



Inodaya
Hospitals

MAINTENANCE MANUAL

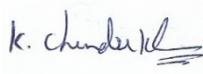
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Amendment/Revision Status Sheet

Sr.No. o.	Date	Revision No.	Section Affected	Page No. Affected	Details of Amendment	Reason for Amendment	Approval Signature
1							
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DISTRIBUTION LIST

The following are the authorized holders of the controlled copy of the Departmental Manual

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02.	MAINTENANCE DEPARTMENT

VOCABULARY & ABBREVIATIONS

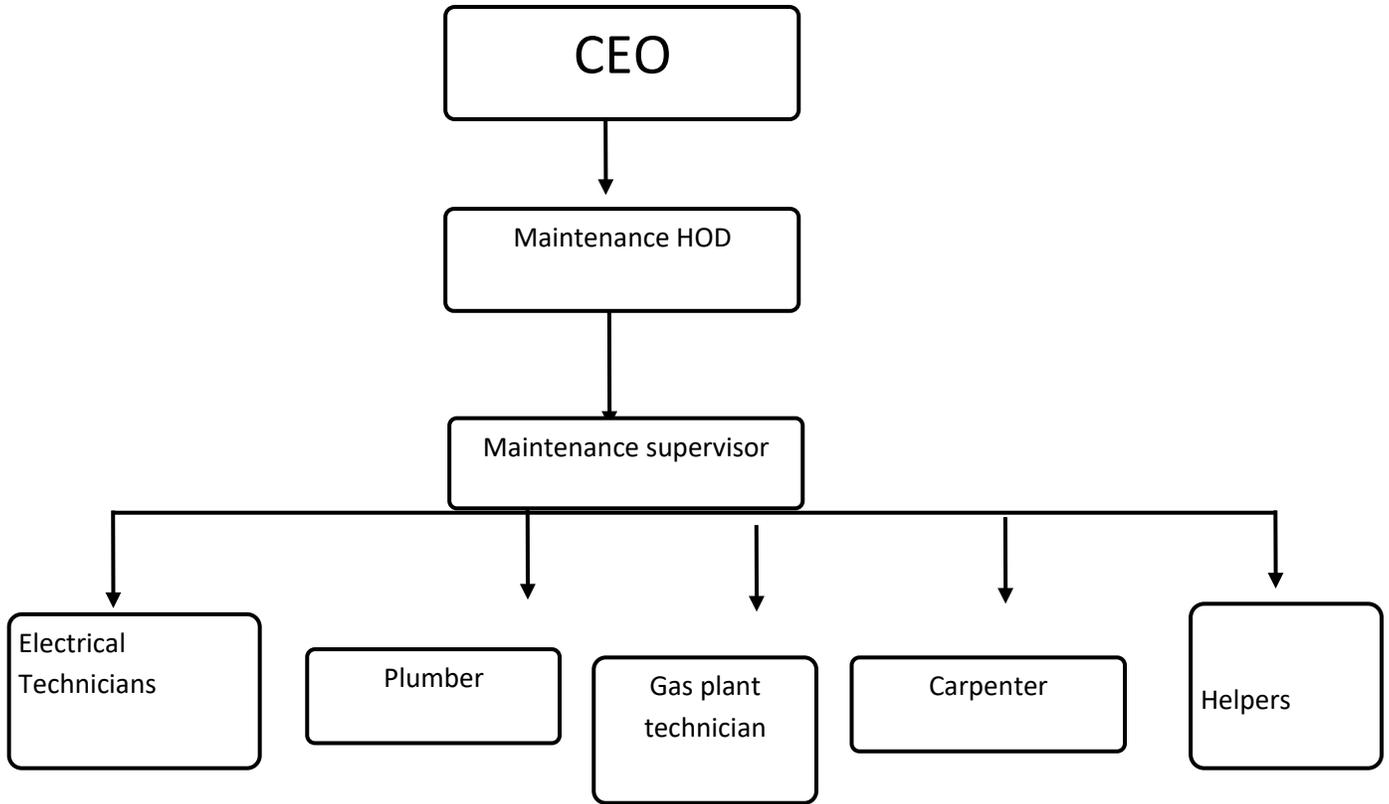
S. No	Abbreviation	Expansion
1.	IH	Inodaya Hospitals
2.	HOD	Head of the Department
3.	MD	Managing Director
4.	CEO	Chief Executive officer
5.	MS	Medical Superintendent
6.	MAIN	Maintenance
7.	uCi/g.	micro curies per gram
8.	Amd	Amendment
9.	No	Number
10.	QSM	Quality System Manual
11.	A.C	Air Condition
12.	D.G	Diesel Generator
13.	FMS	Facility Management & Safety
14.	Hrs	Hours

15.	AMC	Annual Maintenance Contract
16.	P.I	Purchase Indent
17.	FL	File
18.	O. T	Operation Theatre
19.	UPS	Uninterrupted Power Supply
20.	Govt.	Government
21.	Dept.	Department
22.	Mgr	Manager
23.	MSDS	Material Safety Data Sheet
24.	TV	Television
25.	AHU	Air Handling Unit
26.	FCU	Fan Coil Unit
27.	MRI	Magnetic Resonance Imaging
28.	CT	Computerized Tomography

