ERL MAINTENANCE SUPPORT SDN BHD

Co. Reg. No. 199901023674 (498574-T)

E-MAS

Effective Railway Operations; Reliable System Maintenance

MATERIAL MANAGEMENT DEPARTMENT

WAREHOUSE OPERATIONS PROCEDURE

Ref. No. G00.OML.M13500.CA.1001.B

Release

Released:	Thomas Baake	Chief Executive Officer	11 October 2021	
Checked:	Suriani Farisa Md Isa	Human Resource	8.10.2021	
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	Name	**Dept.**	**Date**	**Signature**

Amendments or additions to this procedure must be indicated with a vertical black line in the adjacent left margin.

Change Record and Configuration Control

B	26 July 2021	Revision to update the current process. 9. Asset Retirement, Scheduled Wastes, and Scrap Material Process.	Mohd Azay
A	13 Sept 2019	This procedure supercedes Ref: G00.OMM.M13500.CA.0002.D due to department restructure	Mohd Azay
Revision	**Date**	**Modification**	**Name**

Planning Of Changes Reference For Revision: G00.OML.M13500.CA.1001.B

Issues To Consider	**Checked** *(Please mark X)*				**Remarks**
1) Are there any negative impact?	YES		NO	X	
2) Will the integrity of QEMS be affected?	YES		NO	X	
3) Resources available?	YES	X	NO		Adequate
4) Allocation or relocation of responsibilities and authorities required?	YES		NO	X	

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1 Purpose

The objective of this document is to describe the functions of the overall warehouse operations and management.

2 Scope & Abbreviation

The scope encompasses the various process flows relating to the inventory management and movements of materials at Material Management (MMT) from the receiving area of the warehouse to the issuance to respective users.

For procurement of materials refer to Purchasing Procedure G00.OMU.M10540.CD.0008.*. (EDMS# 52041)

Abbreviations used in this procedure are:-

Abbreviation	Detail Description
CEO	Chief Executive Officer
DOE	Department of Environment, Malaysia
EDMS	Electronic Document Management System (EDMS)
E-MAS	ERL Maintenance Support Sdn Bhd [Co. Reg. No. 199901023674 (498574-T)]
E-PR	Electronic Purchase Requisition
EQ (SW) Regulation 2005	Environmental Quality (Scheduled Wastes) Regulation 2005
EQA 1974	Environmental Quality Act 1974
ERC	Electronic Repair Centre
ERLSB	Express Rail Link Sdn Bhd [Co. Reg. No. 199601003493 (375839-H)]
ESD	Electro-Static Discharge
ESWIS	Electronic Scheduled Wastes Information System
FRM-ERLSB	Finance & Revenue Management Department, ERLSB
GI/GR	Goods Issue/Goods Receive
HoD	Head of Department
IS	Immediate Supervisor
MAP	Moving Average Price
MM Module	Material Management Module (SAP)
MMT	Material Management Department
MRP	Material Requirements Planning
MTN Team	Consist of all technical team from SYS, RST and PNE
O&M	Operation & Maintenance
PI Document	Physical Inventory Document
PO	Purchase Order
PR	Purchase Requisition
PRC, MTN, RST	Department Coding as per Documentation Manual Procedure G00.OMM.M11160.BT.1001.*
SAP	Systems, Application and Products
SDS	Safety Data Sheet

SW	Scheduled Wastes
WFS	Work Flow System
WMS	Warehouse Management System
WO	Work Order

3 Distribution & Access

This procedure contains general information regarding warehouse management and operations and shall be distributed and accessible company-wide to all E-MAS employees via EDMS and E-MAS web portal.

4 Material Management Functionalities and Responsibilities

The function of MMT is to manage and handle the operation of Material Warehouse for ERLSB. ERLSB is the owner of all material available in the inventory and these materials can only be issued or used for operations and maintenance of assets or properties which belong to them.

4.1 Material Management Responsibilities

Figure 1.1 below shows the main MMT roles and responsibilities which is further explained in the subsequent sections.

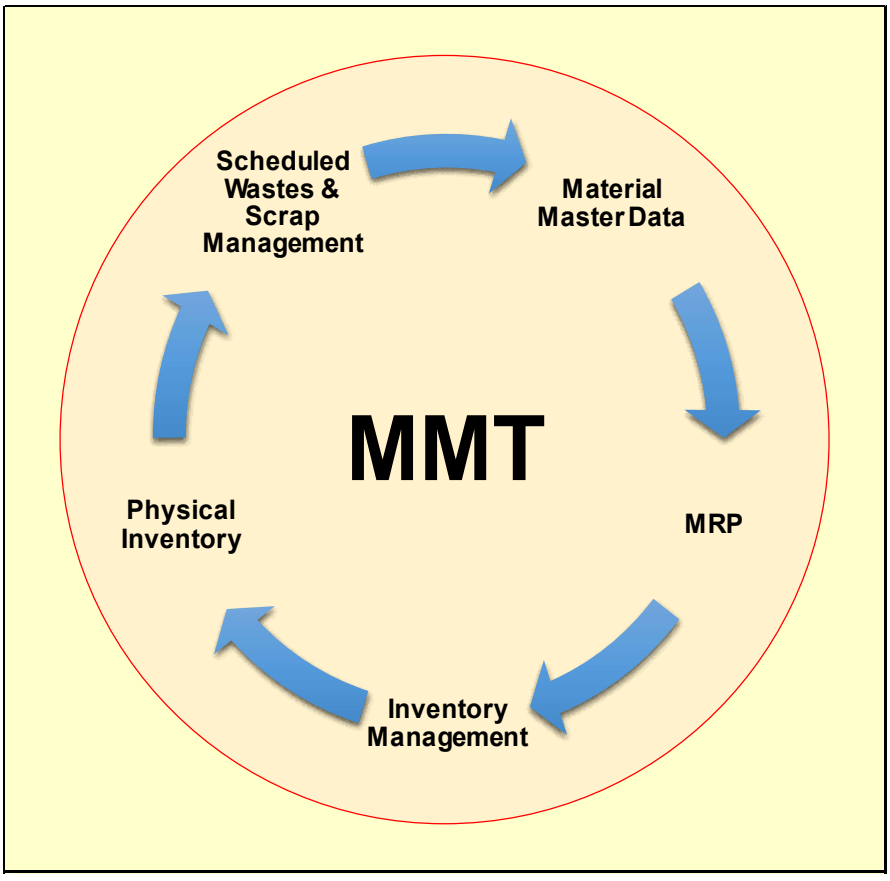

Figure 1.1: MMT responsibilities

5 Material Master Data

Material Master Data comprises all information which is needed to manage materials or spares in the inventory. The integration of all materials or spares information in the database will eliminate data redundancy and permit only the same data to be used by all levels in the organization.

All of the information which is required to manage the materials or spares in the inventory are stored in the WMS database and this data can be retrieved at any time when needed. E-MAS uses SAP system to manage and organize all data integration for its inventory.

5.1 Creation of Material Master Data Record

Material Master Data Record for all material or spares is created and maintained through the MM Module in SAP. Most of the data in the Material Master Data Record is updated and keyed in manually into the system. However, some data and information will be updated and generated by the system automatically.

