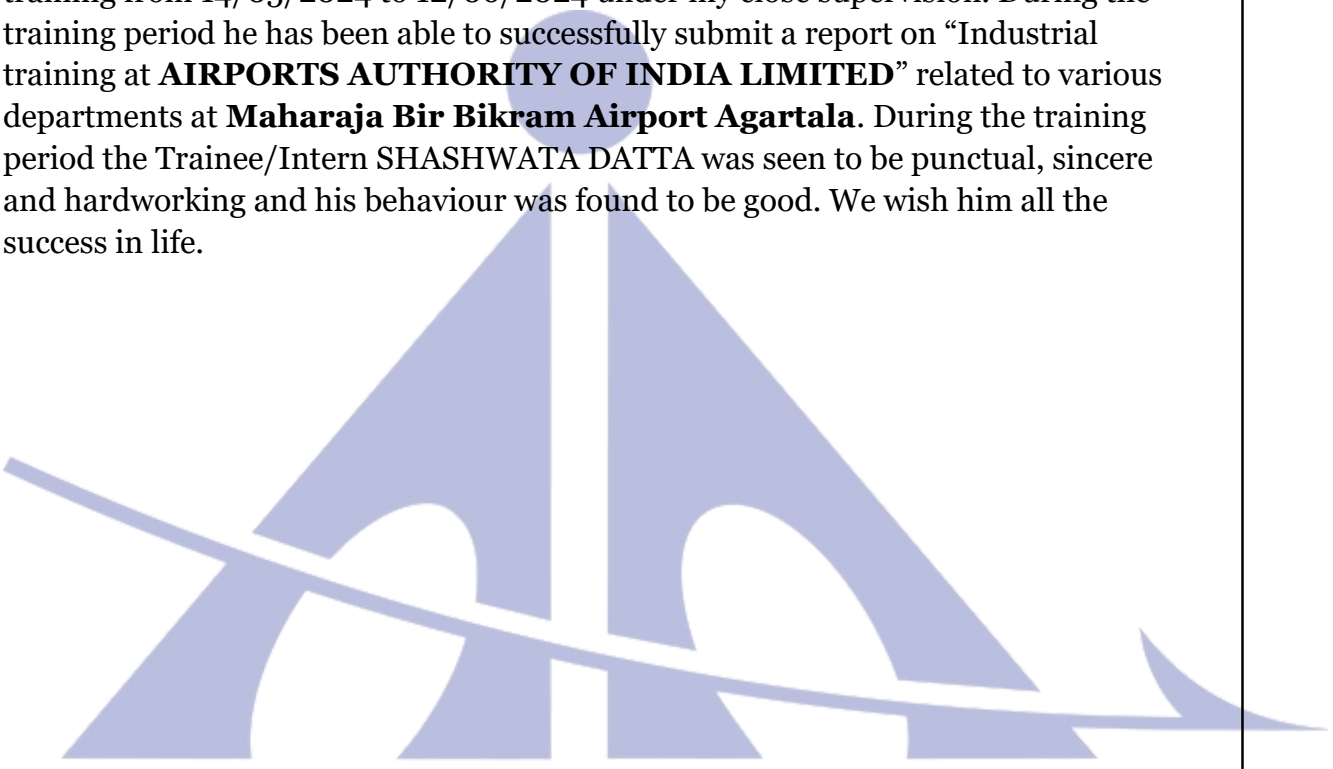
PROJECT REPORT

AIRPORTS AUTHORITY OF INDIA
MAHARAJA BIR BIKRAM AIRPORT

NAME: SHASHWATA DATTA
ENROLLMENT: 21UEE120
DEPARTMENT OF ELECTRICAL ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY
AGARTALA

CERTIFICATE

This is to certify that **SHASHWATA DATTA** bearing enrolment 21UEE120 studying in 7th semester of B.Tech in the Department of Electrical Engineering of National Institute of Technology Agartala, has successfully completed his industrial training from 14/05/2024 to 12/06/2024 under my close supervision. During the training period he has been able to successfully submit a report on "Industrial training at **AIRPORTS AUTHORITY OF INDIA LIMITED**" related to various departments at **Maharaja Bir Bikram Airport Agartala**. During the training period the Trainee/Intern SHASHWATA DATTA was seen to be punctual, sincere and hardworking and his behaviour was found to be good. We wish him all the success in life.