29.	MC	Municipal Corporation
30.	F & B	Food and Beverages
31.	RO	Reverse Osmosis
32.	OPD	Out Patient Department
33.	CCU	Critical Care Unit
34.	ICU	Intensive Care Unit
35.	PPM	Parts Per Million
36.	HIC	Hospital Infection Control
37.	KV	Kilo Volts
38.	cu. Ft	Cubic Feet
39.	Cm	Centimeter
40.	KVA	Kilo Volt Ampere
41.	K. L	Kilo Liters
42.	N2O	Nitrous Oxide
43.	Kgs	Kilograms

44.	CMC	Comprehensive Maintenance Contract
45.	⁰ F	Degree Fahrenheit
46.	⁰ C	Degree Centigrade
47.	Mm	Millimeters
48.	uCi/g	micro curies per gram
49.	pH	Hydrogen Ion Concentration
50.	MSDS	Material Safety Data Sheet
51.	APPCB	Andhra Pradesh Pollution Control Board

ORGANOGRAM



REPONSIBILITIES:

1. MAINTENANCE INCHARGE

- Planning, Scheduling and controlling job works to be done by the department
- Renovation works of existing areas
- To check technical aspects of new equipment, receiving new mechanical/ electrical equipment's and supervise installation of the equipment.
- Organizing repairs of major and minor breakdown
- To ensure that preventive maintenance is as per schedule.
- Material indenting to Purchase Department.
- Proper Schedule of maintenance of all patient rooms and common areas & ICU's & Hostels with proper electrical, plumbing, carpentry and AC support.

2. SUPERVISOR:

- Correct execution and functioning of work planned by Incharge along with the Technicians.
- Responsibility for all sections in shifts of Electrical, Air conditioning, Plumbing and preventive maintenance scheduling execution.
- Maintain preventive maintenance registers.
- To follow up indents for procurements of materials required for maintenance
- Maintain inventory to have a control of materials consumption.
- Prepare shift schedules and to arrange for alternative operation of activity of any service area

3. ELECTRICIANS:

- Take charge of previous shift work progress and to attend pending jobs if any.
- Switch 'ON' & 'OFF' lights and neon signs as per timings.
- Run the DG set in manual position and observe the condition and parameters.
- Check diesel level, lubricant oil level, water level of DG sets and to refill if necessary.
- Maintenance of all electrical problems in shifts as well as general shift
- Maintain log books of H.T. and meter readings
- Monitor incoming supply parameters, D.G. set, capacitor setc
- Check switch gear and MCCB'S
- Preventive maintenance of all panels

- Wiring and cabling jobs of alterations and extension jobs
- Change the transformer tapping if the voltage is high or low
- Making the rounds at night times and switch off the unwanted lights
- Contact AP TRANSCO in case of power failure.
- To check oil levels, water level in radiators and batteries conditions etc
- To operate and observe the parameters of engine and Generator panel
- To monitor all requisite parameters during operation
- To check operation of DG set and breakers in MANUAL position as well as 'AUTO' position
- To keep track of schedule maintenance checks as per running hours.

4. PLUMBERS:

- To make rounds to all wards and record and attend to complaints everyday
- To record meter reading of manipulate water supply
- To check levels of water sumps and tanks and to run pumps and to maintain levels
- To observe the performance of pumps
- Operation of water softener to regenerate water softener and maintain the PPM of water
- To attend all plumbing & Sanitary problems
- To check Drainage system
- To monitor cold water and hot water supplies and all the utility areas
- Cleaning of the rainwater trenches
- Prevention maintenance and keep routine boiler operator execution
- Checking supply of steam required places.

5. CARPENTER:

- Attend day to day problems pertaining to carpentry works
- Make round to all wards everyday and attend to complaints of carpentry
- Attend to door closure, Locks & door problems
- Maintain logbook

