported as the actual measurement and a trend over time to determine ongoing equipment performance. Alternate production based performance measures may also be developed in order to capture actual machine productivity.

Equipment reliability measures such as Mean Time Between Failure (MTBF) and Mean Time To Repair (MTTR) will only be calculated and tracked once maintenance data of sufficient quantity and quality is available for this type of information to be of benefit to the organization.

## 2.6 Maintenance Performance Review

Management, Plant Coordinators and the work team (where available) shall all be involved in reviewing the maintenance and budgetary performance of major plant including equipment operation/downtime, performance measures and spending against budget results. Where necessary a process of reviewing cases of poor performance to identify improvement opportunities, including evaluating support activities and regional differences that may be evident between teams. Outcomes of these performance reviews may be directly linked to individual performance agreements.

## 2.7 Maintenance Planning and Scheduling

A formal planning and scheduling function will exist in accordance with ARTC's Asset Maintenance Works Management Procedure *EGP-10-01*.

All work requests will be appropriately screened and have identified the resource requirements (materials, labour, contracts, tools, permits, other), and/or production equipment that needs to be made available to complete the task. Plans will at all times be integrated with the production planning function to minimize downtime.

The Plant Manager will identify work groups representing the main skill sets or Business Unit locations, and use the work group for planning and monitoring work group task loadings or production requirements. All work groups shall employ uniform standard jobs and scheduling frequencies for like equipment unless specific site conditions require alterations to be made.

The Ellipse Maintenance Management System will be used to manage and track the maintenance tasks from the initial request phase through to close out and history reporting. Plant and equipment improvements or changes (modifications) performed by maintenance crews should also be covered. The approval for these work requests will also include the appropriate technical review and endorsement of the change. This technical review shall consider:

- design limits, including safety/protection systems capability
- operating conditions in stable, start up, shutdown, and failure states
- material suitability
- fail safe conditions

- training/communication needs for operational personnel
- training/communication needs for maintenance/other personnel
- updated maintenance procedures and equipment maintenance strategies.

Feedback to originators of non-approved work requests will occur, communicating the reasons for not proceeding.

Maintenance scheduling shall be carried out on a maximum of 1 calendar month cycle. Planned work schedules should cover approximately 80% of the available work group capacity within the 30 day planning horizon, with amendments restricted to emergency items. At least a 3 month planning horizon is to be maintained for scheduling efficiency and planning purposes.

Work procedures and service instructions should be documented and used where available to assist workers to efficiently and safely perform maintenance tasks. Procedures will address the following:

- equipment isolation and tagging requirements
- special safety instructions or precautions to take
- equipment knowledge instructions or specifications, tools needed, reference material/instructions
- efficient job planning instructions.

Maintenance backlog should be monitored in both actual level and trend over time, covering both number of work orders / defect and the estimated effort hours.

Performance of work against the monthly schedule will be monitored, with a target of 100% compliance to the original committed schedule. Definition of work in compliance is if the task is completed prior to or within the defined latitude period. Significant causes of work schedule deviation will be investigated for lessons learnt and improvements in planning techniques or communication needs, attendance at planning meetings etc.

Critical maintenance tasks and statutory needs should be reviewed and reported to management if past their required dates. This includes escalating the management reporting level as they become further overdue.

Defects identified on Plant and Equipment shall be raised in the Ellipse system (primarily by the Plant Business Unit) when found / reported and closed out in Ellipse when repairs are affected to maintain an accurate maintenance history record. Repeating defects should be assessed for inclusion as a new MST in the TMP in order to minimize the risk or re-occurrence. Outstanding defects should be reviewed at least monthly per Work Group to ensure appropriate action is taken to remedy any outstanding faults. Defect prioritization and repair shall be managed according to the procedure *EPP-32-09 Plant Fit for Service Guideline*.

All completed work orders including job cards, work record/inspection sheets, invoices and supporting information should be filed electronically on a secure network drive for future reference in a format approved by the Plant Manager or Compliance Engineer. This file name shall include a reference to the original work order number. Alternative electronic storage within Ellipse may also be accepted once the system architecture is proven.

## **2.8 Rolling Stock**

ARTC owned and operated rolling stock shall be maintained in accordance with the approved in-house rolling stock maintenance standards, the ROA Manual of Engineering Standards & Practices and / or National Codes of Practice as may be developed from time to time. All maintenance activities shall be outsourced and conducted by qualified Rolling Stock maintenance providers in accordance with ARTC's Rail Safety Accreditation. Rolling stock shall at all times be in compliance with ARTC standard WOS 01 Minimum Operating Standards for Rolling Stock and EPP-32-06 ARTC Rail Vehicle Manual (when implemented).

