

National Manual of Assets and Facilities Management Volume 6, Chapter 4

Maintenance Plan Writers Guide Procedure

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Maintenance Plan Writers Guide Procedure

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Maintenance Plan Writers Guide Procedure

Table of Contents

| | | |
|------------|--|----------|
| 1.0 | PURPOSE | 5 |
| 2.0 | SCOPE | 5 |
| 3.0 | DEFINITIONS | 6 |
| 4.0 | REFERENCES | 7 |
| 5.0 | RESPONSIBILITIES | 8 |
| 6.0 | PROCESS | 8 |
| 6.1 | Introduction | 8 |
| 6.2 | Relationship with Maintenance Procedures | 9 |
| 6.3 | Maintenance Plans Writing Sequence | 10 |
| 6.4 | Maintenance Plan Standard Requirements | 11 |
| 6.4.1 | Maintenance Types | 11 |
| 6.4.2 | Technical Standards | 12 |
| 6.4.3 | Engineering Delivery | 12 |
| 6.4.4 | Work Management Center | 13 |
| 6.4.5 | Risk Management | 14 |
| 6.4.6 | Health and Safety | 14 |
| 6.4.7 | Quality | 15 |



1.0 PURPOSE

This Procedure provides advice on how a Maintenance Plan Writer should approach the writing of Maintenance Plans, the content of the Plans and the Standard to which the Maintenance Plan's content should adhere.

This Procedure will enable a writer, or team of writers, to create high quality Maintenance Plans that compile the technical advice and instructions necessary to ensure that maintenance is carried out in a consistent and repeatable manner by means of Maintenance Procedures and Work Control. This will ensure best practice is applied and the flow of high quality information to and from the CMMS and Asset Management Team, thereby promoting consistency across engineering disciplines, and asset and system types.

Maintenance Plans are a key tool in moving a maintenance operation away from a reactive model to an Intelligent Maintenance model and to better connect Operations and Asset Management.

2.0 SCOPE

This Maintenance Plan Writer's Guide Procedure sets out the minimum acceptable quality of the content including the breadth of inclusion of stakeholders and factors affecting the conciseness and completeness of Maintenance Plans.

A Maintenance Plan is a document that addresses the requirements for the delivery of maintenance to an entire system, or group or type of asset, and advises on the maintenance type selection and to what standard the asset will be maintained. A Maintenance Plan consists of many aspects, including the use of Job Plans, as part of Work Orders to deliver the intended maintenance approach.

The Requirements Standard set out in this Procedure document provides the requirements, specifications, guidelines and characteristics that should be incorporated in to Maintenance Plans to ensure Maintenance Procedures and Work Control are provided with a consistent high quality of technical literature that is fit for their purpose.

This Procedure is applicable across varying types of contracts and operating models, including multi-site contracts, out-sourced delivery model and specialist environments. This Procedure is intended for application within a hard services maintenance environment, although its principles are applicable to the soft services environment.

This document resides within the context of several related documents within Volume 6. In particular, references should be made to sections of Volume 6 titled 'Conduct of Maintenance' and 'Types of Maintenance'. Maintenance Plans are essential to the writing and execution of Maintenance Procedures, Work Performance and Work Closeout. Refer to Volume 7 for more guidance.

A Maintenance Plan needs to provide all the information needed for the Maintenance Procedure to be followed. A high-level graphical description of a Maintenance Procedure is included in this document and should be referred to when writing a Maintenance Plan.

A Maintenance Plan should present all relevant advice to assist the following stakeholders in carrying out their responsibilities:

- Contracts/Bid Writer.
- Mobilization Manager/Team.
- Human Resources Recruiter.
- Stores/Procurement Manager.
- Computerized Maintenance Management System.
- Asset Management Team.
- Operations Team.
- Property Management Team.
- Supply Chain Team.

This Procedure is applicable to all maintenance types.