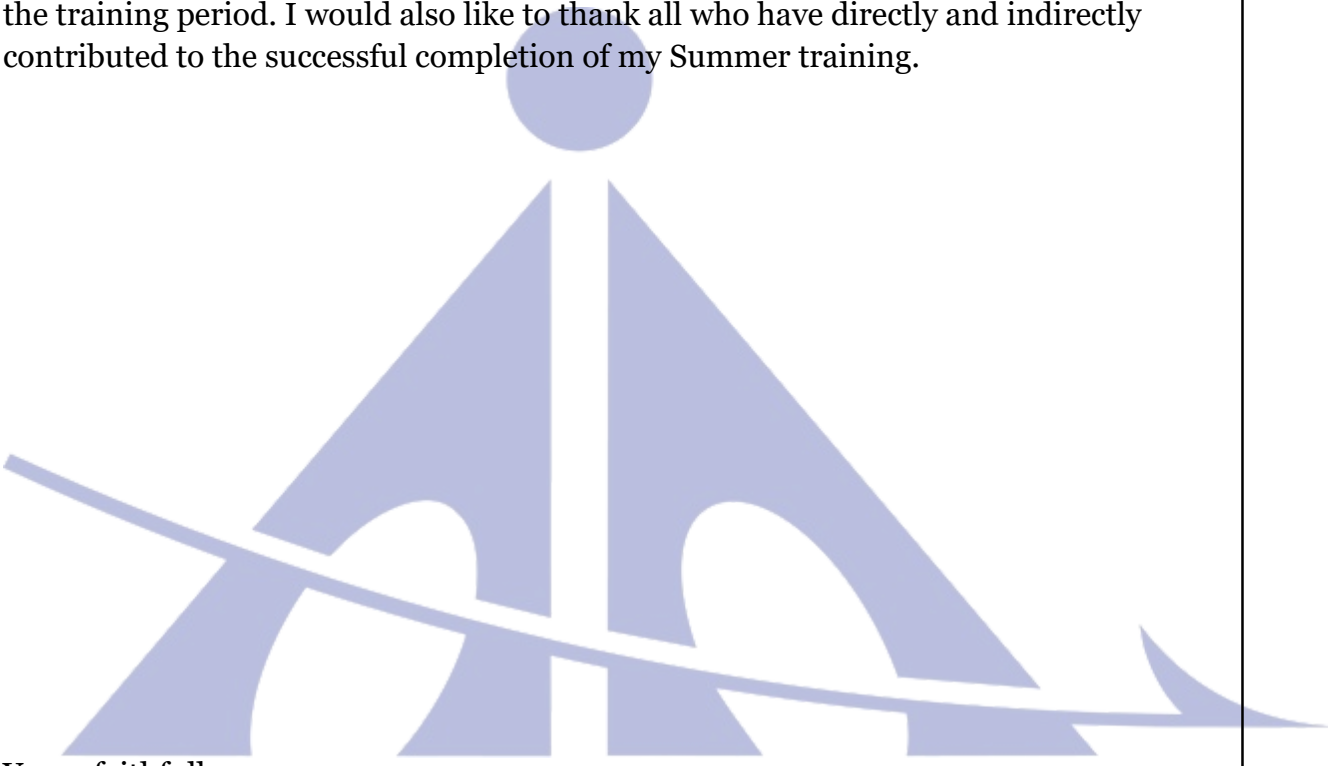
Training coordinator

Mentor

Acknowledgement

I would like to take this opportunity to express my profound and deep regards to my guide Mr. Amit Kumar Layek (Asstt. Gen. Manager, Engg.E) for his constant guidance, monitoring and encouragement throughout the training period.

I am very grateful to all the staff members of AAI of MBB Airport for providing me with academic inputs, and valuable information in their respective fields throughout the training period. I would also like to thank all who have directly and indirectly contributed to the successful completion of my Summer training.



Yours faithfully

Shashwata Datta
Enrollment: 21UEE120
Department of Electrical Engineering
National Institute of Technology Agartala

Date: 14th June 2024

Place: MBB Airport

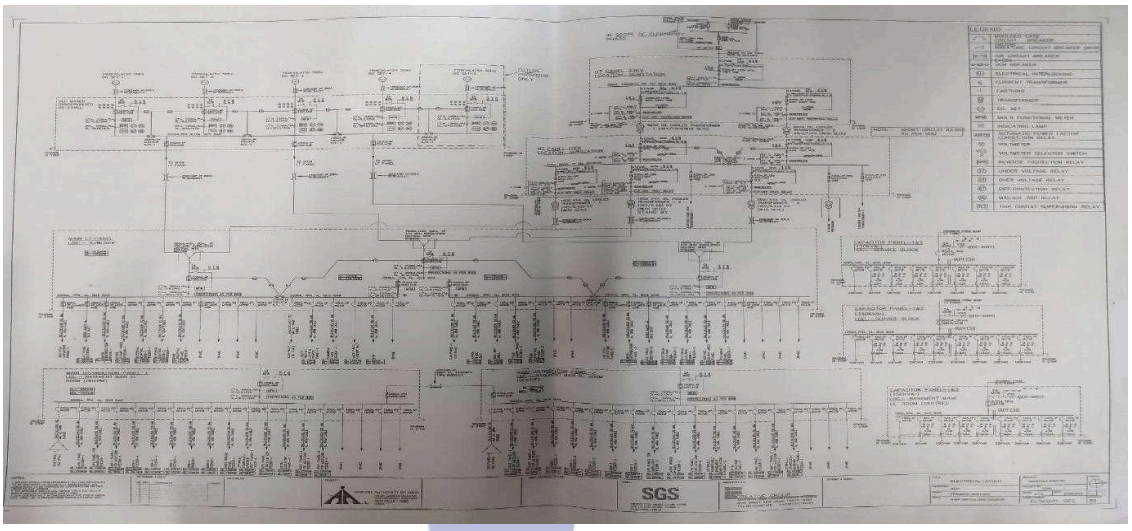
Contents

Introduction

The Airports Authority of India (AAI) is a statutory body under the ownership of the Ministry of Civil Aviation, Government of India. It is responsible for creating, upgrading, maintaining, and managing civil aviation infrastructure in India. It provides Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) services over the Indian airspace and adjoining oceanic areas. AAI currently manages a total of 137 airports, including 34 international airports, 10 Customs Airports, 81 domestic airports, and 23 Civil enclaves at Defence airfields.

MBB Airport (IXA) is an international airport located in Agartala, the capital of the state of Tripura in India. It is administered by the Airports Authority of India (AAI). The main organisation for creating the regulations for controlling air traffic is the International Civil Aviation Organization (ICAO). MBB Airport earlier known as Agartala Airport is situated 12 kilometres (7 miles) northwest of Agartala. It is the second busiest airport in North-East India after Lokpriya Gopinath Bordoloi Airport and 29th busiest airport in India. The new terminal of the airport has 20 check-in counters, six parking bays, four aerobridges, conveyor belts and passenger friendly modern facilities and amenities like In-Line Baggage System (ILBS), Escalators, Lifts, etc.