6. PAINTER:

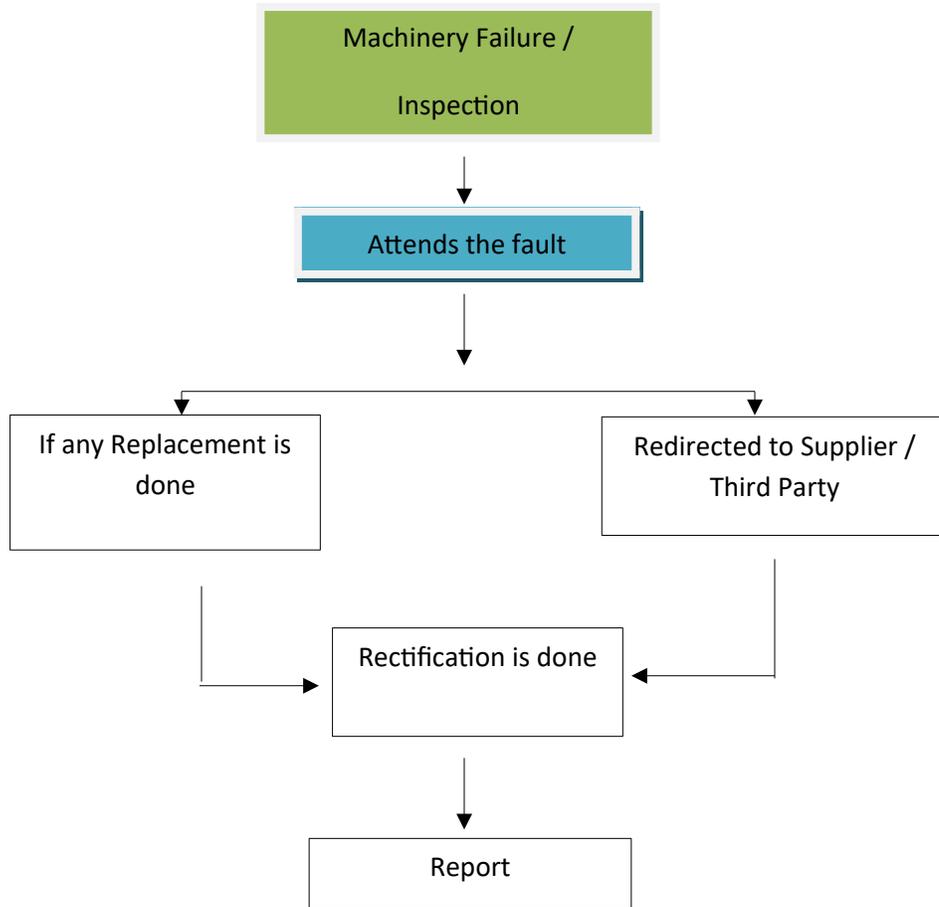
- Painting for exterior and interior of our hospital.

7.GASPLANT TECHNICIAN

Gas plant operators have a wide range of responsibilities, which can include:

- Operating automated control panels to monitor and adjust equipment for optimal efficiency
- Controlling gas pressure by regulating gas flow into storage tanks
- Maintaining and repairing equipment such as compressors, pumps, meters, valves, and pipes
- Monitoring equipment operation to ensure it is operating safely
- Conducting safety inspections on equipment to determine if repairs are needed
- Determine causes of abnormal pressure variances, and make corrective recommendations, such as installation of pipes to relieve overloading.
- Distribute or process gas for utility companies or industrial plants, using panel boards, control boards, and semi-automatic equipment.
- Monitor equipment functioning, observe temperature, level, and flow gauges, and perform regular unit checks, in order to ensure that all equipment is operating as it should.
- Test gas every 6 months, chemicals, and air during processing to assess factors such as purity and moisture content, and to detect quality problems or gas or chemical leaks.
- Change charts in recording meters.
- Clean, maintain, and repair equipment, using hand tools, or request that repair and maintenance work be performed.
- Collaborate with other operators to solve unit problems.
- Contact maintenance crews when necessary.

PROCESS FLOW CHART



LIST OF RECORDS

S.NO	FILE CODE	FILE NAME	RESPONSIBILITY	STORAGE	RETENTI ON TIME
1	IH/MAIN/R/01	Maintenance log	Maintenance incharge	Main-dept	Continuous
2	IH/MAIN/R/02	List of Machineries	Maintenance incharge	Main-dept	Continuous
3	IH/MAIN/R/03	Preventive Maintenance Plan	Maintenance incharge	Main-dept	Continuous
4	IH/MAIN/R/04	Preventive Maintenance Schedule	Maintenance incharge	Main-dept	Continuous
5	IH/MAIN/R/05	Purchase Order File	Maintenance incharge	Main-dept	Continuous
6	IH/MAIN/R/06	Spares File	Maintenance incharge	Main-dept	Continuous
7	IH/MAIN/R/7	Inspection Register	Maintenance incharge	Main-dept	Continuous
8	IH/MAIN/R/8	AMC/Warranty Register	Maintenance incharge	Main-dept	Continuous
9	IH/MAIN/R/9	Service Register File	Maintenance incharge	Main-dept	Continuous
10	IH/MAIN/R/10	Approved Supplier List	Maintenance incharge	Main-dept	Continuous
11	IH/MAIN/F/11	Safety Tool List	Maintenance incharge	Main-dept	Continuous
12	IH/MAIN/R/12	Complaint / Feedback Register	Maintenance incharge	Main-dept	Continuous
13	IH/MAIN/R/14	License File	Maintenance incharge	Main-dept	Continuous

14	IH/MAIN/F/15	Building Layout File	Maintenance incharge	Main-dept	Continuous
15	IH/MAIN/R/16	Incident / Accident File	Maintenance incharge	Main-dept	Continuous

1.MAINTENANCE OF FACILITIES

1. PURPOSE

The purpose of this procedure is for effective maintenance of Organizations environment and facilities to ensure safety of patients, their families, staff and visitors.

2. SCOPE

Hospital wide

3. RESPONSIBILITY

Maintenance-In charge, Supervisor, Technicians, Plumber, Painter, Carpenter

4. PROCEDURE

- Facilities are appropriate to the scope of services of the Inodaya Hospitals.
- Maintenance staff is available round the clock.

