STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
Title: Validation Master Plan	**Effective Date:**
Supersedes: Nil	**Review Date:**
Issue Date:	**Page No.:**

1.0 OBJECTIVE:

To lay down Standard Operating Procedure for "Validation master Plan".

2.0 SCOPE:

This procedure is applicable for preparation, review, approval and authorization of Validation Master Plan of …….

3.0 RESPONSIBILITY:

QA (Officer/Executive): Shall be responsible Preparation, Distribution, Revision, Retrieval and Destruction of this SOP.

Head QC: Shall be responsible for review of VMP.

Head Engineering: Shall be responsible for review of VMP.

QA (Executive/Manager): shall be responsible for review of VMP.

Head Quality Assurance: shall be responsible for approval of the VMP.

4.0 ACCOUNTABILITY:

Head-Quality Assurance shall be accountable for ensuring compliance of this Standard Operating Procedure.

5.0 DEFINITION:

Validation Master Plan is defined as an overview of the entire validation operation, its organizational structure, its content and planning. The core of VMP shall consist of the list of the items to be validated

and the planning schedule.

6.0 PROCEDURE:

6.1 Validation program is designed to demonstrate that the facility for the production and storage of Active Pharmaceutical Ingredient and its intermediate is capable of meeting process parameters in a repeatable and controllable manner.

6.2 Facility is designed to provide the necessary and required degree of environment and manufacturing control for all production steps throughout the manufacturing process. Critical

utilities, processes and equipment validation program are established in accordance with the method and procedures mandated by the product requirements which are based on the currently available product information and the current Good Manufacturing Practices, guidelines and other regulations.

6.3 All system is subject to ongoing validation to evaluate the impact of change in process, systems, computers (software), environment, intentionally or un-intentionally

6.4 Validation studies as detailed in the protocol are carried out by nominated team comprising personnel from various disciplines.

6.5 Qualification

- **User requirement Specification:** For any of the critical equipment user department shall mention specification, which specifies the technical specification of the equipment or system, regulatory specification, safety specification, documentary specification, engineering specification. Details specified in the URS shall be mention in the protocol.
- **Design Qualification*:***

  Demonstrates that the proposed design of the facility, equipment, control system, utility and selected components is suitable for intended purpose.
- **Installation Qualification:**

  Demonstrates that the facility, equipment, control system, utility and selected components are the ones installed as per the approved design, that they are at the specified locations, that they are properly identified, that the required SOP's exists, that operating manuals are on file and that all the critical measuring devices are calibrated using an established calibration program me.
- **Operational Qualification:**

  Demonstrates that all facility, equipment, control system, utilities and the components of each of the systems perform as intended throughout the anticipated operating ranges.
- **Performance Qualification:**
- Demonstrates by the execution of a series of tests that the facility, equipment, control system and utility used in the manufacturing process perform in a reproducible manner and meet the pre-established specifications.

- The performance qualification will also include testing that demonstrates that all intermediate and final product specifications can be met. This phase will be executed once the process parameters have been defined.

6.6 Process Validation:

- **Prospective Validation:**

  The Prospective validation should take care of the following:

  Development report, Responsibilities, Process description, Equipment details, Equipment Qualification, Equipment Calibration, Batch record, Validation protocols for specific activities, Quality Control release specification, Sampling plan, Comparison of yields, Process parameters and Quality parameters, evaluating results and responsibilities.

- **Concurrent validation:**

  This is the Validation carried out during routine production. This validation comprises of identification and evaluation of process (including critical process parameters) and quality parameters applicable for the product. This should be performed on 3 consecutive batches. At least one batch should be monitored on long term stability.

- **Process Revalidation:**

  The major change in process will require for revalidation of the critical parameters to show that it does not affect product quality. The process will be revalidated in case there is known changes. For example: formula, critical equipment, critical process parameters, batch size, site and change in vendor for API. The critical parameters identified in the prospective or concurrent validation will be monitored during revalidation. The number of the batches to be studied will depend on the nature of change for which study is planned. In case there is no change in process, re-validation shall be carried out once in 6 years.

6.7 Cleaning Validation:

- This should be performed to provide documented evidence that the procedure being followed for cleaning of equipment and accessories is effective and removes residues of previous batch/ product up to a predetermined acceptance level, using a well-defined protocol and acceptance criteria.

- There is one method employed for sampling during cleaning validation. That is swab/rinse method.
- Cleaning procedures for products and processes, which are similar, do not need to be individually validated.
- A representative of similar range can be selected to justify a validation programme, which addresses the critical issues relating to selected products and processes.
- A single validation study under consideration of the 'Worst case' can be carried out which takes into account the relevant criteria. Presently we are doing Cleaning verification for product by swab/rinse method. Incoming year we will perform cleaning in a systematic way.