3.0 DEFINITIONS

| Term | Definition |
|------------------------|---|
| Best Practice | A method or technique that has been generally accepted as superior to any alternatives because it produces results that are superior to those achieved by other means or because it has become a standard way of doing things (such as a standard way of complying with legal or ethical requirements). |
| Building | A civil engineering structure that houses people and/or equipment. |
| Consumable | Physical part of an engineered system, Personal Protective Equipment (PPE) or a cleaning, treatment or preservative liquid or compound whose consumption or use as part of a maintenance task is necessary and predictable. |
| Corrective Maintenance | Refer to Volume 6 for Types of Maintenance. |
| Criticality | Typically, a 4-5 level ranking system that categorizes the importance of the component, asset or maintenance task. Refer to Volume 2. |
| Equipment | Plant that is designed to be mobile or requires erecting or putting together in order to be used, such as scaffolding. |
| Facility | The term for the group of fixed civil engineering assets that are not a building, for example, a bridge, a mast, a harbor. |
| Frequency | Refers to a cyclic time period. |
| Inspection/inspect | Activity of non-contact visual observation of a stationary or operating asset. |
| Job Plan | A list of pre-designed tasks that are recommended to be performed at certain frequencies on plant. Different frequencies will have different Job Plan details (i.e., tasks). See Task List. |
| Maintenance Levels | The complexity of maintenance activity related to the skillset/competence level and experience of the operative, sometimes referred to as Task Level. For example: <ul style="list-style-type: none"> • Level 1: Reset • Level 2: Inspection • Level 3: Replacement |
| Maintenance Procedures | Maintenance Procedures state the activities associated with the execution of maintenance work, from pre-start to completion, with activities at both the maintenance contractor's management office and 'on site', involving technical and non-technical people. |
| Material resources | Includes consumables, tools, software. |
| Monitor | See Facility Surveillances. |
| Parameter | The name of a unit or metric, for example, 'pressure', 'velocity', 'temperature'. |
| Plan | Compilation of activities, procedures, resources and schedules to achieve an outcome. |
| Planned Maintenance | Refer to Volume 6 for Types of Maintenance. |
| Predictive Maintenance | Refer to Volume 6 for Types of Maintenance. |
| Program | Same as Schedule. Refers to the time basis of the delivery activity. |
| Reactive Maintenance | Refer to Volume 6 for Types of Maintenance. |
| Regime | The collective noun for Maintenance Plan applied to an asset, system, facility or building. |
| Repair | The physical activity of carrying out a remedial Work Order. |
| Run to Failure (RTF) | A maintenance type where the asset is deliberately not maintained but allowed to run until it fails. |
| Satisfactory | Fulfilling the requirements, needs or expectations. |
| Schedule | Same as Program. Refers to the time basis of the delivery activity. |
| Skillset | Refers to one or more work related skills of a person. Sometimes referred to as Craft Code. |
| Specialist Part | A component or part of a system that is not expected to fail or be replaced. Specialist parts may have a failure code within the SLA/KPI context that is different to Part. |



Maintenance Plan Writers Guide Procedure

| | |
|------------------------|---|
| Subsystem | A part of a system that can operate independently of a system (a pressurization unit is a subsystem of a water system). |
| System | An arrangement of components and parts that, when combined, perform a desired function. |
| Task List | A list of tasks that, when combined in various combinations, can constitute a Job Plan. See Job Plan. |
| Test | Verifying by means of observation or measurement that the system meets the expected and/or acceptable requirements. |
| Threshold | Numerical value of a parameter at which a decision is made. |
| Tool | Manual or powered hand-held devices, including electrical test meters. |
| Unplanned Maintenance | Refer to Volume 6 for Types of Maintenance. |
| Unsatisfactory | Fails to fulfil the requirements, needs or expectations. |
| Work Management Center | Team/office responsible for the management of planning and execution of resources to meet the needs of planned and unplanned contractual and customer requirements. Refer to Volume 7 Work Control. |
| Acronyms | |
| CMMS | Computerized Maintenance Management System |
| ETSI | European Telecommunications Standards Institute. |
| FM | Facilities Management |
| JHA | Job Hazard Analysis (see POWRA) |
| KPI | Key Performance Indicators |
| MCCB | Molded Case Circuit Breaker |
| O&M | Operations and Management |
| POWRA | Point of Work Risk Assessment. A short checklist that Operatives refer to at the location of and immediately before carrying out a task. See JHA. |
| PPE | Personal Protective Equipment |
| PTW | Permit to Work. A safety management documented system adopted by most organizations for management of high-risk work activities. |
| RAMS | Risk Assessments and Method Statements. |
| SLA | Service Level Agreements |