4.1 Building Maintenance

- The building maintenance involves masonry construction, minor modifications, repairs, plumbing works, painting, polish, carpentry works etc.
- Periodically inspected every part of the premises and noted down the maintenance works to be carried out every month.
- The noted points of maintenance work will be put-up to the safety committee.
- The management in the committee meeting approves the maintenance work.
- Day to day rounds by the designated person to the various department is being done.
- Further any complain by the user department will be informed to the maintenance dept and is noted down in the complaint register.
- A complaint register is maintained to indicate the date, time of receipt of complaint, allotment of job and completion of job
- The completion of job is ratified by the user department.
- During Building maintenance the following applicable work order is issued to suppliers / sub contractors – Electrical, AC, Plumbing, etc., Excavation and civil work.

4.2 Plans & Designs

- The approved building plans are available in maintenance department. As built drawing, layout, plumbing plans and layout, electrical plans and layout, Fire escape plan drawings & layout, etc.
- To fire-evacuation plan, separate civil, electrical, plumbing, HVAC and piped medical gas drawings are maintained.
- Fire exit plan of the floor are displayed at the appropriate locations.

4.3 Civil Works

- Civil works are carried out on the basis of written request from individual departments; the request will detail the nature of work. The work is carried out on approval by the management. The completion report is given to the management verbally.

4.4 Laundry

- The equipment maintenance activity is coordinated by the Maintenance In-charge
- Any complaints or the maintenance activity is routed to the maintenance department through the Laundry In charge.

4.5. General Lighting

- A facility maintenance team is available in all shifts to attend the general lighting and street lighting.
- The night shift in charge will note all the light faults in the log book and the same will be attended. The team will also attend all the light faults comes through oral/complaint request forms.

4.6. Sign postings

- Internal and external signs are displayed in a language understood by the patient, family and community.
- All signage are in bi-lingual. This signageguide the patient and visitors.
- Fire signage follow the norms laid down by national building code.

Water

- The maintenance department is responsible for the water supply system
- The hospital ensure a round the clock water supply

- The water is periodically (Once in a month) sent for testing (bio-chemical, and endotoxins) and Monthly testing (microbiological) for the water quality (Drinking water & RO Water). The results of the reports are discussed in the HIC meeting. Corrective and preventive aspects are initiated.
- Cleaning of the RO tanks every month, and others Sub miscible, every 3 months
- The hospital shall supply safe and Potable water across the hospitals
- The water from the source (bore well) will be pumped into the tank
- The alternative sources of water:
 1. Primary source: Municipality water,
 2. Secondary source: Bore Well,
 3. Tertiary source: Water Tanker
- In case any failure of the Water sources and corresponding circuitry it is to be immediately informed to the Maintenance Manager/Department
- All the possible steps are to be taken for the water conservation.
- Further any complain by the user department will be informed to the maintenance dept and is noted down in the complaint register.
- A complaint register is maintained to indicate the date, time of receipt of complaint, allotment of job and completion of job
- The completion of job is ratified by the user department.

Electricity

- The hospital ensure a round the clock electricity supply
- The electric load is appropriate to the requirement of hospital and is adhere to the regulatory requirement
- The alternative source of electricity, is installed – 2 generators (250KV 320 KV).
- If there is any breakdown in power supply the Generator starts automatically within 30 seconds. The current is carried to the panel switchboard from where it is carried to the synchronizing panel and distributed via the ACB to the whole hospital if the load is high.
- Further any complain by the user department will be informed to the maintenance dept and is noted down in the complaint register.

- A complaint register is maintained to indicate the date, time of receipt of complaint, allotment of job and completion of job
- The completion of job is ratified by the user department.

2. MAINTENANCE OF EQUIPMENT AND ACTIVITIES

1. Purpose

The purpose of this procedure is for effective maintenance to ensure Equipment and to assess their performance levels.

2. Scope

Maintenance department maintains smooth functioning of the hospital like routine, preventive & break down maintenance of the equipment's including AMC & Warranty periodical servicing etc.

3. Responsibility

Maintenance In-charge, Supervisor, Technicians, Plumber

4. Procedure

- The electric load is appropriate to the requirement of hospital and is adhere to the regulatory requirement
- Qualified and trained personnel operate and maintain the equipment.
- Wherever applicable all the inventories and log is maintained of the equipment (Quality conformance certificate/marks with manufacturer factory test certificate)
- The alternative source of electricity, is installed – TWO Diesel Generator (DG)
- Further any complain by the user department will be informed to the maintenance dept and is noted down in the complaint register.
- A complaint register is maintained to indicate the date, time of receipt of complaint, allotment of job and completion of job
- The completion of job is ratified by the user department.
- Response times are monitored from reporting to inspection and implementation of corrective actions in a complaint register.

- Monthly preventive maintenance is carried-out and the servicing reports are maintained in the department.
- A planned preventive maintenance tracker is maintaining according to the manufacturer's instruction manual of the existing equipment.

2.1 GENERATOR:

There is Two generator installed in hospital Premises.