6.8 Revalidation:

- Revalidation is done to evaluate the impact of changes in process, product, systems, computers (software), environment, intentionally or un-intentionally.
- The re-validation process is intended to ensure that validated systems continue to perform in accordance with the parameters defined during the original validation.
- All systems subject to validation should be revalidated within a pre-specified period of time. The re-validation frequency will be determined upon completion of the initial validation of a system.

6.9 Revalidation after change is done in the following circumstances:

- Major changes in processing steps Eg.: Critical process parameters, input materials, batch size.
- Major change in equipment size, design, construction and its material of fabrication.
- Major change in area and support system.
- Major change in Quality Control Analytical Methods.
- Major change in Computer – Software and Hardware.

6.10 Water System Validation:

- Water system includes pretreatment of source water, generation of purified water, and distribution of purified water.
- DQ, IQ and OQ of the water generation system shall be done in accordance with user requirement and as specified in the equipment qualification.
- After qualification of generation system performance qualification of water system shall be done.

Performance Qualification of water system shall be divided in three parts named as Phase-I, phase-II and phase-III.

6.11 HVAC System Validation

- Validation protocol shall be prepared for the yearly validation. Separate summary report for each AHU shall be made by QA with the help of engineering and production.
- All the operations parameters of AHU shall be qualified in operational qualification of AHU. HVAC system shall be revalidated once in a year. Details shall be mention in the respective protocol.

6.12 HVAC Re- qualification: Re-qualification of facility shall be carried out only when there is major modification or changes introduced. In HVAC, apart from the parameters monitored routinely like temperature, RH, pressure differential and microbial monitoring, other parameters shall be verified once in year. Review of routine parameters and compilation of other parameters shall constitute re-qualification.

6.13 Pure Steam Validation: Quality attributes of pure steam generator should essentially meet the requirements of specification of pure steam generator. The quality of pure steam generation requires WFI, hence the specification of pure steam condensate shall meet the specifications of WFI.

6.14 Compressed Air Validation:

- Compressed air system is designed to supply oil free (non-lubricated) compressed air to the various points.
- The compress air system is made up of control with self-diagnostic facility.

6.15 Sterilizer Cum Bung Processor Validation:

Sterilizer cum bung processor is used for washing of rubber bungs and for sterilization of article.

6.16 Sterilizing and Depyrogenating tunnel: It is used for sterilization and depyrogenation of glass Containers (Vials and ampoules).

6.17 Nitrogen: Nitrogen generation system is made up of self diagnostic property and nitrogen is used in different processes during manufacturing of products.

6.18 Analytical Method Validation:

All the Non- Pharmacopoeial analytical methods used in analysis at different stages of product shall be validation as per recommendations of ICH. Typical validation characteristics which should be considered area listed below:

Accuracy

Precision

Specificity

Detection limit

Quantitation Limit

Linearity

Range

6.19 Risk Assessment: Consists of the identification of hazards and the analysis and evaluation of risks associated with exposure to those hazards (as defined below). Quality risk assessments begin with a well-defined problem description or risk question. When the risk in question is well defined, an appropriate risk management tool and the types of information needed to address the risk question will be more readily identifiable. As an aid to clearly defining the risk(s) for risk assessment purposes, three fundamental questions are often helpful:

- What might go wrong?
- What is the likelihood (probability) it will go wrong?
- What are the consequences (severity)?

6.20 Calibration/Verification Policy:

- Calibration is done in two ways i.e. In-house calibration of instruments which can be performed at site and calibration done by external agency.
- Calibration of few instruments for which written procedure is available at the site are calibrated by qualified personnel at site by predefined written procedure.
- Agreement is done with external agency for the instruments and gauges which cannot be calibrated at the site.
- Master calibration plan is prepared and all internal and external calibrations are performed as per the master calibration plan.
- For some instruments there is policy of verification against the certified standards.
- Traceability for all standards shall be available at the site.

- All certified standards are recertified by government agency after span of time as per the scheduled.
- Certified standards shall only be used within date of certification.

6.21 Vendor Qualification:

Vendor qualification shall be carried out for all vendors of critical raw and packing materials, to ensure that the components of the product ,consistently meet predetermined specifications. ……. has an established standard operating procedure for vendor qualification.

6.22 Preventive Maintenance:

- Preventive maintenance of all equipments and instruments is taken care as per preventive maintenance schedule.
- Preventive maintenance schedule for all equipments and instruments is prepared and is approved by QA.
- Preventive maintenance is performed as per the approved schedule.
- Preventive maintenance can be done in-house or by outside party as per the requirement.