## **2.9 Reliability Improvement**

Equipment selection and design will take account of past performance and reliability, existing standardization and rationalization of parts within the group. Equipment performance in existing operations will be reviewed, along with other industry experience, and the capability and commitment of the vendor to reliability engineering principals and product support. Life cycle costing analysis will be used where practical to determine the best design and equipment selection. Major equipment will be put through formal acceptance testing and commissioning procedures, to ensure all equipment conditions are as expected for correct service life, or allowance/corrections made.

Condition monitoring will be used where economically viable (and based on the suitability of condition monitoring techniques to reliably detect problems prior to failure condition) for all production equipment. However, the importance in establishing and maintaining programs will be focused on production critical equipment.

Training of plant maintenance personnel will be focused towards technical skills, equipment reliability management, and root cause failure analysis.

# **3 Support Services**

## **3.1 Contractor Usage**

Plant maintenance contractors will be used to support planned work demands, or as supplementary labour to cover peak demands in core work or for other areas as decided on an economic basis. The selection and use of contractors will be after a pre-qualification check of their competencies, capability and suitability to perform the work tasks, and will be supported by periodic evaluations of their ongoing performance standards.

Contractors engaged for Rail Safety work will be appropriately qualified and registered in the competency management system eg Onsite.

Contractors will be engaged using the preferred method according to current Procurement & Contracts procedures. Duration of engagement may be of an ad-hoc or long term nature.

Contractors engaged in the maintenance of ARTC owned equipment shall complete all necessary ARTC supplied maintenance documentation required to maintain an effective equipment maintenance history file and as may be required by the Ellipse system.

## 3.2 Supply and Inventory Management

The Supply system will be used for initiating requests for inventory and managing direct purchase of non-stock items. Inventory items including rotables awaiting use or installation will be managed by an effective system which ensures quantities and locations are recorded and visible to appropriate users. Inventory holdings will be aligned with equipment maintenance strategies and the maintenance planning cycle time frames, to determine the need for inventory based on procurement lead times, and delivery times etc.

Awareness of inventory holdings across all sites will be used to reduce overall inventory levels where possible. The objective will be to optimize the supply pipeline with just in time (JIT) delivery for items that are not of critical level.

Consumable stocks will be placed to best suit logistical needs of the Plant Business Unit in order to minimize downtime associated with parts delivery. Capital/Insurance spare parts will be shared, such that the minimum holding needed to support the probable usage for the group is determined. Common stock identification codes and catalogue information will be used across the network for identical items.

In order to ensure quality of workmanship and timely repair of major rotatable items, form EPP3202F-06 Plant Repairable Item – Scope of Work should be used to document the required repairs and to assist tracking of rotatable items through the repair process.

## 3.3 Workshop Support Services

Workshop sizing, facilities and locations (where available) will be aligned to suit the tasks and resource requirements as outlined above. Typically, workshops shall be in use where existing facilities are available on the rail corridor to allow direct access for rail bound vehicles.

Workshops shall be maintained in accordance with ARTC and statutory requirements for an operational work premises. WH&S compliance audits should be conducted in line with the annual audit program to ensure compliance with these regulations.

Workshop site budgets shall be managed effectively to provide accurate definition of running costs which form part of the maintenance overhead. The annual operating costs shall be distributed across the various major plant items on a fair & reasonable basis and recovered through the daily plant hire rate.

# 4 Plant Hire

## 4.1 Internal Plant Hire

The core function of the Plant Section is to provide fit for purpose Plant & Equipment at competitive hire rates for use by ARTC Asset Management Business Units to complete infrastructure works, which may include RCRM, MPM & Project works.

The Plant Business Unit provides to the end user:

- Plant & Equipment suitable to the required task
- Plant & Equipment which has been maintained in a state which is safe & fit for purpose

- Appropriate documentation to maintain the Plant & Equipment on a daily basis
- A service for the procurement of additional or replacement plant items
- Technical support on Plant items
- Assessment of new opportunities for the introduction of innovative Plant items
- Wet hire full service delivery eg Shoulder Ballast Cleaning activities

In return, the Asset Management division provides a fee for service on the hire of specific Plant items. This may include ongoing standing hire of plant items to particular teams and or supply of specialized or peak load plant from a pool of available equipment.

The internal plant hire system nominally operates on a dry hire basis and is inclusive of all registration, parts and maintenance labour costs, but exclude operating labour, fuel, minor consumables & top up oils & fluids. Plant hire rates are recovered predominantly through the Works Ledger in the ARTC Finance system. It is the responsibility of the Asset Management end users to manage the monthly charge out of plant hire rates to the Works Ledger. The Plant Business Unit may process some financial plant hire transactions in order to facilitate the process.