MAKE	Powerica Limited
KVA	320
KVA	250
MAX UTILIZATION	450 AMPS

Process:

If there is any breakdown in power supply the Generator starts automatically within 30 seconds. The current is carried to the panel switchboard from where it is carried to the synchronizing panel and distributed via the ACB to the whole hospital if the load is high.

HEATING, VENTILATION AND AIR CONDITIONING

2.2 AHU:

- Air handler's unit include evaporative unit, filter unit, and booster fan.
- No. 3 of service doors are provided for each air handling system.
- Cooling of the process air is achieved by circulation of refrigerant through the chillier coil place inside the evaporate units.
- 10% fresh air is drawn in through the fresh air intake damper, filtered down to 5 microns, temperature and relative humidity changed to the requirement of the end user.

- The quality of air supply/delivered from the air handling system is of 18 Deg C+/- 2 Deg C, further filters down to 0.3 microns at the terminal heap modules the designed temperature at the supply grill is 18 Deg C.

2.3 FILTER SERIES

The following filters are installed

- 10 micron – Return modules -2ply HDPE and polyfiber media (washable) –box type.
- 10 micron – Evaporative unit – HDPE and polyfiber (washable) – flange mounted with gasket on flange for a leak proof fit.
- 5 micron – filter unit – HDPE and polyfiber (washable) – flange mounted with gasket on flange for a leak proof fit.
- 0.3 Hepa filter – at the high pressure side (non washable) - flange mounted with gasket on flange for a leak proof fit.

Maintenance schedule:

Name	Type	Cleaning protocol	Cleaning schedule
Pre filter – 10 micron	washable	<ul style="list-style-type: none"> • Ducting by light knocking • Dip in normal water, rinse twice soak in water for 30 min • Rinse 5-6 times in fresh water • Dry in a closed room – natural drying 	Once in a week
Fine filter – 5 micron		<ul style="list-style-type: none"> • Ducting by light knocking • Dip in normal water, rinse twice soak in soap solution for 30 min • Rinse 5-6 times in soap solution rinse in fresh water • Dry in a closed room – natural drying • While drying, media should not touch the floor or table top, allow to 	Once in a week

		suspend free from the flange.	
Hepa filters	Non-washable	<ul style="list-style-type: none"> The filter media is delicate, hence do not try to touch the media, do not clean, and do not wash. The life of the heap filter with it's fully efficiency shall be 1 year. 	

- All the maintenance services are adhering to manufacturer's recommendation and good infection control practice requirement.
- All the maintenance of the HVAC is done through AMC.
- Further if there is any complain pertaining to filter/laminar flow the same is forwarded to AMC team.

2.4 Air Conditioning System

- To provide comfortable, hygienic & environmental condition for patients, their attendants and the staff and to help, in reducing preventable part of hospital associated infection
- A hospital with this size requires an AC system that will meet its needs effectively and efficiently.

2.5 Annual Maintenance and Contract

- The maintenance personnel maintain a list of activities of the AMC and monitor the visits of the contract people.
- When the contract personnel are servicing the equipment the presence of the maintenance technician is mandatory.
- The respective department personnel ensure that the equipment covered under AMC is serviced at regular intervals.
- The AMC details are filed.
- Separate records are maintained for each equipment.
- The Equipments on AMC are identified and marked in the History card

- The history card contains the preventive maintenance frequency and calibration requirements and break down maintenance details
- On the basis of the information gathered on the history card, Periodic Preventive Maintenance (PPM) schedule is made
- The Facilities executive follows the PPM schedule in conjunctions with the user department on the availability of the machine to conduct the preventive maintenance by the contract agency
- The facilities supervisor collects and documents the Service report of the maintenance conducted on the equipment by the AMC contractor
- The break down time is recorded
- All the spares details are recorded
- The response time of the AMC contractor is recorded
- After the Service the Machine is thoroughly tested by the Facilities executive and hands over to the User department.
- The user department signs the work order request if the service was done on a break down maintenance

2.6 Preventive Maintenance

- Preventive maintenance is carried out to minimize the potential causes for Breakdown.
- Annual Preventive maintenance plan is prepared based on the manufacturer recommendation or from the previous breakdown data or by past experience.
- Based on annual plan monthly preventive maintenance schedule is prepared considering the manpower and machine/equipment availability.
- All necessary spares & any other item required for maintenance is received from Director Operations through Indent Form.
- Preventive maintenance is carried out as per check list & the details are recorded in the Preventive maintenance check list for future reference.
- Monthly Preventive Maintenance schedule is updated by the respective maintenance in charge after Completion.
- The preventive maintenance effectiveness is monitored through machine/equipment down time trends.

- The preventive maintenance schedule is made for each equipments& shall be strictly being adhered on various areas as scheduled below
 - Weekly Schedule
 - Monthly schedule
 - quarterly schedule
 - Half -Yearly schedule
 - Yearly schedule

2.7 Incident reporting and corrective action

- In the event of an incident occurs, incident report is made and appropriate action is initiated.
- Parallels a corrective action is taken in the instance by making an alternative arrangement. Ongoing procedure will not be interrupted.