Power System



The power supply is one of the most important units for any Industry. It is very crucial to maintain a continuous and uninterrupted power supply across the Airport. Here in Maharaja Bir Bikram (MBB) Airport, the main source of power is the Tripura State Electricity Corp. Ltd.(TSECL). The high voltage of 33Kv is taken from this source.

33*KV Feeders* **(79** *Tilla* **&** *Durjoynagar***)** → *RMU Panel* → **33***KV HT Panel* → **4***MVA Transformer* **(2** *in Numbers***)** → **11***KV ST Panel* → *Distribution Panel* → *Main LT Pane*

- **33KV Feeder:**

A feeder is a conductor or set of conductors that carry electrical power from a primary distribution point (such as a substation or transformer) to secondary distribution points or loads. Feeders transport electricity over longer distances and at higher voltages, serving as the main arteries of the distribution network.

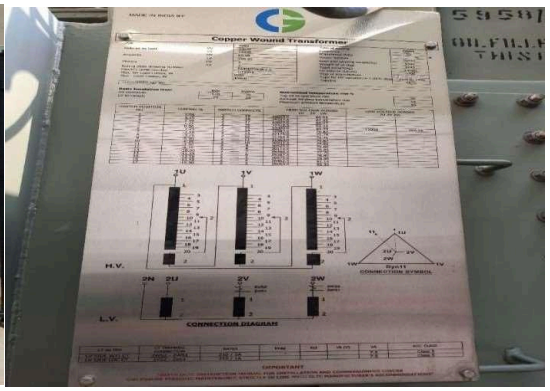
- **RMU Panel:**

A **Ring Main Unit (RMU)** is a totally sealed, gas-insulated compact switchgear unit. The primary switching devices can be either switch disconnectors or fused switch disconnectors or circuit breakers. At first, the 33kv line comes to the RMU (Ring main unit) panel room. In the RMU panel, two Incomers are there of 3 core and 300 sq mm each where Incomer-1 is from 79 Tilla and Incomer-2 is from Durjoynagar. One of the two Incomers works at a time and the other remains stand-by. There is one Main Meter and a check Meter present inside the RMU panel room. In the RMU panel, there is one Outgoing unit.

- **33KV HT Panel**:

Next from the Outgoing in the RMU panel, the line goes to the 33KV HT panel room. In the 33KV HT panel, there is one Incomer of 3 core and 240 sq mm, from here the line goes to the two Transformers (1 & 2).There were various Display units, Protection units, and Measuring units present in the panel. In the Incomer section of the panel, there was a Voltmeter and ammeter for measuring voltage and current and also a Multifunction Meter, various kinds of selector switches and for detecting fault and protection there was a Feeder protection relay, Master trip relay, and a VCB. For indications and alarm, there are panel indicator lights and an Annunciator. Similarly, in the Transformer section of the panel, in addition to the equipment in the Incomer, there was one TRIP circuit supervision relay and three TRAFO Fault relays.

- **4MVA Transformer:**



Now from the 33Kv panel, the line comes to the two transformers of 4 MVA rating each. The transformer steps down from 33kv to 11kv. The transformer tap can be changed remotely with the help of the Remote tap changer control panel. The transformer is Oil Natural Air Natural cooling type. For protection, it has Buchholz Relay. After stepping down from here the 11kv line goes to the 11Kv HT panel.

- **11KV HT Panel:**

The 11kV HT panel is located in the new power house substation. From the 4 MVA transformer there comes two incomers of 3 core 240 sq mm wires and is connected to 11 kV busbar. There are six feeders present in the 11KV HT panel. There are three transformer feeders of 1.6 MVA distribution transformer to step down 11kV to 440 V. Another feeder is provided to the old Airport building. And a direct 11 kV line is fed to the Hanger side without stepping it down. A feeder is provided that can be connected to the busbar for future expansion.

There are various equipment installed in the 11kV HT panel like, current transformers are provided for metering and operating the relays. A bus coupler is provided so that the entire HT panel can be operated through a single incomer in case the second incomer is not active. Various types of relays are also installed like oil temperature, winding temperature, etc. that checks the working of the

transformer and gives alarm and is connected to a master trip relay which trips the circuit in case of any fault. A Vacuum circuit breaker is installed for the protection of the entire HT panel. Other breakers are also installed like MCCB and MCB. A Multifunction Meter is provided that displays the various perimeters like voltage, current, etc.

- **1.6MVA Distribution Transformer:**

There are three distribution transformers present in which two are working and one is for standby. The distribution transformers are rated at 1.6 MVA and are used to step down the voltage from 11 kV to 440V. The transformer is an oil cooled type transformer and also has On Load Tap Changer (OCTC) that can be used to change the voltage during running conditions. The transformer is DY11 that means it is a delta star connected transformer with a neutral in the secondary side. There are many protection devices attached here also like Buchholz relay, winding temperature and oil temperature relay which senses any fault and send signal to the trip circuit present in the transformer.

- **APFC Panel and Capacitor Banks:**

Automatic Power Factor Control or APFC Panels are mainly used for the

improvement of Power Factor whenever required by switching ON and OFF the required capacitor bank units automatically. The reason for using APFC Panel is that in industry, most of the load is inductive in nature which results in lagging power factor and that is why there is loss and wastage of energy which results in high power bills and heavy penalties from electricity boards. If the load is uneven, it is very difficult to maintain unity power factor. To overcome this difficulty, an APFC panel is used which maintains unity P.F. APFC Panel has a microcontroller based programmable controller which switches the capacitor banks of suitable capacity automatically in multiple stages by directly reading the reactive load (RKVA) which works in the principle of VAR sensing and tends to keep up the PF to 0.99 Lag.