Information which are stored in the Material Master Data Record comprises of:-

a) Material Type
b) Plant
c) Basic Data of the Material or Spares
d) Data Specific to MRP Profile
e) Data Specific to Storage Location

a) Material Type

Material with the same basic attributes are grouped together and assigned to a material type. This is to manage different materials in a uniform manner in accordance with the Company's requirements. The material type has important control functions and determines the following:-

- Material specific purpose and requirement i.e:- Consumables or capitalized spares;
- Assignment of the material number;
- Range of material number selected, which varies in accordance with the type of material selected;
- Which screens appear and in what sequence;
- Updating quantity in the Material Master Data Record;
- Changes in value are updated in the stock accounts in financial accounting (upon purchase);

Material Type	Description	Value Updated	Quantity Updated	Inventory Number Range
ZSPC	Spare Parts	Yes	Yes	1000000 - 1999999
ZCON	Consumables	Yes	Yes	2000000 - 2999999
ZHAU	T6 Consumables	Yes	Yes	2000000 - 2999999
ZTO1	Tools	Yes	Yes	3000000 - 3999999
ZTO2	Tools (Un-valuated)	No	Yes	4000000 - 4999999
ZSPA	Cap. Spare Parts	No	Yes	8000000 - 8999999
ZTO3	Maintenance Tools	Yes	Yes	11000000 - 11999999

ZSPD	Spare Parts (AV 16)	Yes	Yes	40000000 - 49999999

Figure 1.2: Details of material types used in SAP

b) Plant

Defines the highest organizational unit within the Company's code related to logistics functions in the system. For warehouse operations;

- Plant ERL – Owner
- Plant E-MAS – Administrative

c) Basic Data of the Material or Spares

i. Material Description
A short text which defines the material or spares kept in the inventory.

ii. Base Unit of Measure
Unit of measure in which stocks of the material are managed i.e:- Pieces, Meter, Litre, etc.

iii. Material Group
A key that is used to group together several materials or spares with the same attributes.

iv. Old Material Number (If any)
Number which previously assigned to the material or spares under another system or in a card index.

v. External Material Group
Figure 1.3 below shows a key that used to assign the material or spares according to external systematics.

External Material Group	Description
AWHO	Air & Water Hoses
BATT	Batteries & Accessories
BEAR	Bearing and Housing
BELT	Belting
CGAS	Chemicals and Gas
FAST	Fasteners
FILT	Filters
GECA	General Electric, Cable
GFIX	General Fixings
LGIN	Lighting & Indicator
OHTE	Others - Electrical
OHTM	Others - Mechanical
OLUB	Oil and Lubricants
RSTM	Rolling Stock Mechanical
SEAD	Seals and Adhesives

WSCS	Workshop Consumables

Figure 1.3: Details of External Material Group in SAP

d) Data Specific to MRP Profile

i. MRP Type
The function of MRP type selection in Material Master is to determine the behavior to replenish the inventory. Under ERL Plant, each material or spares in the inventory is set either:-

- VB - Manual Reorder Point Planning
  If this function is selected, procurement of material or spares will be triggered when total quantity in plant falls below the reorder point level.

- ND - Non Planning
  If this function is selected, procurement of material or spares is controlled manually. Even though the total quantity in plant reaches zero, procurement of material or spares will not be triggered.

ii. Reorder Point
Trigger point quantity to be set in the Material Master to replenish the plant stock. If the stock falls below quantity set in the Material Master, the system will flag the material for new stock replenishment.

iii. MRP Controller
The function of 'MRP Controller Selection' is to specify the person or group who is responsible to perform the planning for the material or spares which is available in the inventory. At the moment, there is only one person who is assigned to perform all the planning process in ERL plant that is, the MRP Planner and in the 'Material Master Data Selection', he/she is referred as ER1.

iv. Minimum Lot Size
The minimum quantity set to procure for the material or spares.

v. Planned Delivery Time
Expected numbers of calendar day for delivery of material, spares or services that should be met by the appointed vendor.

vi. Availability Check
It specifies whether and how the system checks availability and generates requirements for materials planning.

e) Data Specific to Storage Location

i. Storage Location
It is defined as the main unit or space in a plant. It describes or represents logistical position or physical storage of the materials or spares in the plant. At present, there are 3 types of storage locations used under ERL plant:-

- Temporary Storage Location
It is used for tracking the movement of material or spares which is sent for repair either to external vendor or in-house. This locations only represent the logistical position of the material or spares and once the repair process is completed, the material or spares will be transferred back directly to end user or back into the inventory (Fixed Storage Location). All Temporary Storage Location is controlled and maintained by MMT.

Plant	Storage Location	Description
ERL	BADM	Bad Storage
ERL	REPA	Repair Area
ERL	QUIA	Quality Inspection Storage
ERL	SCPA	Scrap Store

Figure 1.4: Details of Temporary Storage Location

- Fixed Storage Location
It is used for storing all the material and spares in the inventory. This location represents the logistical and physical position of the material and spares inside the plant and more specifically, inside the warehouse. The purpose to have a Fixed Storage Location for all material and spares in the inventory is for easy retrieval and to have organized space. All Fixed Storage Location is controlled and maintained by MMT.

  For more details of Fixed Storage Location mapped in the warehouse area, refer to Warehouse Floor Plan G00.OML.M10000.WW.1001.*. (EDMS# 142295).

Plant	Storage Location	Description
ERL	ACGF	Air-Conditioned Ground Floor
ERL	ACMF	Air-Conditioned Mezzanine Floor
ERL	BWAS	Bogie, Wheel & Axle Store
ERL	DGCS	Dangerous Goods & Chemical Store
ERL	FSL1	Fence Store Loc1
ERL	FSL2	Fence Store Loc2
ERL	LOST	Lubricant & Oil Store
ERL	MSPR	Main Store Pallet Rack
ERL	NAGF	Non-Air-conditioned Ground Floor
ERL	NAMF	Non-Air-Conditioned Mezzanine Floor
ERL	OYST	Open Yard Store
ERL	TLC	Tools Cabinet
ERL	ZHAU	T6 Maintenance Works

Figure 1.5: Details of Fixed Storage Location

- Department Storage Location
  It is used for storing particular material or spares for a specific subsystem. The owner (department/unit) of this type of material or spares has their own location and this location is not maintained and controlled by MMT. Same as Fixed Storage Location, the location represents the logistical and physical position of the material or spares inside the plant and more specifically, under possession of which department/unit.

Plant	Storage Location	Description	Department
ERL	DWSS	Depo Workshop Store	DWE
ERL	INFS	Infrastructure Store	INF
ERL	MWSP	Main Workshop Store	MTN
ERL	OCLS	Overhead Contact Line Store	OCL
ERL	RSES	Rolling Stock Store	RST
ERL	SIGS	Signaling Store	SIG
ERL	TLES	Telecommunication Store	TLE
ERL	TPSS	Traction Power Supply Store	ELT

Figure 1.6: Details of Department Storage Location

ii. Storage Bin
It is defined as the smallest unit of space in a plant. It is a sub unit for storage location and it describes the exact position in the storage location where the material or spares are being or will be stored. The Storage Bin's address is derived from the coordinate of the locations available in ERL plant and at the moment, it is only applicable for Fixed Storage Locations in the plant.