4.0 REFERENCES

- A Guide to writing world class standards. © European Telecommunications Standards Institute (ETSI) 2013
- Building Services Research and Information Association (BSRIA) Computer-based Operating and Maintenance Manuals – options and procurement guide
- National Manual of Assets and Facilities Management (NMA&FM) – Volume 3, Chapter 3 – Condition Assessment
- National Manual of Assets and Facilities Management (NMA&FM) – Volume 6, Chapter 3 – Preventive and Predictive Maintenance Program Procedure
- National Manual of Assets and Facilities Management (NMA&FM) – Volume 6, Chapter 4 – Development of Maintenance Plans Procedure
- National Manual of Assets and Facilities Management (NMA&FM) – Volume 7 – Work Control
- National Manual of Assets and Facilities Management (NMA&FM) – Volume 10 – Safety, Health and Environment
- National Manual of Assets and Facilities Management (NMA&FM) – Volume 11 – Quality
- National Manual of Assets and Facilities Management (NMA&FM) – Volume 13 Document Management



5.0 RESPONSIBILITIES

| Role | Description |
|-------------------------|--|
| Maintenance Plan Writer | Suitably skilled person responsible for writing the Maintenance Plan |
| Decision Maker | Suitably skilled person responsible for making the decision of when to carry out the reactive maintenance in a Predictive Maintenance Type environment. Sometimes also referred to as Analyst. |

6.0 PROCESS

6.1 Introduction

Maintenance Plans are a key document in any maintenance focused organization and, while necessarily having a wide scope, must remain concise and focused. Depending on the situation, Maintenance Plans are written at a component to system level.

Maintenance Plans are applicable to all engineering disciplines and types of assets, systems and components. Within the built environment, Maintenance Plans can be applied to the full range of engineering assets and systems including civil engineering such as, but not limited to, buildings and infrastructure assets (bridges and roads), as well as to mechanical and electrical building services systems such as plumbing, air conditioning, Building Management Systems and lighting systems. Within these disciplines, Maintenance Plans are also applicable to specialist systems such as traffic management assets, medical gas systems, baggage handling equipment and intruder detection systems.

Maintenance Plans are applicable to all maintenance types, (refer to 'Types of Maintenance' and 'Preventive and Predictive Maintenance Program Procedure' for further information).

Maintenance Plans are required to state the maintenance type or types selected, explaining the contribution of all factors affecting the selection including availability of data and skillsets, organization direction, operational environment, business risk, statutory compliance and contractual instructions. A key component of a Maintenance Plan is the information that is provided for the Maintenance Procedure (i.e., the Work Order template).

The aim of a Maintenance Plan is to provide all the information needed by the various stakeholders who tender, recruit, and engage resources; plan and schedule maintenance activities; and provide advice on opportunities for continuous improvement and potential risks. Therefore, a Maintenance Plan Writer must consider the connections and dependencies between Asset Management, Operations Management, financial and performance management, Supply Chain Management (Inventory), business reputation and Health and Safety.

The Maintenance Plan Writer must consider and address in detail the execution of all type and levels of maintenance, and direct, indirect, and consequential activities so as to ensure that all stakeholders, who refers to the Maintenance Plan for instructions, have all the information they need to be able to meet their responsibilities.