There are 4 capacitor panels in total, 2 capacitor panels of 170 kVAr and 2 capacitor panels of 340 kVAr. The 340 kVAr panel has an 800 A rated Air Circuit Breaker (ACB) and 170 KVAr has a 400 A rated ACB. The APFC panel is attached to the main lt panel and from there the power is supplied to different feeders. 340 KVAr panel is generally used high load like HVAC and 170 KVAr is used for low power

- **Main LT Panel:**

The distribution transform supplies the power to the main LT panel. From Transformer 3 there connects another incomer, INCOMER-3 which further supplies the power to fire fighting panel 1, main distribution panel 1, food court, AC panel etc. From Transformer 2 there connects a new INCOMER-2 which further supplies the power to firefighting feeder 2, MT pool, IRF, runway area, apron etc. From Transformer 3 there connects a new INCOMER-1 which further supplies the power to main distribution panel 2, AC panel, cargo fire, external lightning, MT pool etc. Bus coupler is a device which is used to couple one bus to another without any interruption in power supply without any interruption in power supply and without creating hazardous arcs.

The main LT panel also has incomer from the DG synchronisation panel using ATS rated 2500 A. And an ACB is there to protect the LT panel rated at 2500 A. There is also CT provided for metering purposes. All the incomers are connected to a busbar

of 3200 A Aluminium. Moulded case circuit breakers (MCCB) are also there of different ratings depending on the voltage such as 800 A, 1600 A, 2000 A, etc. There are also various spare feeders present for any future expansion. The main LT panel feeds the most important part of the airport HVAC which demands the highest amount of power and an aluminium bus duct rated 2000 amps. It also feeds the main distribution panels which further distributes the power to sub distributive panels, retails panels, etc. There are many protective relays present like overvoltage and undervoltage relays in case of any faults.

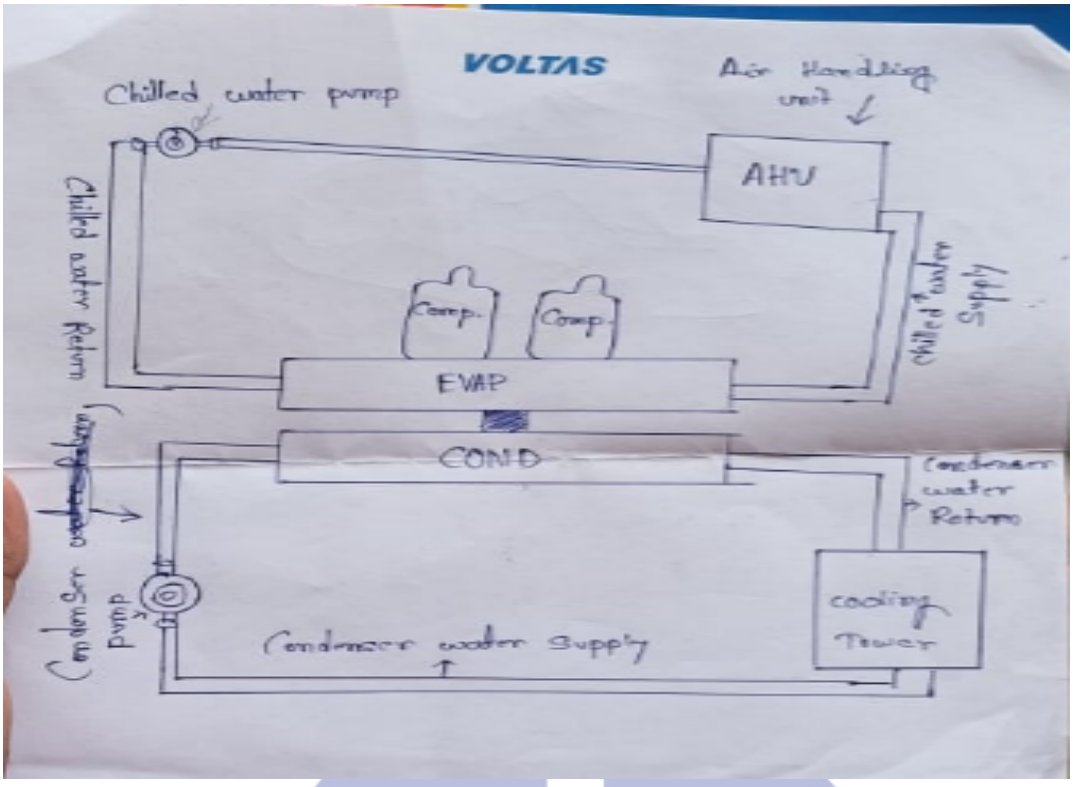
- **DG Set and Synchronizing Panel:**

DG SET Also known as diesel genset is the combination of a diesel engine with an electric generator to generate electrical energy.There are total 4 DG sets of 750 KVA present in the power house of Agartala airport.DG SYNCHRONIZING PANEL is basically use to control the functionality of a number of diesel generator sets. It can work in both auto mode as well as manual mode.The process of Diesel Generator synchronisation basically constitutes matching the undermentioned parameters of an alternator (Diesel Generator) with an existing healthy running power system. It is done before connecting DG to the healthy power system.

HVAC Plant

HVAC stands for heating, ventilation and air conditioning.HVAC System is the main backbone of the AC Flow System in the Terminal Building. It consists of mainly Chiller systems which contain a Compressor which is the main part and it has 8 pumps in which 6 pumps are functional and other 2 are stand-by or for backup purpose and other parts are Cooling Pump and Condenser Pump and also an Evaporator. It has a set of 4 units of AC which are 300 tons each. In the background of the HVAC system, a water chiller produces chilled water which is then circulated throughout the building or till cooling coils in air handling units. Blowers move air on cooling coils which is then distributed into various portions of space or building for providing comfort or preserving goods/items as per HVAC

design. Air is distributed through supply ducts and return air is collected in air handling units with the help of return ducts. Chilled water and cooling water pumps provide energy to keep the chilled and cooling water moving.