The Plant Business Unit reserves the right to back charge Asset Management end users for plant which is either in operation and not correctly or accurately costed to the Works Ledger, or for plant which has low utilization yet is not available for hire to other end users. This monthly process known as Idle Time recovery is journalled at the completion of each financial period (month) to the General Ledger account of the plant operator and may recover up to the agreed 19 days minimum hire amount applicable to these plant items.

An annual assessment of the calculated plant hire rates may be undertaken by a third party, external to the Plant Business Unit to ensure the calculation model is correct and reflects current and projected costs.

## 4.2 External Plant Hire

The hire of plant from sources external to the Plant Business Unit is generally managed through the Procurement & Contracts Department according to the approved Plant & Equipment Hire Procedure *FCO-PR-023*. Suppliers of this plant are required to conform to all relevant ARTC standards, policies and procedures. The ARTC Plant Business Unit may from time to time perform spot audits on externally hired plant at ARTC work sites to assess compliance with the relevant safety standards using form *EPP3202-F05 Onsite Plant Inspection Report*. Copies of inspection reports will be provided to the local ARTC Team Manager / Project Manager and the Supplier. Any deficiencies noted must be acted upon accordingly. Hazardous or Safety Critical items identified may result in the hired plant being stood down from service until rectification works are undertaken. The Engineering form *EPP3202F-07 Contracted Plant Delivery Report* may be used by on site personnel to conduct a basic pre-work compliance check of externally hired plant.

External hire of specialized or large plant items may from time to time be managed through the Plant Business Unit using a defined contractual arrangement.

### 4.3 Hire of ARTC Plant to External Parties

From time to time the Plant Business Unit may make ARTC owned Plant available to external parties for short or long term hire. In these instances priority will always be given to internal Asset Management requirements before external needs are met.

Specific contract hire rates and documentation will be used in these cases to ensure ARTC's interests & assets are protected at all times. Approval for the release of Plant to external sources lies with the Plant Manager or following directives from a higher delegated authority.

## 5 Plant Safety

### 5.1 Plant Safety Requirements

The Engineering Procedure EPP-32-03 General Plant Requirements identifies operational, safety and design standards to which plant used in the ARTC rail corridor shall comply. This includes ARTC owned and operated plant, externally hired plant and new plant intended to be purchased by ARTC. This document acts as a reference tool and provides brief descriptions of the compliance requirements and intent when considering various Plant features and systems. The Engineering Form EPP3202F-01 Plant Hazard Analysis details the process for completing a plant hazard analysis, risk assessment and an action plan for implementing controls.

A risk assessment shall be undertaken on all new items of plant, once a year for existing major plant, every second year for minor plant, and whenever significant modifications or design changes are made to these plant items plant. This shall be facilitated by the Plant Business Unit.

A suitably designed third party plant risk assessment system may also be utilized to fulfill these requirements.

Externally hired plant should also be supplied with a suitable risk assessment identifying current hazards and existing controls. More complex plant based activities especially those related to on-track operations should utilize the RM-01 Risk Management framework to ensure a SFAIRP process is followed for risk control measures.

### 5.2 Plant Inspection Requirements

The Engineering Form EPP3202F-02 Plant Inspection Requirements provides an audit checklist to be used for the annual plant safety inspections. These inspections are normally conducted or arranged by the relevant Plant Coordinator for internal ARTC plant. Additional ad-hoc inspections may be arranged if deemed appropriate to ensure compliance is maintained. This inspection schedule may also be used to check compliance of externally hired plant to ARTC safety standards.

The Engineering Form EPP3202F-03 Daily Plant Record Book details the requirements for recording pre-start inspections of plant on a daily basis. This document is printed in carbonless multi-part books for use in each item of Plant. A generic pre-start inspection checklist is included inside the front cover of the book for reference. A plant inspection book of this type shall be in use for each item of major plant where it can be safely stored for regular use unless a type specific pre-start form is available. Items which form attachments to larger pieces of Plant shall be noted in the record book of the prime piece of plant as having been inspected and suitable for service e.g. slashers, blades, tamping heads, undercutters, sleeper grabs, jibs, etc.

The EPP3202F-05 On-Site Plant Inspection Report has been developed to primarily check the compliance of externally hired plant to ARTC plant safety standards. This form will be printed in a multi-part carbonless book for use in the field. Copies can then be provided to the plant owner/operator and the works supervisor whilst on site with one copy retained in the book. This form may also be used to undertake audits on ARTC owned plant.