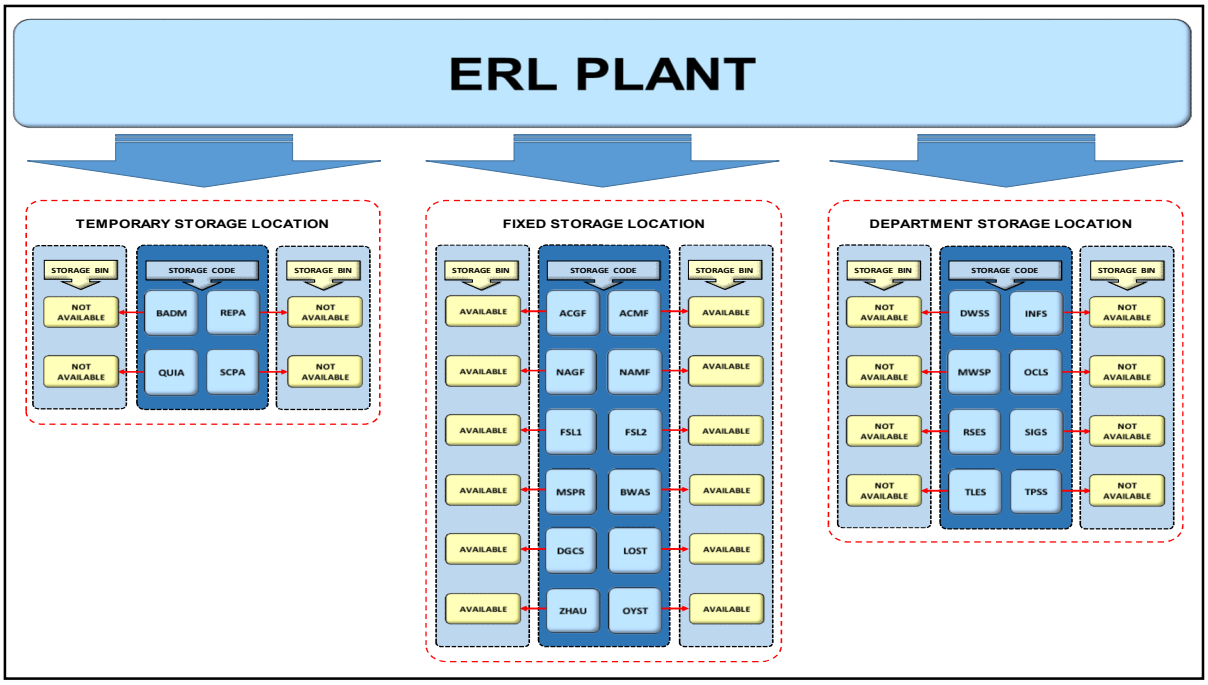

Figure 1.7: Details of locations in ERL Plant

5.2 Material Valuation

All materials and spares available in ERL plant are evaluated by using the MAP method, in which all quantity movement are valuated at PO prices (only the price of material or spares). Price variances at the time of goods or invoice receipt are posted to the stock account. As a result, the MAP is automatically adjusted to reflect changes in PO prices over time.

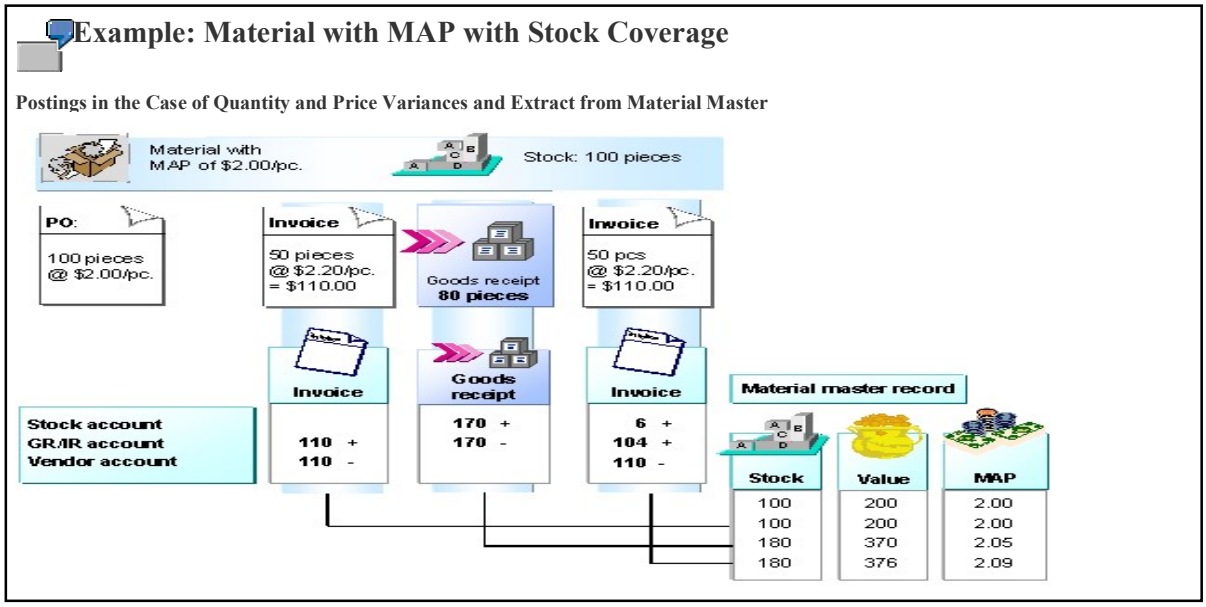

Figure 1.8: Example – Process flow of material or spares with MAP & stock coverage

5.3 Amendment or Changes in Material Master Data Record

Information or data in the Material Master Data Record can be changed or amended. Should any changes or amendment need to be made for the Material Master Data Record, the respective HoD must fill up and submit the Material Data Update form G00.OML.M14100.QZ.1006.*. (EDMS# 142134) to MMT. Based on the justification given, MMT will update the Material Master Data Record as per requested accordingly.

6 Material Requirement Planning (MRP)

MRP is a system for planning and controlling demand and supply of material or spares in an organization. The objective of adopting an MRP system in an organization is to ensure material or spares availability in the inventory. Based on the current stock level, the system helps to define which material or spares (in the inventory) need to be reordered based on the integrated data which is set in the Material Master Data Record.

6.1 Reorder Point Planning System

The replenishment of the spares and consumables is monitored and controlled by the Reorder Point Planning System. The system compares the available material stock with the reorder level, which has been set in the Material Master Data Record. If the stock level falls below the reorder level, the system will flag the material for new stock replenishment (Refer to section: 5.1 under

sub-section (d) for details). Based on the information provided by the system, PR will be initiated/raised by the Material Planner accordingly.