- **Chillers:**

Chillers are used to generate chilled or cold water which is pumped around the building to provide air conditioning by collecting unwanted heat.In Agartala airport Water Cooled chillers are used. Water cooled chillers are typically located in the basement or the lowest floor of the building. This type of chillers needs a cooling tower to reject the heat from the building. The chiller produces chilled

water and pushes this around the building to air handling unit (AHU) and fan cool units. This units circulate the air around the local space, as well as building. The air is then forced across the heat exchangers containing the chilled water, which extracts the unwanted heat before the air is distributed throughout the building. The unwanted heat that is extracted from the air collects in the chilled water loop, which is pumped back to the chiller where it will transfer over to the chiller's condenser via a refrigerant loop. The condenser absorbs this heat and then dumps this into the condenser water loop, and this runs between the chiller condenser and the cooling tower upon the roof. The cooling tower will force ambient air across the condenser water to extract the unwanted heat and reject the hat out of the building and into the atmosphere.

- **Compressors and Condenser Pumps:**

A compressor is a mechanical device that increases the pressure of a gas by reducing its volume. An air compressor is a specific type of gas compressor. Condenser is an electronic component used to store electric charge. It basically consists of two conductive plates and a dielectric (non- conductive) material between these plates. The main characteristic of this component is that it can store a certain amount of electric charge and then return that charge as energy.

- **Primary and Secondary Pumps**

Primary-secondary pumping is incorporated into cooling system designs for a variety of applications. The most frequent application of P- S pumping is used in chilled water systems where there is a need to have fairly constant flow through the chiller evaporator and variable flow through the distribution system.

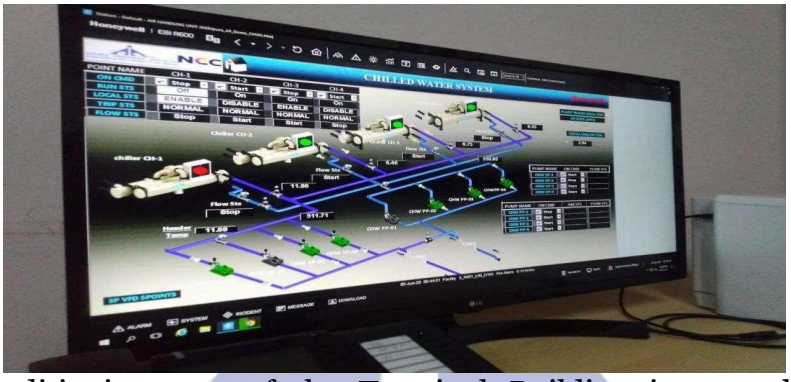
- **Cooling Tower:**

A cooling tower is a heat removal device that uses water to transfer waste heat into the atmosphere. A water-cooling tower is used to cool water and is a huge heat exchanger, expelling building heat into the atmosphere and returning colder water to the chiller. A water-cooling tower receives warm water from a chiller. This warm

water is known as condenser water because it gets heat in the condenser of the chiller. The chiller is typically at a lower level (in the basement). The cooling tower's role is to cool down the water, so it can return to the chiller to pick up more heat. Air conditioning equipment and airport activities can generate heat in the form of tons of hot water that needs to be cooled down. That's where an industrial cooling tower comes in. Overheated water flows through the cooling tower where it's recirculated and exposed to cool, dry air. Heat leaves the recirculating cooling tower water through evaporation. The colder water then re-enters the air conditioning equipment or process to cool that equipment down, and the cooling cycle repeats over and over again.

Terminal Building

- **Air Conditioning:**



The Air-Conditioning part of the Terminal Building is controlled by BMS System. The CP and IPC codes in the BMS Panel control the ON/OFF command. In the Airport 2 and 4 number CP codes are in Water Flowing condition.

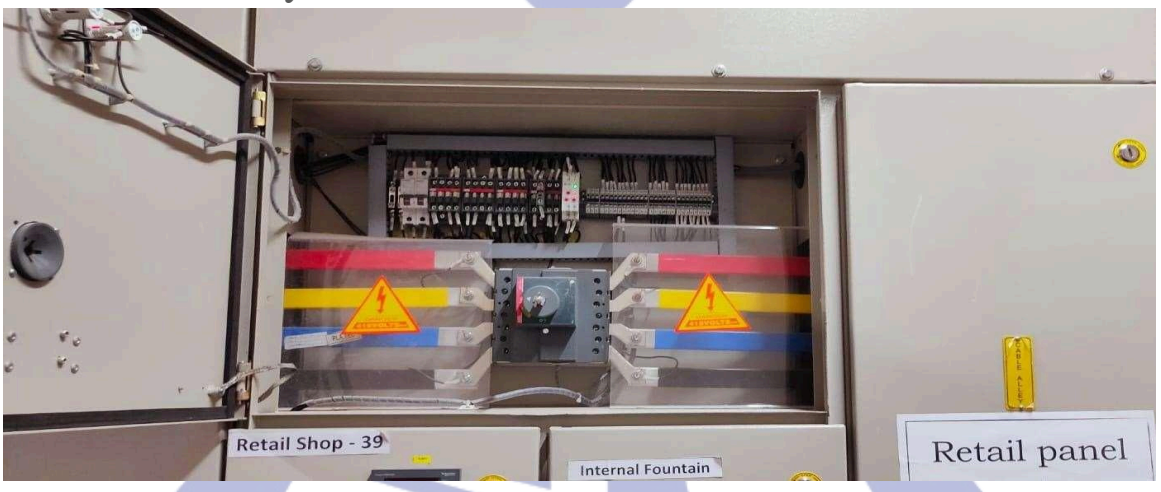
There are 18 AHUs in the basement (Numbering 1 to 18) and 8 AHUs in the Mazzini (at the Top) which are Numbered from 19 to 26. AHU has a blower fit into it which is Motor Operated.