It is the responsibility of the local Team Manager to ensure that daily plant inspections are carried out on all items of plant which are in use. This includes recording any defect found and the current engine hour meter reading. It is recommended that plant not in use still has a plant inspection report completed and returned to the local Plant Coordinator. In this case the words "Not In Use" shall be entered into the daily record column.

### 5.3 Track Maintenance Vehicles

Items of plant defined as "Track Maintenance Vehicles" in Engineering Standard WOS 01.700 Track Maintenance Vehicle Specific Interface Requirements, shall comply with the requirements of this and other relevant Rolling Stock standards in the WOS 01 suite of documents. These standards define issues specific to road/rail and rail bound equipment and compliance with these standards is imperative to ensure the safety of both personnel and plant is maintained whilst operating within the rail corridor.

### 5.4 Hi-Rail Vehicles

Items of plant and motor vehicles defined as "Road/Rail Vehicles" in Engineering Standard WOS 01.700 Track Maintenance Vehicle Specific Interface Requirements, shall comply with the requirements of Engineering Procedure EPP-32-04 *Installation & Maintenance Policy – Rail Guidance Systems* and other relevant Rolling Stock standards where applicable.

## 6 Plant Procurement & Disposal

### 6.1 Procurement of Plant Items

All new plant regardless of defining category shall be sourced, selected and ordered according to procedures defined in Engineering Standard EPP-32-05 Plant Procurement and Disposal *Policy*. Approval of major plant replacements shall remain with the Plant Manager and shall be driven by a rolling 5-10 year plan detailing priority items likely to affect asset performance, operating cost and / or reliability. Minor plant items will be purchased by the Plant Business unit in consultation with the relevant operational Business Unit. Approval for the annual or any adhoc spend will be sought from the relevant Delivery Manager prior to order placement.

Where new major plant is brought on line, appropriate hazard analyses, technical maintenance plans and maintenance scheduling procedures shall be implemented to ensure compliance with the above Maintenance Policy and procedures.



## 6.2 Disposal of Plant Items

Existing plant shall only be disposed if deemed to fulfill one of the following categories:

- Redundancy due to direct replacement
- Un-economical to repair
- No longer technically adequate or safe to operate for the intended function
- Surplus to requirements

All plant shall be disposed in accordance with Procurement policy guidelines and Engineering Standard EPP-32-05 Plant Procurement and Disposal *Policy*.

Maintenance history for disposed plant shall be retained in accordance with Government guidelines.

## Appendix 1 – Related Plant Documents

- EPH-32-01 Plant Fit For Service Guideline
- EPP3202F-01 Plant Hazard Analysis
- EPP3202F-02 Plant Inspection Requirements
- EPP3202F-03 Daily Plant Record Book
- EPP3202F-04 Technical Maintenance Plan – Machine Specific
- EPP3202F-05 On-Site Plant Inspection Report
- EPP3202F-06 Plant Repairable Item – Scope of Work
- EPP3202F-07 Contracted Plant Delivery Report
- EPP3202F-08 Plasser 08-16 Production Tamper Daily Pre-Start Inspection
- EPP3202F-09 Plasser 09-16 Continuous Action Tamper Daily Pre-Start Inspection
- EPP3202F-10 Plasser PBR203 Ballast Regulator Daily Pre-Start Inspection
- EPP3202F-11 Plasser DTS-62N Dynamic Stabiliser Daily Pre-Start Inspection
- EPP-32-03 General Plant Requirements
- EPP-32-04 Installation & Maintenance Policy – Rail Guidance Systems
- EPP3204F-01 Pre-Start Inspection Report – Rail Guidance Systems
- EPP3204F-02 Rail Guidance System Maintenance Inspection
- EPP3204F-03 Road Rail Vehicle Twist Compliance Inspection
- EPP3204F-04 Road Rail Vehicle Pre-Start Inspection Reference Guide
- EPP3204F-05 Road Rail Excavator Daily Pre-Start Inspection
- EPP-32-05 Plant Procurement and Disposal
- EPP3205F-01 Plant Handover Acceptance Certificate
- EPP3205F-02 Plant Disposal Record
- EPP-32-06 Rail Vehicle Manual
- EPP-32-07 Maintenance Policy - Event Data Recorders
- EPP-32-08 Operating Instruction for Tacholink T5, Black Box, Millennium & Vigilance Control Systems
- EPP-32-09 Lock-Out, Tag-Out Procedure
- EPP-32-10 SBC Integrated Management Plan
- EPP-32-11 SBC Fatigue Management Plan
- EPP-32-12 SBC Pre-Start and Operational Procedures
- EPP3212F-01 SBC Daily Pre-Start Inspection
- EPP3212F-02 SBC Brake Function Test