The reorder point is established by the sum of the safety stock plus the expected average material consumption within the replenishment lead-time. The minimum reorder level that can be set in the Material Master Data Record shall be 1 (one). Formula used to calculate MRP Items are described as per below:-

Type Of Purchase	Calculation Formula		Remarks
	Reorder Point	Min. lot Size	
Local	$\frac{\text{Average Usage Per Annum} \div 12 \text{ Month}}{30 \text{ Days} \times 70 \text{ Days}}$	$\frac{\text{Average Usage Per Annum} \div 12 \text{ Month}}{30 \text{ Days} \times 100 \text{ Days}}$	i) 70 days refer to administrative processing and delivery time ii) 100 days refer to administrative processing, safety stock and delivery time
Foreign	$\frac{\text{Average Usage Per Annum} \div 12 \text{ Month}}{30 \text{ Days} \times 210 \text{ Days}}$	$\frac{\text{Average Usage Per Annum} \div 12 \text{ Month}}{30 \text{ Days} \times 240 \text{ Days}}$	i) 210 days refer to administrative processing, vendor processing time, shipping, Custom clearance and delivery time. ii) 240 days refer to all the above and safety stock

Figure 1.9: Details of formula used to calculate MRP items

The procurement procedure related to the PR created by the Reorder Point Planning System is described in the Purchasing Procedure G00.OMU.M10540.CD.0008.*. (EDMS# 52041).

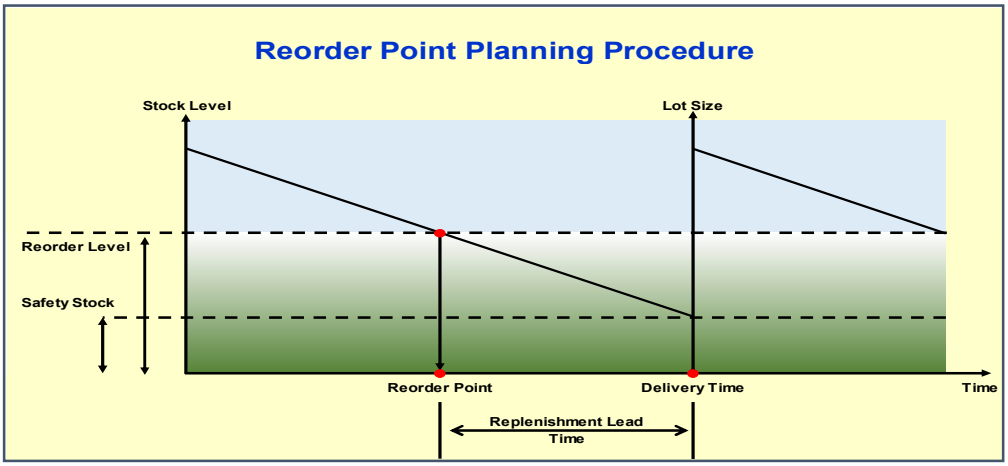

Figure 2.0: Graphical view of setting up the reorder point

6.2 Available Stock for Planning

The Reorder Point Planning System generates a PR automatically if the available stock falls below the reorder level. In the event that a PR has already been created (manually or automatically by a previous MRP), the system recognizes this and ignores any further issuance.

The continuous monitoring of available stock within reorder point planning is carried out in inventory management. Each time any material or spares is withdrawn from the inventory, the system checks if the stock level either falls below the reorder point or not. This happens when the MRP Planner runs the MRP Planning Schedule and should the available stock fall below the reorder level, MRP will be triggered and PR (in SAP) will be automatically created. For each triggered items, MRP Planner will fill up the PR for Purchase Requisition For ERL Purchase form

G00.OMU.M10540.CD.1010.*. (EDMS# 114544) and forward to PRC for further process on the same day.

If any material or spares taken are returned and reversed back into the inventory (material or spares returned from WO), the system checks the stock level. If the stock level exceeds the reorder level again and replenishment is no longer required, system will propose to delete the PR. MRP Planner then will forward the matter to the respective MTN Team for further advice.

The respective maintenance HoD may plan any materials or spares needed to a desired WO. The system will automatically create reservation for the required material or spares. Any reservation made will decrease the available stock at the point of the WO created. For each new reservation made, system will check the available stock level at this scheduled date and if the available stock falls below the reorder level, PR will be created on the scheduled date.

If material or spares reserved is cancelled either manually or by deletion of the WO, again, the system will check the level of the available stock. Should the stock exceed the reorder level on the scheduled date, the PR will be deleted.

The respective maintenance HoD can decide either to exclude any materials or spares (which they require) to be excluded from MRP Planning Schedule. MRP Planner will flag the requested item as ND - Non Planning (with no reorder point) and during MRP Planning Schedule, the item will not be triggered at all. However, should the respective maintenance HoD requires to have close monitoring for any desired materials or spares which is flagged as ND - Non Planning, MRP Planner will set the value of reorder point (as per advised by the respective maintenance HoD). During MRP Planning Schedule, the item will be triggered and MRP Planner will seek advice from the respective maintenance HoD either to proceed with stock replenishment or just ignore it. Should maintenance HoD request to proceed, MRP Planner will raise the PR accordingly otherwise, triggering will be ignored for the replenishment request.

Normally, materials or spares are flagged as ND - Non Planning due to low demand or the value of item is highly expensive. However, it depends on the requirement needed by MTN Team.

6.3 MRP Planning Schedule

To guarantee the optimum availability of material and spares in ERL plant, the Reorder Point Planning System or MRP Planning Schedule is run on daily basis in accordance to the Company's working calendar. This is to ensure there is no interruption for any maintenance daily task due to unavailability or insufficient of stock.

6.4 One-Off Purchase (Non MRP Item)

For non MRP Items (eg. technical support/service, departmental tools or any single purchase), the PR is created through E-PR system. The respective HoDs need to fill up PR for Purchase Requisition For ERL Purchase form G00.OMU.M10540.CD.1010.*. (EDMS# 114544) and forward to MMT for further action.

Using the ERL PR form received, MRP Planner will create the requisition in E-PR manually. The E-PR created will then be routed to PRC via online for further process. Details of One-Off/E-PR Purchase can be referred to Purchasing Procedure G00.OMU.M10540.CD.0008.*. (EDMS# 52041).

Unlike MRP Items, all single purchase item will not go into the warehouse inventory. As the purchase cost for the item is charged to the respective departmental cost centre, once received, it will be handed over to the owner accordingly.

7 Inventory Management

Inventory or stock management is defined as supervision and controlling of ordering, storage and issuance of material or spares which are used or will be used in the Company's daily business activity. It is important for the Company to maintain its stock or inventory at optimum level in order to ensure the availability of the material or spares when it's needed. By maintaining its inventory at optimum level, an organization also can ensure their capital assets is at the lowest at all times.

In ERL plant, all stock item listed in the inventory consist of consumable item including oils, chemicals and lubricants.

7.1 Criteria for Stock Item

The maintenance department shall propose and recommend whether the materials or spares requested shall be stock items or not. MMT based on the following criteria further confirms this:-

- Items required are frequently used by maintenance.
- To avoid the risk of unavailability of critical and crucial items, which might cause adverse effects on the performance (eg: items with long delivery time).
- Non on shelf or standard delivery program of manufacturer.

If it is already known, which material or spares will be required for a certain maintenance program (eg: train's wheel for wheel change program or T6 maintenance program), the material or spares should be ordered directly by WO. Material or spares which will be used for several WO's shall be ordered directly through cost centre.

7.2 Stock Type

All materials available in the inventory will be recorded in the system (SAP), which is split into two categories:

- **Unrestricted Use Stock**
  The valuated stock of a material held by (and belonging to) ERLSB, the owner, is not subjected to any usage restriction. All spares and consumables which are used for any maintenance activity, are recorded as Unrestricted Use Stock. ERLSB have the right to inspect such stock on request as per O&M Contract G00.OMG.M15000.GD.1004.*. (EDMS# 139962).