- **Air Handling Unit(AHU):**

An air handling unit, commonly called an AHU, is the composition of elements mounted in large, accessible box-shaped units called modules, which house the appropriate ventilation requirements for purifying, air-conditioning or renewing

the indoor air in a building or premises.AHU has three major parts those are fan section, coil section and filter section. They are usually installed on the roof of building and, through ducts, the air is circulated to reach each of the rooms in the building in question.AHU on its operation is discharging air through supply air duct to the floor to be Air conditioned and drawing the same through return air space and duct. Before entering into the AHU, return air is filtered by the filter fitted in the filter section. After filtering. return air is passing through the cooling coil and while passing through the call heat exchange is taking place between return air and chilled water. During heat exchange the return air becomes cool and it sheds water to become dry. In this continuous process the humidity is controlled. After exchanging the heat, the hot chilled water will return to the chilling machine. Condensate water is collected in the drain pan at the bottom of the AHU and the same condensate water has been drained out from the drain water header.For operation of AHU starter panel has been provided to each individual AHU room. The AHU can be operated from the through remote control panel installed inside the plant room.

- **Electrical System:**



There are 2 MDBs (Main Distribution Board). It contains about 11 Run Cable which are specified to be 3 and 1/2 Core which is about 240 square mm and the Neutral phase is half of the other that is about 120 square mm.
Air Circuit Breaker is used at rating above 800A.Rating of ACB is from 800A to 1600A.Moulded Case Circuit Breakers are used for below 800A rating.

Water Treatment Plant

Direction of flow of water is Borewell e Raw Tanks e Raw Pump e Lamella Tank. The whole flow system is maintained to remove the Iron Salts from the water collected from nature. There are 3 Motors which have 2 sets each. There are also 2 types of filter.Multi grade filter(mercury based) is a depth filter that makes use of coarse and fine media mixed together in a fixed proportion.The activated carbon filter (ACF) works on the principle of adsorption. The medium adsorbs or reacts with pollutant molecules as the water is filtered through. ACFs are designed to remove free chlorine, organic matter, odour and colour present in raw water and wastewater. The filter consists of various grades of carbon granules supported by gravel, pebble and sand.In all the tank there is a TDS measurement connected which has a function to measure the amount of salt whether it is perfect in measure or not.

- **Chlorine Tank:**

When the upper float switch in the storage tank drops down, the well pump and the chlorine metering pump turn on and water starts to flow into the storage tank. As the water flows past the injection point of the chlorinator, a small amount of chlorine is injected into the water automatically.

- **Domestic Tank:**

This tank consists of mainly 3 (Three) parts:RO Tank which is used for purifying water for consumption purpose.Softener Tank which contains the soft water after all or maximum hard substances or salts are removed.MGF Tank which helps to purify water at Stage 1.

- **Soft Tank:**

This tank consists of mainly 3 parts:MGF Tank which is used to purify water at Stage 1 using some technique of sedimentation.Softener Tank which contains the purified water free from Hardness or Salt contents.

- **Brine Tank:**

This tank is used to maintain the Salt content or the amount of Salt in the water. The brine tank of your water softener is simply a container that your water softener

adds water to in order to dissolve a set amount of salt that is kept in the tank so the water softener can use the salt water (brine) to regenerate (clean) the water softener resin inside of the water softener tank so that the resin can remove more hardness from your water.

Fire Fighting

A firefighting system is an activity of prevention during a fire spread in a building, home or warehouse with the use of proper fire safety equipment like extinguisher, hose reels, fire monitors, nozzles and hose pipes.In Agartala Airport, there are 2 tanks which store water for firefighting purpose. From there it goes to the basement. There is a gate bulb which stops the water flow if it flows rapidly. The water goes to every pipeline but the knob of the pipeline opens only when it is required. There is a hydrant pump which is used as a main pump to supply water at the time of emergency. If the pressure of water goes below a certain level i.e., 7.5 kg, then the jockey pump starts working. The jockey pump is mainly used to cover up the leakage and acts as an auxiliary pump. For the sprinkler, there are also 2 pumps-one is the main pump and another one is jockey pump.A jockey pump is a small pump connected to a fire sprinkler system to maintain pressure in the sprinkler pipes. This is to ensure that if a fire-sprinkler is activated, there will be a pressure drop, which will be sensed by the fire pumps automatic controller, which will cause the fire pump to start.A fire hydrant or firecock is a connection point by which firefighters can tap into a water supply. It is a component of active fire protectionButterfly valves for fire protection serve as control valves that turn on or shut off the flow of water to the pipes serving fire sprinkler or standpipe systems.There is a DG (Diesel Generator) which is used as backup.
Inside the new terminal building of the airport, there are 2 systems present: Conventional System (For comparatively small areas) and Addressable System (For large areas).

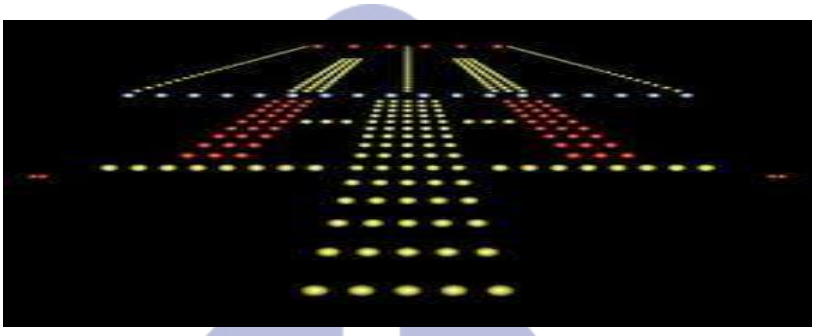
Operational Area

The most important part of the Airport Operational Area are PAPI (Precision Approach Path Indicator) lights. In Runway while landing the flight lands at an angle of about 3 degrees. While landing the back tyres of the flight touches the

ground first and front thereafter and vice-versa occurs while take off.PAPI Lights also correspond to a Communication System for the other flying Flights which is known as the Glider Path.The Run-way designation of Agartala airport is 18-36.