2.8 Quality Assurance and Control

- The Supervisors/Inchargemonitors the quality of maintenance/service to the equipment every week, to ensure that even minor complaints are rectified immediately.
- In the event of a spare part of machinery / equipment need to be replaced only genuine spares are used.
- While the AMC personnel service the equipment, it is closely monitored. No person is allowed to attend the equipment without presence of the Maintenance personnel.

2.9 Internal Audit

An internal audit is to be carried out for the following reasons:

- Check the usage of material to detect reasons for excessive consumption
- Periodic check of equipment to prevent unexpected major break down/losses.

3. MAINTENANCE OF SAFE WATER AND ELECTRICAL FACILITIES

1. PURPOSE:

- To maintain & provide adequate, safe and portable water facilities to patients, staff and visitors of Inodaya Hospital at all time with alternate sources identified.
- To meet the clinical and non-clinical necessities of electrical facilities hospital wide for all patient related activities, staff and visitors of Inodaya Hospital with alternate sources identified.

2. SCOPE:

Hospital wide

3. RESPONSIBILITY:

Maintenance In-charge, Supervisor, Technicians

4. PROCEDURE

- Regular tests are done so as to provide portable water which is available round the clock in Inodaya Hospital
- To keep a check so that no break down should occur at the time the facility is used.

4.1. SAFE WATER:

- The hospital has adequate water supply to meet the daily requirement.
- To cater bulk requirements in the hospital taking water from 4 bore wells which are installed in our hospital campus addition to that we are receiving water from HMWSSB (Hyderabad Metropolitan Water Supply and Sewerage Board).
- In case any failure of the Water sources and corresponding circuitry it is to be immediately informed to the Maintenance Manager/Department.
- All the possible steps are to be taken for the water conservation.
- Further any complain by the user department will be informed to the maintenance dept and is noted down in the complaint register.
- A complaint register is maintained to indicate the date, time of receipt of complaint, allotment of job and completion of job
- The completion of job is ratified by the user department.

- Sewage Treatment Plant (STP) is installed (Refer – STP Operational manual)

CLEANING

- The cleaning of sump and overhead tanks is be done once in six months
- Water tank cleaning schedule for the year 2018 is prepared.

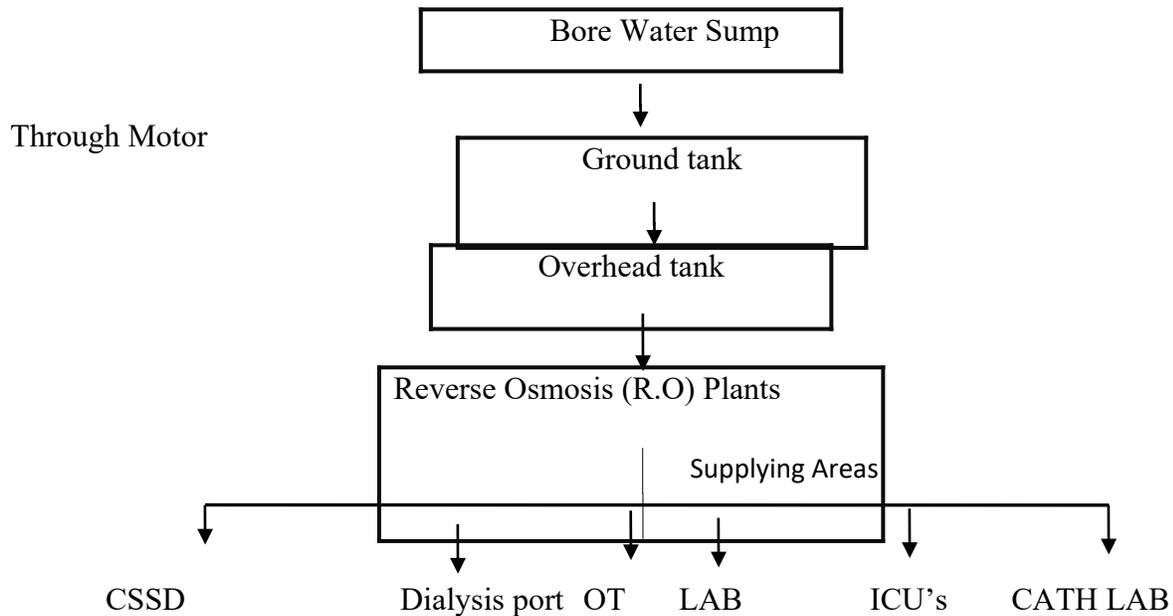
4.1.1. Process and procedures for maintaining the Safe water

- The water supply is stored, chlorinated, purified based on the types of the usage which are mentioned below.
- Municipal Water
- Reverse Osmosis (RO)Water
- Bore well water

4.2 BORE WATER

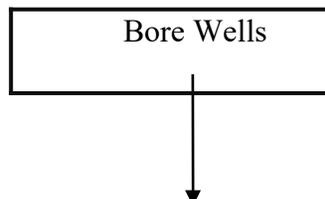
4.2.1 REVERSE OSMOSIS (R.O) WATER:

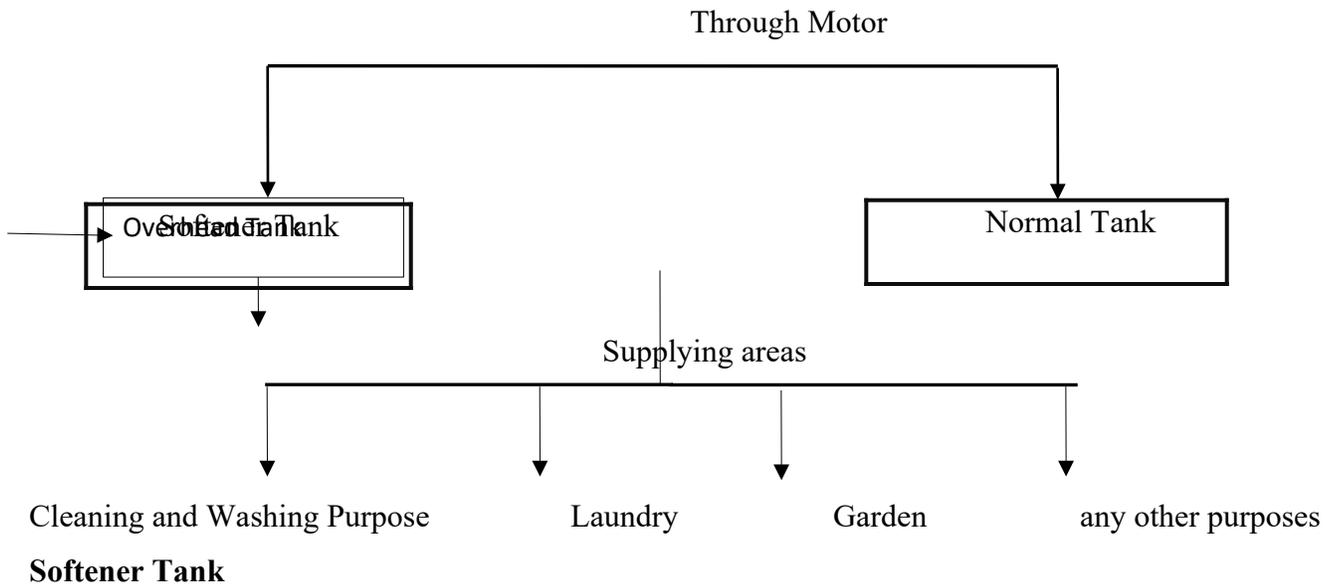
4.2.2. Process for Supply of Reverse Osmosis (R.O) Water and Usage Areas



4.4. BORE WELL WATER

4.4.1 Process for supply bore well Water and Usage Areas





The water from the raw water sump is sent to the softener plant for softening treatment. This softener consists of layers of resin and activated carbon. Every day the process of doing a re-generation of the softener plant is required to get sufficient required PPM (hardness)

5. Reverse Osmosis Plant: (R.O. Plant).

This plant caters to the nephrology and Dialysis unit, all ICU's.

The plant is used to maintain the pH balance of water at a desired level. The water for this unit comes from the R.O. Tank (Overhead). The pH tests are done every day by the Maintenance Department.

Testing Water Quality:

- The stored water in tanks is periodically (Once in Every month) sent for testing in the **“NAVEGE ENVIRO LABS” KAKINADA / SV ENVIRO LABS, VISAKHAPATNAM**, for the water quality. The reports of the same are documented.
- The water is periodically (Once in Every month) sent for testing (bio-chemical) and Monthly testing (microbiological) for the water quality (Drinking water & RO Water). The results of the reports are discussed in the HIC meeting. Corrective and preventive aspects are initiated.

4.ELECTRICAL FACILITIES

PROCEDURE:

- The hospital receives the power supply from the Sultan Bazaar substation. The lines entering the H.T Yard via cables carries 11KV power.
- The electricity cables pass through V.C.B where the electric circuit is broken down. The electric power enters the transformer (500 KVA) through the H.T Cables.
- Here the current is brought down to 440 volts. The bus bar passes through the ACB, where the current is divided into a number of lines (panel boards). The current from, this panel is send to different departments in the hospital through the sub-control panels.
- One of the lines go to the 30 KV, 10 KV and 1 KV UPS (Uninterruptible Power Supply) we have separate distribution panel which is the power taking from the UPS.
- The UPS supply lines flow to the sub panels from where it is further distributed to the main areas of the hospital. i.e. OT's, MICU, Lab's & EDP Servers & all the systems in the hospital.

LIFT:

- There are 2 lift places in the hospital premises.
- One for doctors and ONE lift for patients.

5. PATIENT SAFETY DEVICES

1. PURPOSE:

The purpose is to help the Inodaya Hospitals patients and staff, identify different safety devices available/installed throughout the hospital and inspect periodically.

2. SCOPE:

Provide safety to all staff, patients, relatives and other visitors to Inodaya Hospitals in the event of an accident or emergency.