While Maintenance Plans should be holistic and comprehensive, yet concise, they reside within the context of other operations and maintenance documents, and hence:

- DO NOT address 'Definitions and Descriptions', Maintenance Procedures, Work Control instructions or Post Maintenance Testing, though they contribute to these.
- DO NOT address Operations Management or issues.

Writers should refer to the references in Section 4 to ensure that Maintenance Plans are written in the context of adjacent related documents.

Maintenance Plans need to be useful to many readers. Therefore, they must be written by a knowledgeable and competent Technical Writer within an effective quality assured environment.



Maintenance Plan Writers Guide Procedure

Maintenance Plans present the writer with the opportunity to adopt the latest best practices and innovative thinking, including improvements to the integration of Asset Management and Operations Management. When writing the Maintenance Plan for a specific contract, building, asset or facility, the opportunity requires the writer to offer advice on how to change or develop the maintenance practices that exist, as this will improve the performance of the Works Control and Operational Management teams. When Maintenance Plans are being written for a known specific building, the opportunity to provide a higher degree of targeted site-specific advice should be taken.

Maintenance Plans are dynamic documents and should be reviewed as part of a continuous improvement initiative. This review should be performed every two years as a minimum, unless the client or contractor organization has specific requirements for documents of this type. This periodicity is not to exclude adoption of improvements arising from continuous improvement opportunities.

The outcomes of a maintenance operation that is predominantly unplanned in approach are high cost and low asset performance. Expro's goal is to improve the efficiency and effectiveness of Facilities Management through a greater adoption of planned maintenance so as to achieve the goal of Intelligent Maintenance, thereby optimizing cost against performance.

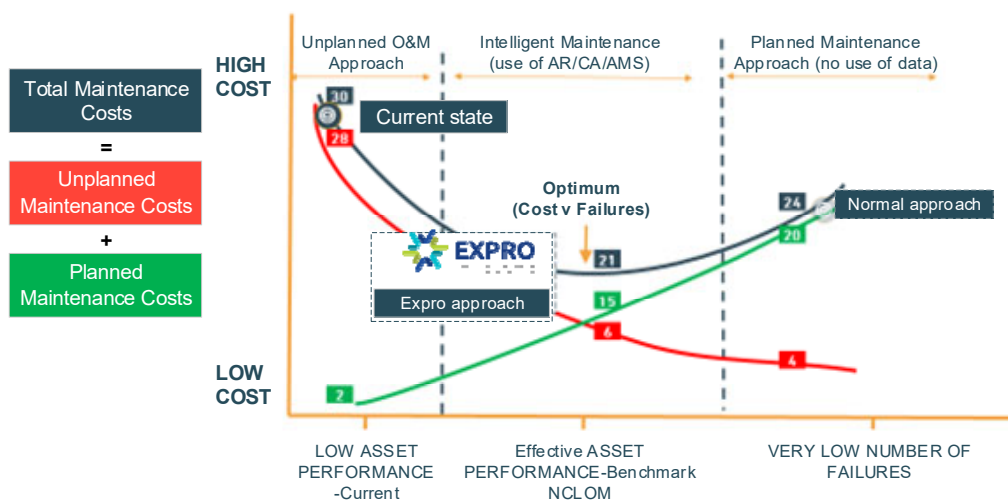


Figure 1: Expro Maintenance Philosophy – optimizing for Intelligent Maintenance

Figure 1 (above) illustrates the relationship and opportunities provided by unplanned and planned maintenance. This relationship should be considered when writing Maintenance Plans.

6.2 Relationship with Maintenance Procedures

Maintenance Plans are essential to the writing and execution of Maintenance Procedures. A Maintenance Procedure Writer's Guide is designed to guide the individual responsible for ensuring that work is carried out in a consistent and reliable manner. A Maintenance Procedure engages back-of-house and front-line delivery personnel who rely on the content of Maintenance Plans to guide their actions and decision making.