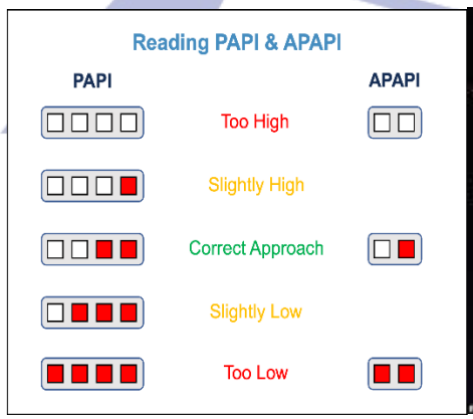
- **Types of lights:**
- **Approach Light:**

  - This is the First Light which is seen by the Pilot while landing.
  - It is a series of T-Shaped lights.
  - It is used to detect the runway for landing.
  - Used mostly in Night operations.



- **PAPI Light (Precision Approach Path Indicator):**

The PAPI system is the current standard Visual Glide Slope Indicator (VGSI) consisting of four light boxes arranged perpendicular to the edge of the runway. It projects a pattern of red and white lights that provide visual approach slope information. It should be in the range of 300m. They are 4 (Four) in total.

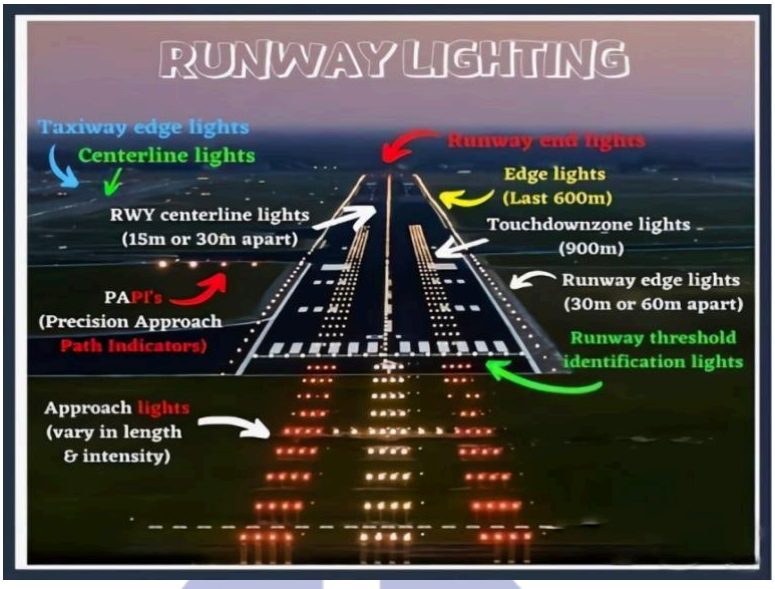


- **Inset Light:**

These are the lights which are present in the centre of the Run-way so as to indicate the endpoint of the Run-way. They are flush lights i.e. the flight can land on them as well.

- **Run-Way Edge Light:**

The lights marking the ends of the runway emit red light towards the runway to indicate the end of runway to a departing aircraft and emit green outward from the runway end to indicate the threshold to landing aircraft.



Airport Runways usually have Landing T i.e. series of Lights at the sides of Run- way so as to get the ends of a Run-Way. The flights have a Wind-Cone attached to it which shows the direction of flow of wind while landing. It also has DVHF (Doppler Very High Frequency Omnidirectional station) which detects the position of another flight above that airport which is always in ON-state. The length of the Run-Way is 2286m.

- **Other Features:**
- **Apron:**

The airport apron, flight line, or ramp is the area of an airport where aircraft are parked, unloaded or loaded, re-fueled, boarded, or maintained.

- **Taxiway:**

Taxiway is a path for aircraft at an airport connecting runways with aprons, hangars, terminals and other facilities. They mostly have a hard surface such as asphalt or concrete, although smaller general aviation airports sometimes use gravel or grass.There are currently 4 taxis alpha, bravo, delta, echo.

- **Isolation Bay:**

An isolated aircraft parking position shall be designated or the aerodrome control tower shall be advised of an area or areas suitable for the parking of an aircraft which is known or believed to be the subject of unlawful interference, or which for other reasons needs isolation from normal aerodrome activities.