3. RESPONSIBILITY:

Maintenance In charge, Supervisor, Technicians,

4. DESCRIPTION:

4.1 Patient safety devices are installed across the organization and inspected periodically.

4.1.1 Fire Safety Devices

4.1.2 Bed rails

4.1.3 Safety belts in stretchers & wheel chairs

4.1.4 Grab Bars

4.1.5 Nurse calling system in floors

4.1.1 Fire Safety Devices

- a. Fire extinguishers
- b. Fire hose reel
- c. Smoke detector
- d. Fire sprinkler
- e. Fire alarm

a. Fire extinguishers:

Fire Extinguishers are used to control the fire accidents by release of pressure stored inside the body. This extinguisher knocks down fire by beating and displacement of air.

- **Uses:**

It is suitable to combat fires involving wood, inflammable liquids, gasses and electrical wiring.

- **Locations:**

Adequate fire extinguishers are placed in the hospital in different locations including Nursing stations, Emergency areas, Radiology units, labs and other statutory locations.

- **Inspection:**

Fire extinguishers are inspected once in a month in house maintenance, then every 3 months' verification will be done by "Modern enterprises Pvt.Ltd", and in case of used extinguishers are immediately replaced.

- **Training:** HR department ensures that all the hospital staff is trained in usage of Fire Extinguishers.

b. Fire hose reel:

A fire hose is a high-pressure hose used to carry water or other fire retardant (such as foam) to a fire to extinguish it. Outdoors, it is attached either to a fire engine or a fire hydrant. Indoors, it can be permanently attached to a building's standpipe or plumbing system.

- **Location:**

It is located in all the floors to carry water to a fire to extinguish it.

- **Inspection:**

Fire Hose reels are inspected once in a month.

c. Smoke detector:

A smoke detector is a device that detects smoke, typically as an indicator of fire and issue a signal to a fire alarm system

- **Location:**

It is located in all the areas of the hospitals including various departments like wards, nursing stations, ICU's etc.

- **Inspection:**

It is monitored daily through the fire indicator which is installed in the maintenance department.

d. Fire sprinkler

A fire sprinkler is the part of a fire sprinkler system that discharges water when the effects of a fire have been detected, such as when a predetermined temperature has been exceeded.

- **Location:**

It is located in all the areas of the hospitals including various departments like wards, nursing stations, ICU's etc.

- **Inspection:**

It is inspected once in a month.

e. Fire Alarm:

Fire alarm systems are intended to notify the hospital occupants to evacuate in the event of a fire or other emergency, report the event to an off-premises location in order to summon emergency services, and to prepare the structure and associated systems to control the spread of fire and smoke.

- **Location:**

Fire alarms are located in all the floors.

4.1.2 Bed rails:

A hospital bed is a bed specially designed with side rails for hospitalized patients for their comfort, safety and well-being and for the convenience of healthcare workers.

- **Location:**

Beds are provided with side rails for all the vulnerable patients in areas such as ICU's, Casualty, Pediatric wards etc.

4.1.3 Safety belts in stretchers & wheel chairs:

All the wheel chairs & stretchers are provided with the safety belts for the safety of the patients while transferring them from one place to another.

- **Location:**

Stretchers and wheel chairs are available in various areas like casualty, O.T, ICU's etc.

- **Inspection:**

All the stretchers and wheelchairs are inspected once in every week.

4.1.4 Grab bars

Grab bars is a patient safety devices designed to enable a person to maintain balance, lessen fatigue while standing, hold some of their weight while moving, or have something to grab onto in case of a slip or fall.

- **Location:**

All the toilets are provided with the grab bars.

4.1.5 Nurse call bell:

A Nurse Call bell is a device to efficiently attend the needs of patients in hospitals as it is the most important aspect of the hospital and its staff to respond to the patients request more quickly, efficiently & effectively.

- **Location:**

Every ward/room is provided with a nurse call system to respond to the patient request quickly.

- **Inspection:**

It is done every month to ensure it is working properly.

6.REPLACEMENT AND DISPOSAL OF EQUIPMENTS

1. Purpose:

- The purpose of this procedure is to ensure that services and facilities are continuously effective.
- To ensure safety of patient and staff.
- To ensure space is utilized on disposal
- To upgrade to newer version to enhance quality care and safety to the patient and the staff
- To ensure documentation as per guidelines.

2. Scope: Service supportive equipment's and instrument hospital wide.

3. Responsibility:

- Maintenance Incharge
- Respective Department Heads.

4. Policies and Procedure:

- Daily work desk instructions are followed as per manufacturer manual
- All the preventive services are carried out in-house or out house as identified during the installation or amended during the course of use.
- AMC are identified where it is not feasible for local maintenance, Calibration requirement are met as identified.
- If for any reasons, the breakdown complains are repetitive, the spares are not cost effective and the outcome of the equipment can be in question, the incharge seeks the opinion of the AMC on the continuity of operation of machines and also includes his opinion to the management/ Condemnation committee for decision on replacement.

- The opinion to dispose it or resale to the AMC team or any other service provider will be evaluated, and other options to sell it on scrap will be considered.
- For all reasons records of events in the history card is carried out for evaluation and rating the equipment.
- The records pertaining to condemnation of equipment is maintained.