Maintenance Plan Writers Guide Procedure

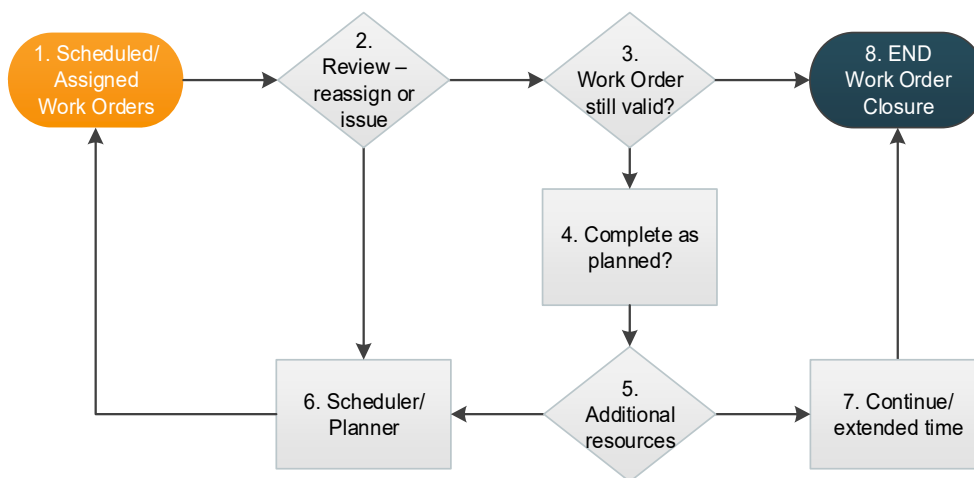


Figure 2: High level flowchart: Maintenance Procedure

The high-level flowchart above illustrates the typical route that planned maintenance work takes. A detailed Maintenance Procedure flowchart, based on this high-level flowchart, would typically have approximately 50 boxes and be complemented with a narrative explaining each step.

6.3 Maintenance Plans Writing Sequence

The following is a sequence to guide a Writer on how to approach drafting 'first' Maintenance Plans. For developing existing Maintenance Plans, refer to this document and also NMA&FM Volume 6, Chapter 4 – Development of Maintenance Plans.

The writing of Maintenance Plans shall meet the needs of the entire maintenance organization, including meeting the client's expectations through meeting any relevant contract requirements.

A structured approach to writing Maintenance Plans should follow this sequence:

1. Draft high-level flowchart(s) that records stakeholder connections
2. Draft high-level statement(s) against each of these stakeholder relationships
3. Draft the document layout model based on the Standards Requirements and guidance in this Writers Guide
4. Draft the content based the Requirements and guidance
5. Consider and revise design to ensure quality, consistency and compliance will be achieved
6. Develop a checklist to ensure quality, consistency and compliance is achieved

The Writer should return to the beginning of this sequence and identify if any item has been missed or the response could be improved following the experience of the development of the later steps.



6.4 Maintenance Plan Standard Requirements

Maintenance Plans for any maintenance type on any asset, system or facility should address the following aspects and will address the following specifics:

6.4.1 Maintenance Types

6.4.1.1 Maintenance Type Selection Requirements

- Plans shall make clear and robust recommendations on the selection of one or more of maintenance types.
- Plans shall make a clear link to the understood, likely or declared criticality of the asset or system, or key component within each system.
- Plans shall highlight KSA statutory compliance motivations for the applicable maintenance tasks (insurance inspections, public safety, air and water pollution, asbestos, etc.) and their impact or restrictions on maintenance type selection.
- Plans should briefly outline the options and suitability of unplanned or planned maintenance types applied to specific system types and, when applicable, to the specific installed system or systems.
- Plans should acknowledge the level of suitability of these maintenance types, including the actual/likely availability of specific or generally available information that guides the setting of frequencies, detailing of tasks, skill requirements (frontline and back-of-house) and material resources. Refer to NMA&FM Volume 6, Chapter 3 – Preventative and Predictive Maintenance Program Procedure.
- Plans should make a clear link to financial and performance abilities, Supply Chain Management (Inventory), business reputation and Health and Safety.
- Plans should make clear recommendations on improving O&M/FM efficiency and effectiveness by optimizing cost versus failures, specifically the adoption of Intelligent Maintenance.
- Plans should highlight known or likely situations that may cause deferred maintenance and provide advice on how to risk assess, manage and mitigate for the deferral. Plans should provide this advice as it pertains to the recommended maintenance type (Refer to Volume 3 for advice on Deferred Maintenance).