  Materials which are recorded as Unrestricted Use Stock shall only be issued to WO or to cost centre. These materials are referred as 'Available Stock' in ERL plant and it is included (calculated) when MRP Planning Schedule runs.

- **Blocked Stock**
  Spares and consumables which are recorded as Blocked Stock are damaged materials located in the Temporary Storage Location (Refer to section: 5.1 under sub-section e), to

be sent either for refurbishment, repair, overhaul or scrapping. Materials in Blocked Stock can only be issued: -

- With reference to repair WO
- For scrapping

These materials can be transferred as Blocked Stock from one storage location to another storage location or as Unrestricted Use Stock after repair process is completed. These materials are not used for planning, which means it cannot be assigned to a reservation created by a WO.

Scrapped materials which are stored in the inventory are recorded as Blocked Stock. After scrapping process is complete, the materials will be purged out from the system (SAP) and will not be shown in inventory at all.

7.3 Goods Movement Types

Movement types is an instrument for controlling the physical movement of all material or spares in the inventory. It describes the type of stock posting in inventory and represents the posting of stock to the type of order. In SAP, under MM Module, there are 3 types of goods movement applied in the warehouse operation:

a) Goods Receive (GR)

GR is defined as physical inbound of materials or spares into the warehouse. It is a goods movement with which the goods is received either from appointed vendor, manufacturer or service provider. Generally, there are 3 types of GR used:

i. For **GR with reference to a PO (MRP Items)**, the system will capture the materials' values and its quantities as per default set in the PO. GR for stock item will result in increase of inventory inside the warehouse.

ii. **GR with reference to cost centre** is used for One-Off Purchase (eg. technical support/service, single purchase). In this case, the file for Material Master Data Record were not created and item purchased will not go into the inventory. On the contrary, item purchased belongs to the cost centre which records the purchase costs.

iii. **GR with reference to WOs** is used for external/internal repairs and calibrations. The file for Material Master Data Record will be created for stock items only. The WO collects the repair/calibration costs.

Detail workflow of GR process can be referred in Work Flow For Receiving Process G00.OML.M14100.WP.1009.*. (EDMS# 142305).

b) Goods Issue (GI)

GI is defined as physical outbound of materials or spares from the warehouse. Generally, inventory inside warehouse will decrease when GI is performed. Basically, there are 2 types of GI used:

i. **GI with reference to WO** is used for issuing spares or materials in the MM Module for maintenance works. MTN Team are required to provide WO number to MMT should they need any spares or materials to be used/consumed during performing their maintenance activity. The costs for spares or materials used/consumed will then be charge to the WO.

ii. **GI to cost centre** is used for issuing material to a different subsystem (other than MTN Team). Occasionally, this subsystem need to use parts or consumable item from the inventory for their operational purpose. The cost for consumable item taken will be charged to the respective subsystem's cost centre.

To retrieve any material or spares from MMT, requisition need to be made via Material Requisition/Returned Form (MRF) G00.OML.M14100.QZ.1005.* (EDMS# 142093). Requestor are required to fill up the form and hand it over to the Storekeeper on duty before any spares or material can be issued to them. Detailed process for Goods Issuance process can be referred in Work Flow for Goods Issue Process G00.OML.M14100.WP.1001.*. (EDMS# 142067).

c) Transfer Posting (TF)

Transfer Posting (TF) is used to book and record the materials' movement from one storage location to another. Execution of transfer posting may change the stock level in warehouse. However, the total quantity in plant remain the same. Generally, transfer posting only applies for recording the movement of materials' sent for repair, verification, calibration or sampling either internally or externally.

i. Managing the Receiving of Part/s or Tools Requested to Be Send for Repair, Verification, Calibration or Sampling

- Internal Repair or Verification via Electronic Repair Centre (ERC)

One of the objective Electronic Repair Centre (ERC) was established is to perform in-house troubleshooting and repair on electronic equipment. This includes to perform in-house verification for tools. Due to limitation, only certain electronic equipment/tool can be sent for repair or verification via ERC. List of electronic equipment/tools which are accepted for in-house repair or verification is updated via e-mail by ERC on weekly basis. Further details of internal repair and verification via ERC can be referred through PNE ERC Management procedure E00.OMD.M10002.BT.1003.*. (EDMS# 133263)

Any electronic equipment or tool which MTN Team intend to send for repair/verification by ERC must go through MMT, for recording/tracking purpose. Maintenance HoD/Representative are required to fill up Internal Repair & Verification form G00.OML.M14100.QZ.1001.*. (EDMS# 142087) and send it together with the defect electronic equipment/tool to MMT for further process. Upon receiving, MMT will acknowledge and confirm receipt of the defective electronic equipment/tool, label and record it in the Internal Repair & Verification Masterfile which is saved in the MMT shared folder.

- External Repair, Calibration or Sampling

  Any part/s or tool which is required by MTN Team to be sent for external repair, calibration or sampling purpose also need to go through MMT for recording/tracking purpose. This includes electronic equipment/tools that is unable to be processed by ERC. Maintenance HoD/Representative are required to fill up the Purchase Requisition For ERL Purchase form G00.OMU.M10540.CD.1010.*. (EDMS# 114544) and send it together with the defective part/s or tool to MMT for further process.

  Upon receiving the defective part/s or tool, MMT shall carry out the following:-

➲ Acknowledge and confirm receipt of the part/s or tool and attach relevant documentation eg. Calibration Report or Repair Report (if any).

➲ Open the Material Gate Pass form (as per below) by completing the details required and record it in the Material Gate Pass Masterfile in the MMT shared folder:-

- For External Repair
  Material Gate Pass – External Repair Item
  G00.OML.M14100.QZ.1004.*. (EDMS# 142092)

- For External Calibration/Sample
  Material Gate Pass – Calibration, Sample & Others
  G00.OML.M14100.QZ.1003.*. (EDMS# 142091)

Detail process of issuance for Material Gate Pass can be referred in Process Guide for Material Gate Pass Issuance (General) G00.OML.M10001.CC.1001.*. (EDMS# 142572).

➲ Pack the part/s or tool adequately to protect from damage during shipment and advice PRC on the detail of the weight & measurement of the packaging.

➲ Creation of PR in the E-PR system and forward the MGP (together with all supporting documents) to PRC for further process.

Once arrangement has been made, PRC will advise MMT for the collection arrangement of the defective part/s or tool to MMT.

Note: MMT shall process all part/s or tool sent for external repair, calibration or sampling purpose (with complete documentations) within two (2) working days starting from the date the documents received and acknowledged by MMT. The complete documents are later forwarded to PRC for timely delivery of the part/s or tool to the vendor without delay.

ii. Managing the Returned Part/s or Tool Back from Internal/External Repair, Verification or Calibration

Upon receiving the returned part/s or tool back from internal/external repair, verification or calibration, the below process will be carried out by MMT:-

- To notify the Maintenance HoD/Representative to inspect and confirm acceptance of the returned part/s or tool and acknowledge receipt in the Check & Testing column in the Internal Repair & Verification/Material gate Pass form.
- To execute and complete the cycle of Goods repair/Returned and GR transaction via SAP.
- For external repairs and calibration, all documents received from the appointed vendor (eg. Delivery Order, Invoices etc) will be acknowledged by MMT and the original copies will be forwarded to PRC. Except for calibration certificate, it will be handed over to the respective Maintenance HoD/Representative upon collection of calibrated tools from MMT.

