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| **INTEGRATED SYSTEM PROCEDURE**  EQUIPMENT MANAGEMENT |

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1. **Purpose**

This procedure identifies the methodology to manage the existing equipment by equipment identification and placement. Ensure effective and efficient use of equipment and measuring devices by proper maintenance and calibration.

1. **Scope**

This procedure is applicable to all the machines/equipment used in Bin Rasheed Colors and Chemicals (BRCC) & Pakistan coating chemicals (PCC).

1. **Responsibility**
   1. **HOD Mechanical/Electrical** is responsible to;
   2. Ensure that equipment maintenance is performed according to the needs and on planned basis
   3. Prepare & implement a preventive maintenance program of process machinery and its auxiliaries
   4. Ensure that equipment maintenance and calibration are conducted according to planned schedule
   5. Ensure that master or other equipments calibration is performed by reliable sources and certificates of calibration provide suitable traceability.
   6. Ensure availability of literature (manuals) with equipment, instrument required for their performance
   7. **Electrical Incharge** is responsible to;
   8. Monitor the work of electricians and provide guidance as needed
   9. Coordinate with Processing/ Production and other sections to address problems
   10. **Mechanical Incharge** is responsible to;
   11. Make sure all the machines, infrastructure, measuring equipment are in good working condition
   12. Assist Manager Mechanical in preparing & implementing the preventive maintenance program.
   13. Maintain & repair machines under their control and prepare requirements for spares, and material for machines.
   14. Ensure that all measuring equipments are calibrated and all the equipments are labeled with unique ID for effective traceability.
2. **Procedure**
   1. **Equipment Identification & Placement**
      1. All equipment / machines are placed at their designated places. Work instructions are provided with all the equipment. Equipment manual(s) if provided by External Provider (manufacturer) are readily available to personnel as and when required.
      2. All equipments are uniquely identified for effective traceability. If equipment is in parts, each of its part can be uniquely identified in a manner that it remains traceable to the main equipment.
      3. Following scheme is used in order to relate equipment to their respective sections;

**SEC-EQT-NN**

Where,

**SEC**  Refers to Section ID

**EQT** Refers to Equipment

**NN** A unique numerical figure only available with one equipment

* + 1. Following scheme is used in case equipment has accessories;

**SEC-EQT-NN-PN**

**PN**  Refers to Part Number

* 1. **Handling, Use, Transport and Storage of Equipment**
     1. Equipment is only allowed to be transferred / transported to an external location in following cases;
  2. If equipment’s maintenance requires it to be taken to the External Provider’s or manufacturer’s premises
  3. Equipment requires calibration services which require equipment to be taken to calibration lab
     1. Staff ensures that equipment is properly working and operational when it is returned back to BRCC & PCC; in case found any problem BRCC & PCC does not accept equipment from third party until and unless it is fully operational.
     2. After ensuring that the equipment is in operational condition it is accepted BRCC & PCC and placed at its designated place.
  4. **Equipment Maintenance**

Equipment Maintenance carried out is of the following types;

* + 1. **Preventive Maintenance**

All equipment will go through process of preventive maintenance at frequencies defined in equipment manuals or maintenance plan. This process ensures that all the equipment is periodically checked for their performance and parts, so that sudden and unforeseen problems can be prevented. The associated formats for preventive maintenance can be implemented as per convenience and satisfaction of the concerned HOD.

* + 1. **Corrective Maintenance**

In case of malfunctioning in any equipment it will go through the corrective maintenance process. The equipment user informs the maintenance section (electrical/mechanical) on **Maintenance Work Order/Permit**. In response concerned designated person (mechanical/electrical Incharge) assesses the work order and job nature is identified which can be of two types;

* 1. **Major:** Maintenance is carried out according to the nature of problem and machine/equipment is tagged with tags like Under Maintenance/Work in progress etc. and time frame of machine maintenance is given to user section. Maintenance department carries out maintenance activities and transfer the machine/equipment to user section control after completing the maintenance. After maintenance, signatures are taken on the **Maintenance Work Order/Permit** from the process staff.
  2. **Minor:** In case of minor issues, maintenance department (Electrical/ Mechanical) fix the problems on the spot.
     1. **Break Down Maintenance:**
  3. In case of any breakdown, the maintenance department is immediately notified via maintenance work order/permit.
  4. Concerned section incharge immediately sends a mechanic to the problem area along with appropriate tools.
  5. If a lathe work or parts are required, then the section incharge informs concerned designated person (mechanical/electrical incharge) and gets the work done from the workshop.
  6. If the parts are not available in the mechanical store, then a target date is recorded on the Maintenance Work Order with delay reason. Under maintenance machine will be tagged with tags like Under Maintenance/Work in progress etc.
  7. On availability of resources, the Job is completed immediately.
  8. Work Order/Permit form is signed and verified by the same department.
  9. The operator himself signs the Maintenance Work Order/Permit, write the details of parts, and work done.
  10. HOD Mechanical/Electrical also signs the Maintenance Work Order/Permit.
  11. **Equipment Maintenance Log** is filled against the Maintenance Work Order and kept in a file as a record.
  12. In case of major break down or accident a Break Down / Accident Report, will be prepared by Mechanical/Electrical incharge.
  13. **Equipment Calibration**
      1. Equipment Calibration is performed (in most cases) once each year. Maintenance department can perform this activity in following ways;

1. Master equipment is calibrated from external calibration providers and rest of the equipment are calibrated against master equipment
2. All the equipment are calibrated from external calibration providers and the calibration certificates are kept for all the equipment
3. Equipment can also be verified by running the control samples internally
   * 1. Calibration service provider labels the master equipment with their own sticker; in case they don’t, responsible personnel labels equipment with calibration sticker as sample is provided below;

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| C:\Users\DELL755\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\3V9NY3NK\Binrasheed logo ISO.png | **Ref. No:** |
| **Date:** |
| **Due:** |
| **By:** |

**Ref. No:** Equipment’s Calibration Certificate Reference Number

**Date:** Date of Calibration

**Due:**  Date of Next Calibration

**By:** Calibrated by

* + 1. Responsible personnel shall ensure that calibration is performed before the due date actually arrives.

1. **Associated Documented Information**
   1. List of Machines &Equipment
   2. Equipment Calibration Program
   3. Preventive Maintenance sheets
   4. Machine Maintenance Log
   5. Work Order/Permit

**Amendment History Record**

| **Revision Number** | **DCR Number** | **Section** | **Amended Text** |
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