6.4.1.2 Maintenance Requirements

- Plans shall set/declare the type selection of unplanned, planned maintenance against each asset or system type.
- Plans shall adopt, list, describe and assign a coding system for Maintenance Levels so that these are available when assigning tasks to human resource.
- Plans shall adopt, list, describe and assign a coding system for skillset levels so that these are available when assigning tasks to human resource.
- Plans should acknowledge the contribution of regional, climatic/natural condition, and operational factors in the selection of maintenance type.
- Plans should set/declare the requirement for inclusion of metrics/parameters and likely frequencies for a range of tasks applicable to each engineering discipline and/or asset/structure/system.
- Plans should acknowledge the role of Service Level Agreements (SLAs) and Key Performance Indicators (KPIs) and refer to the appropriate document.
- Plans should highlight and recommend any demarcation or other practicality issues that may require specific SLA or KPI tailoring.

6.4.1.3 Preventive and Predictive Maintenance Requirements

- Plans shall, whenever possible, set or declare the selected maintenance type against each asset or asset type/group.
- Plans should highlight the actual or likely preventative maintenance opportunities available against each asset or asset type/group.
- Plans should acknowledge the role of SLAs and KPIs associated with these maintenance types.



Maintenance Plan Writers Guide Procedure

- Plans should consider the demand operational planning, for example avoiding extensive planned maintenance activities during peak operational periods.
- Plans shall recommend the frequencies of planned maintenance, and specifically for predictive maintenance, the methodology for each measurement task for each component/subsystem.
- Plans recommending predictive maintenance should highlight the actual or likely predictive maintenance opportunities available against each asset or asset type/group.
- Plans recommending predictive maintenance shall recommend the technologies required, including the most appropriate tools, and their calibration requirements.
- Plans recommending predictive maintenance shall recommend the threshold for remedial action arising from predictive maintenance measures, and whether these are related to a statutory requirement.
- Plans recommending predictive maintenance should specify the skillset and organizational position of the 'decision maker'.
- Plans recommending predictive maintenance should provide advice on the available technology for monitoring the condition, including whether it is locally or remotely monitored, and common measuring frequencies.

6.4.1.4 Unplanned Maintenance Requirements

- Plan shall, whenever possible, set or declare the selected maintenance type against each asset or asset type/group.
- Plans should highlight the actual or likely unplanned maintenance (Run to Failure) opportunities available against each asset or asset type/group.
- Plans should justify the selection of a 'run to fail' approach against each asset or asset type/group. Refer to NMA&FM Volume 6, Chapter 3 – Preventative and Predictive Maintenance Program Procedure.
- Plans should acknowledge the role of SLAs and KPIs associated with this maintenance type.
- Plans should highlight the likely failure classes to be experienced against each asset or asset type/group. Example failure classes are fail-safe, dangerous, catastrophic, consequential, and systematic. This focus will help risk assess the suitability and likely consequences of selecting unplanned maintenance as the adopted type.

6.4.2 Technical Standards

6.4.2.1 Technical Requirements

- Plans shall specify the technical requirements of each maintenance task (the water quality criteria, fire door/shutter closing times, fire hydrant flow rate and pressure, Molded Case Circuit Breaker (MCCB) response times, etc.).
- Plans shall state the source of the technical requirements, indicating if these arise from statutory, industry, manufacturer, national, local or organizational requirements.
- Plans may reference the source rather than duplicate the requirement.
- Plans shall acknowledge and clearly identify when statutory and non-statutory/contract requirements appear adjacent to each other (such as an annual statutory fire alarm maintenance test supplemented by sector-specific weekly checks within the healthcare, air traffic and oil & gas industries).