  During Check & Testing process, should there be any repair or calibration works found unacceptable, the respective Maintenance HoD/Representative is required to indicate the findings in the Check & Testing column in the respective form.

- For part/s or tool returned from internal repair or verification, MMT will forward it back to ERC and if they found that it is beyond their capability to repair or verify it again, the respective Maintenance HoD/Representative will decide either they want to send it externally for repair or to scrap it.
- For part/s or tool returned from external repair or calibration, MMT will forward to PRC for them to inform the suppliers/vendors/manufacturers immediately. Further confirmation to establish the cause/s of the discrepancy from the suppliers/vendors/manufacturers shall be obtained by PRC. The respective maintenance HoD/Representative will decide later either they want to resend the discrepancy part/s or tool to the current vendor (or appoint new) or to scrap.

  Further details of internal repair and verification via ERC can be referred to Work Flow for Internal Repair & Verification G00.OML.M14100.WP.1012.*. (EDMS# 144443)

  Further details of external repair and calibration can be referred to Work Flow for External Repair & Calibration G00.OML.M14100.WP.1014.*> (EDMS# 144672)

7.4 Handling of Goods

a) Receiving

All spares and consumables purchased (either One-Off or MRP Purchase) must be delivered and received through MMT. Upon receiving of the purchased materials, MMT is responsible to ensure the materials are correct (as per ordered in the PO) and there is no damages which visually can be detected or found on the outer packaging.

Upon receiving, any material which fall under the category of hazardous chemical (either in form of oil, chemical or lubricants), GR storekeeper need to ensure the availability of SDS and PRC need to assist to obtain if it is not available. However, this is only applicable for newly purchased hazardous chemical as these already available in the inventory, the SDS has been obtained during the first purchase made.

During receiving of any hazardous chemical, proper handling guidelines are followed as per outlined in Hazardous & Dangerous Chemical Handling Guide G00.OML.M10000.CC.1001.*. (EDMS# 142297).

For spares or consumables with material expiry, a minimum of 6 months (before expiry date) will be received. However, it depends on advice received from respective MTN Team. Should any materials delivered with expiry date lesser than 6 months, it will be rejected directly.

For any service jobs hired/purchased by the respective MTN Team, a copy of Service Report together with Invoices / DOs need to be forwarded to MMT prior to GR Process. A complete Service Report which is endorsed by HoD or designated departmental representative need to be provided by respective MTN Team while Invoices or DOs is provided by PRC.

Prior to conducting the GR, the material (One-Off purchase, first purchase, MRP items with new specification/version eg. upgraded version of electronic card and service jobs) is checked and tested by the respective HoD or the designated departmental representative within 14 working days from notification by MMT. **Failure to do so, within stipulated time, the respective HoD or designated departmental representative need to provide justification (in the Check & Testing form) which will be followed up until Check & Testing is signed off.**

Any discrepancy detected during Check & Testing process is recorded in the Material Discrepancy form G00.OML.M14100.QZ.1002.*. (EDMS# 142088) and the rejected material is returned to the supplier. The liaison with vendor on the discrepancy is managed by PRC.

For materials which is accepted during the Check & Testing process, the storekeeper shall proceed with data entry process via SAP and stored as stock in the designated storage location. During data entry process, a GR slip is printed out by the storekeeper and the slip together with all related documents (ie. original DOs, Invoices, Airway Bill/Bill of Lading and Check & Testing form) will be scanned and attached together in SAP for MMT reference. Before storing, the materials are labelled accordingly. If the goods received are One-Off purchase, the goods are issued directly to the respective cost centre/WO. All related documentations are then forwarded to PRC for their further process.

Workflow for Receiving Process can be referred in G00.OML.M14100.WP.1009.*. (EDMS# 142305).

Process Guide for Material Labelling (Sticker) can be referred in G00.OML.M14100.WP.1008.*. (EDMS# 142304).

b) Storage

All materials or spares available in ERL plant is stored inside Fixed Storage Location (Refer to section: 5.1 under sub-section e). Each material or spare is stored in its own designated storage location as recorded in Material Master Data Record. To ensure the available storage space is fully utilized and constantly organized, MMT is responsible to ensure the following: -

- Record and update in SAP for every movement made for spares and consumables which is available in the inventory.

- All spares or consumables will be labeled for easy identification. The label indicates SAP No. assigned to the material including its description.
  The Process Guide for Material Labelling (Sticker) can be referred in G00.OML.M14100.WP.1008.*. (EDMS# 142304).

- The spares and consumables will be stored to its storage location as per recorded in Material Master Data Record. Each spare and consumable will only have 1 (one) storage location assigned in Fixed Storage Location at a time.

- Record and update Stock Card for any receiving or withdrawal of spares and consumables from its storage location.

- All spares and consumables in storage location are well packed to protect its material perseverance and quality. Any bad packaging or found ripped apart, MMT will repack it accordingly.

- Ensure the safety and security of all spares and consumables stored including warehouse surroundings.

Apart from the matter mentioned above, In order to ensure all spares and consumables stored in the inventory are well preserved and is ready to be disbursed according to its specifications, the below guidelines to be adhered: -

- **Oils, Chemicals and Lubricants**
  For safety reasons, all oils, chemicals, lubricants including paints are stored separately in closed storage areas. Two (2) storage locations are assigned respectively: Lubricant & Oil Store (LOST) and Dangerous Goods & Chemical Store (DGCS).
  All the shelves in LOST and DGCS location are clearly marked to indicate the material type and the SDS are kept on site for reference. The SDS are provided by appointed suppliers/manufacturers (through PRC), in which detailed criteria of how to safely handle these hazardous materials is outlined. Every storekeeper must adhere to these regulations before handling these materials. The guidelines for handling chemicals are outlined in Hazardous and Dangerous Chemical Handling Guide G00.OML.M10000.CC.1001.*. (EDMS# 142297).

  To stop any accidental spillage of oils and chemicals in the storage location, both locations (LOST & DGCS) are equipped with chemical spillage kit. Storekeepers are well trained to handle accidental spillage event, if they occurred. During any accidental spillage, Guidelines for Spillage Control Process Flow, G00.OMQ.M11426.AH.1046.*. (EDMS# 142543) is referred to.

  For any Safety & Security and Emergency Response related topics in handling these materials, reference is made to below respectively: -

  - Safety Procedure G00.OMZ.M11451.NP.0006.*. (EDMS# 40306)
  - Security Procedure G00.OMZ.M15400.CA.0001.*. (EDMS# 37698)
  - Rulebook Section A G00.OMZ.M10100.BT.0001.*. (EDMS# 2547)
  - Fire Evacuation Plan KRU G00.OMZ.M15400.DS.0009.*. (EDMS# 40020)

- **Controlled Temperature Environment and ESD Free**
  Some spares and consumables especially electronic parts and chemicals are required to be stored in a controlled temperature environment/room. MMT provides two (2) locations with controlled temperature environment/room: Air Conditioned Ground Floor (ACGF) and Air Conditioned Mezzanine Floor (ACMF). Both locations are equipped with air condition which is set at 25° Celsius and runs 24 hours a day.