6.23 Protocol Preparation & Execution:

- Members of the validation team shall be responsible for preparation of validation protocol, specifically QA, along with user department shall prepare the protocol.
- Prepared protocol shall be reviewed by validation team and then the finally by the heads of the involved department.
- Validation protocol shall be finally approved by Head Quality Assurance.
- Execution of the validation activity as per the protocol shall be done by the user department with the help of involved department.
- All the work related to engineering operations shall be carried out by engineering department.
- All the analytical work involved in the validation shall be carried out by quality control Department.
- The activities related to issuance and dispensing of the material shall be taken care by Warehouse.
- Progress of validation activity and the compliance shall be monitored by validation Team.

- Final report of validation activity shall be prepared by QA with the help of user Department.

6.24 Annexure-I for Validation Master Plan preparation.

6.25 The Header part of VMP shall contains following details:

6.25.1 Company Logo, Validation Master plan, Company Name, Document No., supersedes no. and Page No.

6.26 Validation Master Plan shall contain the following content:

6.26.1 Approval Page

6.26.2 Introduction of the Document

6.26.3 Purpose

6.26.4 Scope

6.26.5 Responsibilities

6.26.6 Definition

6.26.7 Validation Master plan

6.26.8 Facility Description

6.26.9 Validation Policy

6.26.10 Revalidation Policy

6.26.11 Equipment Qualification

6.26.12 Facility Qualification

6.26.13 Process Validation Plan

6.26.14 Cleaning Validation Plan

6.26.15 Water System Qualification

6.26.16 HVAC System Validation

6.26.17 Steam Generator

6.26.18 Compressed Air Validation

6.26.19 Sterilization Cum Bung Validation

6.26.20 Sterilization and Depyrogenating Tunnel

6.26.21 Nitrogen Validation

6.26.22 Analytical Method Validation

6.26.23 Performance Qualification Plan of Utilities

6.26.24 Risk Assessment

6.26.25 Calibration Verification Policy

6.26.26 Vendor Qualification

6.26.27 Preventive Maintenance Policy

6.26.28 Document Control System

7.0 ABBREVIATIONS:

QA	Corporate Quality Assurance
EHS	Environment, Health & Safety
NA	Not Applicable
No.	Number
PDF	Portable Document Format
QA	Quality Assurance
QC	Quality Control
Sign	Signature
SOP	Standard Operating Procedure
VMP	Validation Master Plan

8.0 ANNEXURES:

ANNEXURE No.	TITLE OF ANNEXURE	FORMAT No.
Annexure– I	Validation Master Plan preparation	F01-00
Annexure – II	Weighing Balance Calibration Planner	F02-00
Annexure – III	Instrument Calibration Planner	F03-00
Annexure – IV	Equipment Validation Planner	F04-00
Annexure – V	AHU Validation Planner	F05-00

9.0 DISTRIBUTION DETAILS:

- Master Copy Quality Assurance Department
- Controlled Copy No. 01 Quality Assurance Department.
- Controlled Copy No. 02 Quality Control Department.
- Controlled Copy No. 03 Production Department.

- Controlled Copy No. 04 Formulation and Development.
- Controlled Copy No. 05 Engineering Department.
- Controlled Copy No. 06 Warehouse Department (Store)

10.0 REFERENCE:

- In-House, PIC/S VMP guidelines, WHO (TRS No. 937, 2006), Annex 4, Supplementary guidelines on good manufacturing practices: validation.
- As per SOP title good documentation practice.

11.0 REVISION HISTORY:

Revision No.	Change Control No.	Details of Changes	Reason of Changes	Effective Date	Done By
00	Not Applicable	Not Applicable	New SOP		

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Annexure-I

VALIDATION MASTER PLAN PREPARATION

Prepared By:

Name	Designation	Sign & Date
	Executive-Quality Assurance	

Checked By:

Name	Designation	Sign & Date
	Executive-QA/Assistant Manager QA	

Approved By:

Name	Designation	Sign & Date
	Head QA	

DECODING PHARMA

QUALITY ASSURANCE DEPARTMENT

STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
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Annexure-II

WEIGHING BALANCE CALIBRATION PLANNER

S.No.	Weighing Balance I.D.	Location	Capacity	Least count	Calibration Done												Calibration Due date
					Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec	

Approved By
Head-QA
(Sign/Date)

Annexure-III

INSTRUMENT CALIBRATION PLANNER

S.No.	Name of Instrument	Location	Instrument ID	Frequency	Calibration Done date	Calibration Due date

Approved By
Head-QA
(Sign/Date)

Annexure-IV
EQUIPMENT VALIDATION PLANNER

S.No.	Name of Equipment	Location	Equipment ID	Frequency	Validation Done date	Validation Due date

Approved by
Head QA
Sign/Date

Annexure-V

AHU VALIDATION PLANNER

S.No.	AHU No	AHU ID	Location	Frequency	Validation Done date	Validation Due date

Approved By
Head-QA
(Sign/Date)