6.4.3 Engineering Delivery

6.4.3.1 Engineering Requirements

- Plans shall be specific to the component, subsystem, system, building and site whenever under manufacturer or installer warranty.
- Plans shall offer advice regarding geography and climatic considerations (desert/dusty; coast/humid; city/pollution specific to KSA).
- Plans should discuss the advantages and disadvantages of either outsourcing, in-house or hybrid resourcing models applicable to the asset type or group, in particular for Out-of-Hours cover.



Maintenance Plan Writers Guide Procedure

- Plans should identify potential opportunities, provide advice on possible challenges, and recommend solutions on transformation from common or existing practices where these are considered poor.

6.4.3.2 Job Plan/Task List Requirements

- Plans should specify where operational or conditional indicator measurements should be taken from, their likely location in a plant, and the form the indicator takes (such as analogue dial or keypad).
- Plans should recommend the adoption of condition scoring methods rather than tick boxes (such as 'satisfactory', 'not satisfactory'), whenever applicable. A 6-point condition scoring system (New to Very Poor) is recommended. Refer to NMA&FM Volume 3, Chapter 3 for further guidance.
- Plans should instruct on the likely need for tidying and cleaning of the work area and reinstatement of furniture, cabling, paving/kerbs, ceiling tiles, for example, that have been dirtied and/or moved during the maintenance activity.

6.4.4 Work Management Center

6.4.4.1 CMMS Requirements

- Plans shall include a list of tasks and likely, recommended, or compliant frequencies.
- Plans may refer to an industry resource with specific or likely tasks numbers or state other guidelines.
- Plans should recommend the storage method for recorded values ('data points') (such as within the CMMS or other approved centralized recording and analysis medium, when trend analysis or threshold values are applicable).
- Plans should identify potential opportunities for updates to maintenance activities that provide cost savings and efficiency.

6.4.4.2 Planning Requirements

- Plans shall state against each technical activity, the minimum skillset or competence level required.
- Plans should identify the need for Point of Work Risk Assessment (POWRA)/Job Hazard Analysis (JHA), Risk Assessment / Method Statement (RAMS), Permit to Work (PTW) or other safety/competency control measure against each task.
- Plans should identify site-specific rules (such as permits requirements of sensitive airport areas), against each task, where applicable.
- Plans should state the likely duration ('tool time') and human resources required for each technical task.
- Plans should identify issues related to tasks being carried out during peak operational hours or other business-related time cycles.
- Plans should consider the demand operational planning, for example avoiding the extensive planned maintenance activities during peak operational period.

6.4.4.3 Materials Resources Requirements

- Plans shall identify the likely or known specialist tools required, including access equipment and equipment subject to calibration. Training and competences related to these tools should also be identified.
- Plans shall provide advice on specific issues with likely spares in respect of high cost, long lead times, risk of obsolescence, bespoke/custom parts.
- Plans should provide the likely or known list of consumables for a period of one year with the usage pattern, minimum stock levels and quantities stated.
- Plans should provide advice on risk from obsolescence and opportunities for improvement/reduction of risk of failure and/or unplanned outage duration.
- Plans should provide advice on the acceptability and/or risks associated with 'equivalent' consumables and spares, from technical, performance, interoperability, aesthetic perspectives.
- Plans will provide disposal advice for the consumables and spares.



6.4.4.4 Operational Requirements

- Plans shall highlight potential or likely opportunities for aligning frequency visits to minimize downtime of equipment and optimize human resource attendance for maximum efficiency, (such as electrical isolation and reinstatement of equipment in preparation for a mechanical maintenance task).
- Plans should highlight likely tasks where a Facilities Manager or building custodian will be, or expected to be, involved and the level of responsibility for arranging or carrying out supporting activities. This may include management of site-specific safety rules (specialist environments such as power stations, rooftop and underground locations), out of hours planned maintenance.
- Plans should highlight continuous improvement experiences based on lessons learned from previous maintenance activities.
- Plans should highlight the communication/notification requirements between Maintenance and Operation.