  Any spares or consumables which require to be stored in controlled temperature environment/room as per stated in the product specification manual or in SDS, it will be automatically assigned to these locations by the MRP Planner. Any other spares and consumables may also be assigned to these locations, with justifications from the respective HoD's from maintenance department. Approval by MMT HoD will only be granted should the justification given is acceptable and the storage space in the locations are available.

  MMT also provides storage location which is free from ESD. Any spares or consumables which require ESD free handling will be assigned to the location by MRP Planner. At present, a part of racking and shelves in ACMF storage location are equipped with ESD free and all ERC spares and consumables are stored in this location.

- **Expiry Monitoring**
  MMT is responsible to ensure that all spares and consumables in inventory are ready to use at any time given. Thus, for materials with expiry, the expiry dates are regularly monitored and any expired materials found during inspection will be immediately removed from location and placed at scrap area. The scrapped materials then will be deducted from inventory by storekeeper and stock will be replenished by MRP Planner during MRP Planning Schedule.

  The Process Guide for Material Expiry Monitoring can be referred in G00.OML.M14100.WP.1007.*. (EDMS# 142303).

c) Issuing & Reversal

To retrieve any material or spares from MMT, requisition need to be made via Material Requisition/Returned Form G00.OML.M14100.QZ.1005.* (EDMS# 142093). Requestor are required to fill up the form and hand it over to the Storekeeper on duty before any spares or material were issued to them. The requested spares or material will be handed over to the requestor and GI slip will be printed out by the Storekeeper. Once acknowledged by the requestor, Material Requisition/Returned Form and GI slip will be scanned and attached in SAP for record purposes. The detail of goods issuance process flow can be referred in Work Flow for Goods Issue Process G00.OML.M14100.WP.1001.*. (EDMS# 142067).

There are incidents whereby respective MTN Team required certain spares for testing purposes only after which they are returned into stock. Process of goods returned to store (reversal) can be referred in Work Flow for Goods reversal G00.OML.M14100.WP.1013.*. (EDMS# 144571).

7.5 Tools and Equipment

MMT has its own tools and equipment, which is solely meant for their activities. No equipment shall be removed from MMT without prior agreement of the MMT HoD. MMT responsible of the condition and calibration as well as the whereabouts of the equipment.

- **Calibration of Weighing Machine**

  In order to ensure the measurement reading of all weighing machine available in MMT are consistently accurate, periodic calibration for each unit is arranged. It is the responsibility of the department's HoD to ensure all weighing machines are calibrated as per schedule. The calibration detail for each weighing machine are recorded and monitored through Calibration Monitoring Record G00.OML.M14100.1011.*. (EDMS# 142658).

8 Physical Inventory

Inventory or stocks accuracy is defined as, there is no discrepancy of physical stocks when comparing to system (SAP) quantity. Two (2) Internal Periodic Stock Count Activity is scheduled with one (1) Annual Stock Take Audit Activity conducted (By FRM-ERLSB) which is usually scheduled in the month of June each year.

The results and findings of the physical inventory or Stock Count Activity is recorded and monitored. This is later reported to the Management (through MMT Monthly Report) for their further review. MMT will ensure the Periodic Stock Count Activity is performed as per scheduled plan and the details of Periodic Audit Plan Activity can be referred in the Process Guide for Annual Internal Stock Audit Plan G00.OML.M14100.WP.1002.*. (EDMS# 142068).

8.1 Cycle Count

Cycle Count Activity is conducted internally by MMT. This activity is conducted in the month of January, March, April, July, August, September, November and December throughout the year. During the counting period, not all item which available in inventory were counted. Items which have high consumption and quantity issued during the counting period will be short listed by IS (and later forwarded to storekeeper on-duty) to be counted during the activity.

Generally, the Cycle Count Activity is conducted on daily basis and activity's result including its' findings are then compiled by IS on monthly basis. The compiled result and findings will then reported to the Management through MMT Monthly Report for their review.
During performing the Cycle Count Activity, if any material discrepancy found by the storekeeper, it will then be investigated by IS. However, if discrepancy is genuine, it will be carried forward to the next counting activity for monitoring purpose.

No SAP adjustment is allowed to be performed by MMT.

8.2 Zone Audit

The Zone Audit Activity is also conducted internally by MMT. This activity is conducted twice throughout the year which is in the month of February and October. Unlike Cycle Count Activity, during Zone Audit Activity, all items which are available in the inventory will be counted.

The activity is scheduled to be conducted for a whole month which involved all MMT Personnel and in order to get an accurate result, the counting period is divided into 3 stage: Physical Counting, 1st Recounting and 2nd Recounting. Any material discrepancy found during Physical Counting and 1st Recounting will be brought forward and finalized in 2nd Recounting. 'Pure Discrepancy' will be shown in 2nd Recounting and based on the list, IS will conduct investigation on all material discrepancy found. The final Zone Audit result and findings will be reported to the Management through MMT Monthly Report for their review.

During the activity, if the material discrepancy found is critical (which may effect to maintenance activities due to unavailability of stocks), MMT will advise FRM-ERLSB to perform inventory adjustment in SAP. Should FRM-ERLSB accept the justification, the inventory adjustment in SAP will be performed by them accordingly.

8.3 Annual Stock Take

The Annual Stock Take Audit is conducted by FRM-ERLSB. Normally, this activity is conducted end of June every year (ERLSB yearly accounting closing period). During the counting activity, all items which available in the inventory will be counted and the process will be observed by external auditor appointed by FRM-ERLSB. This Annual Stock Take Audit is governed by ERLSB's Stock Count Procedure.

To ensure the Annual Stock Take result is accurate, all material movement will be temporarily frozen before the event date. Any spares or consumables which the respective MTN Team may require in performing their scheduled task during the event period is to be requested earlier. Only items (for un-scheduled maintenance task) will be issued during the event date, however, it depends on the urgency and criticality of the task. Any items (for un-scheduled maintenance task) needed during the Annual Stock Take event date, together with justification, the respective maintenance HoD need to raise official request to MMT HoD. Should the requisition is approved, item will be issued to the requestor and it will be recorded manually.

During the audit period (which normally takes one (1) week to complete), SAP System will be temporarily 'cut-off' and a day before the event date, FRM-ERLSB will print out the PI Document. The PI Document is then segregated and distributed accordingly to the audit team which consist of volunteers from ERLSB. During the event date, MMT personnel are only responsible to give assistance to the audit team and not allowed to perform any physical counting. The physical quantity counted will be recorded in PI Document by the audit team leader and later handed over to the Team Coordinator for data entry process.

The 1st result of the Annual Stock Take will be printed out on the end of event date, and Recounting Activity will be performed together with FRM-ERLSB representative on the next day. The result of material discrepancy are finalized during the Recounting Activity.

MMT will conduct the investigation for all the material discrepancy found during the Annual Stock Take Audit and findings will be reported in MMT Monthly Report for Management review. The final result and findings will also be forwarded to the FRM-ERLSB for their review and should they agree with the justification given, inventory adjustment will be performed through SAP accordingly.