6.4.5 Risk Management

6.4.5.1 Support and Mitigation Requirements

- Plans shall highlight actual or likely impacts created and mitigation measures, costs and sourcing as a result of maintenance activities (potential impact on the primary operation of the business caused by maintenance activities, and impact arising in terms of health and safety, statutory compliance, contract compliance and resilience of critical systems).
- Plans should highlight potential mitigation options resolved by people, for example, posting a 'fire watch'.
- Plans should highlight mitigations resolved by technology (temporary fire detection, temporary water supplies, temporary cooling).
- Plans should highlight mitigations resolved by risk removal (closing part of a building).

6.4.5.2 Mobilization Requirements

- Plans shall acknowledge and tailor the advice and instructions to the specific cultural environment of the maintenance operation.
- Plans should highlight possible and known challenges to successful launch or mobilization (any need for manufacturer or specialist contractor).
- Plans should not compromise the recommendation of the best practices applicable to the specific built, operational and cultural environment. Advice should 'raise the standard', though this may not necessarily have to be incremental.
- Plans should offer advice on how to progress from existing common work practices to new, higher standards of operation.

6.4.6 Health and Safety

6.4.6.1 Health and Safety Requirements

- Plans shall set out any requirements for specialist tools and equipment, or safety precautions that need to be applied in conducting the relevant activity, such as PPE requirements.
- Plans shall highlight health and safety considerations applicable to maintenance tasks (for example insurance inspections, Risk Assessment and Management Plans for legionella, asbestos).
- Plans shall highlight likely health and safety requirements and recommended measures to be taken for maintenance in work environments with an elevated risk of danger (confined spaces, hot working, opening of pressurized systems, working at heights).
- Plans should highlight tasks or activities that may require a high level of formal Risk Assessment or specific skill competence level that is confirmed by a supervisor, manager, 'competent person'.



Maintenance Plan Writers Guide Procedure

- Plans should highlight tasks, locations or situations likely to require 'escorts' or 'second person' to accompany the technical personnel (working at height, and the skill level of the personnel, 'First Aider').
- Refer to Volume 10 Health, Safety & Environment HSE for more details.

6.4.7 Quality

- Plans should offer advice on regularly reviewing the re-work of maintenance activities.
- Plans should offer advice on regularly reviewing Post Maintenance Testing.
- Refer to Volume 11 Quality for more details.

6.4.7.1 Writing Standards

- Plans shall be reviewed for technical standards and engineering practicality in a trackable manner.
- ISO9000 type formal management may be followed.
- Plans shall avoid vagueness, remove ambiguity whenever present, and avoid long sentences whenever possible.
- Plans shall acknowledge the use of hierarchy of law, regulations, 'good practice', when making statements based on these.
- Plans shall be written for readers who are technically or operationally experienced in the built environment. Expert advice should be sought when applicable.
- Plans should not duplicate statements and advice from other documents in preference to referencing.
- Plans should define any 'new' terms and explain how they differ from similar established terms.
- Plans should declare references and bibliography. Referencing will be carried out using a style that is consistent with other similar documents.
- Plans should practice consistent use and careful separation of terms ('program', 'schedule', 'regime'). These may be crucially different in the operation of the business, and hence, care is needed to use the correct terms at each stage. However, different terms can mean the same thing.
- Plans may be based on internationally respected document writing guides, such as those published by ETSI.

6.4.7.2 Document Requirements

- Plans shall have consistent format and style.
- Plans shall use terms consistently and without conflict.
- Plans shall contain a glossary, references, and nomenclature section.
- Plans should follow applicable document management and review requirements of the client or contractor organization.
- Plans should be reviewed as part of a continuous improvement activity, with the recommended frequency.