9 Asset Retirement, Scheduled Wastes and Scrap Material Process

The handling and management process for asset retirement, SW, and scrap materials is administered by MMT. Any Company's asset which is no longer in use/retired and planned to be sent for scrap, the responsible department is required to send it to MMT for temporary storage

prior to disposal. This includes all types of SW and scrap material generated during performing the daily maintenance activity. The detail for asset retirement, SW, and scrap material process can be referred to in Work Flow for Asset Retirement, Scheduled Wastes & Scrap Management G00.OML.M14100.CC.1001.*. (EDMS# 142302).

9.1 Asset Retirement Process

Some asset which belongs to ERLSB is taken care of or under the responsibility of some department in EMAS. Any asset which is faulty or damaged and needs to be sent for scrap, requisition for asset retirement needs to be applied from ERLSB prior to the disposal process.

The responsible department/caretaker for the asset is required to send the faulty/damaged asset to MMT together with the Goods Scrapping & Scheduled Waste form G00.OML.M14100.WP.1003.*. (EDMS# 142069). All required detail in the form needs to be filled up by the responsible department/caretaker for the asset upon handing it over to MMT.

Once received, verification will be made by MMT to confirm the asset number and then apply the asset retirement requisition via Work Flow System (WFS). Once the approval from ERLSB is obtained, the asset will be sent to the scrap storage area (SCPA) before disposal.

Note: The disposal process for the requested asset will only be conducted once the approval for asset retirement is obtained from ERLSB. Should the requisition is not approved by ERLSB, the asset will be returned back to the responsible department/caretaker.

9.2 Scheduled Wastes Handling and Management

MMT is required to comply with the EQ (SW) Regulation 2005, whereby the regulation states that any wastes falling within the categories of wastes listed in the First Schedule need to be stored, labelled, and disposed of accordingly. All types of SW generated by the Company can be referred to in the Process Guide for Scheduled Wastes and Scrap Material Category G00.OML.M14100.WP.1006.*. (EDMS# 142296).

As outlined in the regulation, any new SW generated by the Company needs to be notified to DOE within 30 days from the first day it was generated. This includes to updates the inventory of each SW (on monthly basis) and any disposal made during the month. The notification and updating of the Company's SW are done through a web portal i.e. ESWIS which the platform is provided by DOE.

SW which needs to be handed over to MMT, the respective department needs to send it together with the Goods Scrapping & Scheduled Waste form G00.OML.M14100.WP.1003.*. (EDMS# 142069) and ensure to fill up all the details required. During transit, the respective department needs to ensure there are no leakages and the packaging of the SW is in good intact. This is to avoid any accidental spillage or contamination of the SW during transit.

The received SW will be stored temporarily inside the SW's Temporary Storage Location before handing it over to the appointed contractor for disposal. During the storage period, the SW will be handled properly in order to ensure there are no leakages or contamination occurred. The Process Guide for Handling Scheduled Wastes G00.OML.M15881.WP.1001.*. (EDMS# 142538) is referred to in order to ensure the safety and security of the SW during the handling process.

9.3 Scrap Materials Handling and Management

For all scrap materials resulting from maintenance activities, the respective maintenance department needs to hand it over to MMT by filling up the Goods Scrapping & Scheduled Waste form G00.OML.M14100.WP.1003.*. (EDMS# 142069). The scrap materials received will then be stored inside the scrap storage area (SCPA) prior to disposal, which is usually performed annually.

- Annual Scrap Clearance

  MMT will conduct the Annual Scrap Clearance process normally by the end of each year. The stored scrap materials will then be segregated by MMT according to its category and a complete scrap material listing will be generated before being forwarded to PRC for sourcing out any scrap vendor who is interested to buy all scrap materials. Details of the scrap materials category can be referred to in the Scheduled Wastes and Scrap Material Category G00.OML.M14100.WP.1006.*. (EDMS# 142296).

  Any interested scrap vendors who intend to purchase the scrap materials need to submit their quotations to PRC. Together with the scrap vendor's detail, all quotations received will be compiled and submitted to ERLSB for further review. Once ERLSB has decided which scrap vendor they want to award for purchase the scrap item, an award letter will be sent to them and if there is a tax exemption item listed in the scrap list, an arrangement with Royal Custom Malaysia will be made for inspection/approval to dispose of the item.

  Upon all approval is received and full payment settlement has been made by the appointed scrap vendor, the collection process will be arranged with them accordingly.

10 Appendices

Related procedures and documents in EDMS: -

Documents / Procedures	EDMS Reference Code	EDMS Reference No
Calibration Monitoring Record	G00.OML.M14100.WP.1011.*.	142658
Fire Evacuation Plan KRU	G00.OMZ.M15400.DS.0009.*.	40020
Hazardous & Dangerous Chemical Handling Guide	G00.OML.M10000.CC.1001.*.	142297
Warehouse Floor Plan	G00.OML.M10000.WW.1001.*.	142295
O&M Contract	G00.OMG.M15000.GD.1004.*.	139962
PNE ERC Management Procedure	E00.OMD.M10002.BT.1003.*.	133263
Process Guide for Material Gate Pass Issuance (General)	G00.OML.M10001.CC.1001.*.	142572
Process Guide for Material Labelling (Sticker)	G00.OML.M14100.WP.1008.*.	142304
Process Guide for Annual Internal Stock Audit Plan	G00.OML.M14100.WP.1002.*.	142068
Process Guide for Handling Scheduled Wastes	G00.OML.M15881.WP.1001.*.	142538
Process Guide for Material Expiry Monitoring	G00.OML.M14100..WP.1007.*.	142203
Process Guide for Scheduled Wastes and Scrap Materials Category	G00.OML.M14100.WP.1006.*.	142296
Purchasing Procedure	G00.OMU.M10540.CD.0008.*.	52041
Rulebook Section A	G00.OMZ.M10100.BT.0001.*.	2547
Safety Procedure	G00.OMZ.M11451.NP.0006.*.	40306
Security Procedure	G00.OMZ.M15400.CA.0001.*.	37698
Spillage Control Process Flow	G00.OMQ.M11426.AH.1046.*.	142543
Work Flow for External Repair & Calibration	G00.OML.M14100.WP.1014.*.	144672
Work Flow for Goods Issue Process	G00.OML.M14100.WP.1001.*.	142067
Work Flow for Goods Receiving Process	G00.OML.M14100.WP.1009.*.	142305
Work Flow for Goods Reversal	G00.OML.M14100.WP.1013.*.	144571
Work Flow for Internal Repair & Verification	G00.OML.M14100.WP.1012.*.	144443
Work Flow for Asset Retirement, Scheduled Wastes & Scrap Management	G00.OML.M14100.CC.1001.*.	142302

Forms	EDMS Reference Code	EDMS Reference No
Asset Retirement, Scheduled Waste & Goods Scrapping Form	G00.OML.M14100.WP.1003.*.	142069
Internal Repair & Verification Form	G00.OML.M14100.QZ.1001.*.	142087
Material Data Update Form	G00.OML.M14100.QZ.1006.*.	142134
Material Discrepancy Form	G00.OML.M14100.QZ.1002.*.	142088
Material Gate Pass – Calibration, Sample & Others	G00.OML.M14100.QZ.1003.*.	142091
Material Gate Pass – External Repair Item	G00.OML.M14100.QZ.1004.*.	142092
Material Requisition/Returned Form	G00.OML.M14100.QZ.1005.*.	142093
Purchase Requisition For ERL Purchase	G00.OMU.M10540.CD.1010.*.	114544