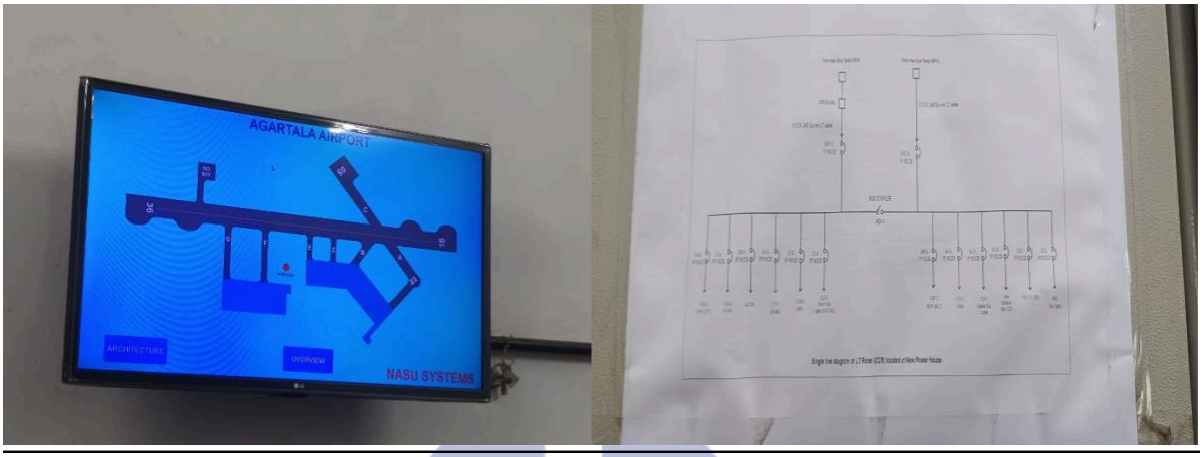
- **Hanger:**

Airport hangars are large buildings that are used to store and maintain aircraft and other related equipment. They are typically constructed of metal and often feature large doors that can be opened to allow aircraft to enter and exit.

- **Power System:**

There are a total of 17 Lights in the Run-Way and there are 2 Circuits. There is also a spare PAPI which is a stand by one. There are 2 UPS supplies with a power of 120 KVA each. They give a backup while NO Electricity condition. There are also PAPI Selectors with switches at 18 and 36 being in series pairwise.

New – Power House e ***HT Panel*** e ***Transformer*** e ***LT Panel***

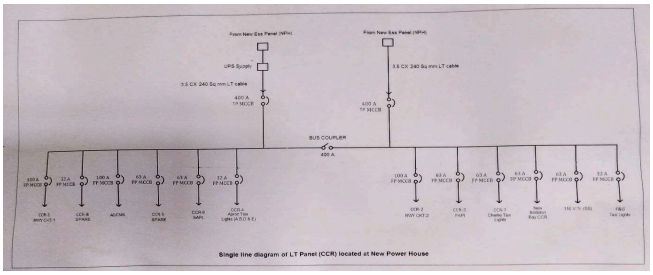


There are 3 Transformers and DG (Diesel Generators) with capacities of one being 750 KW and other two being 380 KW each.

- **UPS:**

UPS Systems for Airports are uninterruptible power supply systems designed specifically for use in airports. These systems provide backup power to critical equipment and facilities such as air traffic control systems, security systems, communication networks, baggage handling systems, lighting systems, and more.

- **Constant Current Regulation Panel:**



Constant current regulation panel is the main backbone for supplying power to the Ground Lightning facilities which is mainly installed on the runway of the airport.Constant Current Regulators (CCRs) are designed to supply precision output current levels for series lighting circuits on airport runways and taxiways.In CCR hall there is an incomer panel connected with the essential supply panel (LV panel) from power house. From the incomer panel Constant Current Regulator panels are getting 415 volts power supply. CCR panels for the runway use 2 phase power supply and other CCR's use 1 phase. In the CCR hall there are 2 CCR panels for two circuits of lights installed in the runway, CCR 1-RWY-1 & CCR-2 RWY-2.Another CCR is kept on standby. The load in the CCR is controlled from the ATC tower according to the intensity of light required for landing of the flight.In CCR we can monitor the output current corresponding to Selected Intensity

ATC Services

Air Traffic Control is a service provided by ground-based air traffic controllers who direct aircraft on the ground and through a given section of controlled airspace, and can provide advisory services to aircraft in non- controlled airspace. The primary purpose of ATC worldwide is to prevent collisions, organise and expedite the flow of

air traffic, and provide information and other support for pilots. In some countries, ATC plays a security or defensive role, or is operated by the military. Air traffic controllers monitor the location of aircraft in their assigned airspace by radar and communicate with the pilots by radio. To prevent collisions, ATC enforces traffic separation rules, which ensure each aircraft maintains a minimum amount of empty space around it at all times. In many countries, ATC provides services to all private, military, and commercial aircraft operating within its airspace. Depending on the type of flight and the class of airspace, ATC may issue instructions that pilots are required to obey, or advisories that pilots may, at their discretion, disregard. The pilot in command is the final authority for the safe operation of the aircraft and may, in an emergency, deviate from ATC instructions to the extent required to maintain safe operation of their aircraft. All Flights Fly by obeying Bernoulli's Principle.
A **very high frequency broadcasting system** is being established at Agartala Airport for the continuous distribution of vital information such as updated airside, meteorological and navigational service information etc. to pilot. In case of bad weather or any other obstacles if the aircraft is unable to land to the defined destination, ATC makes sure to inform and guide to the pilot the safest destination for landing in accordance with the amount of fuel present in the aircraft. In addition to the above procedures to ensure safe air traffic separation, call signs are used by ATC which are permanently allocated by ICAO on request usually to scheduled flights. In general, the minimum visibility of MBB Airport is 800m and the area control is beyond 20k ft. The frequency range is 30-300 MHz.

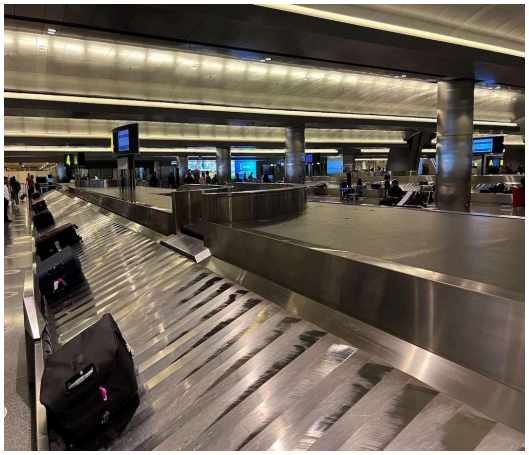
- **Instrument Landing System:**

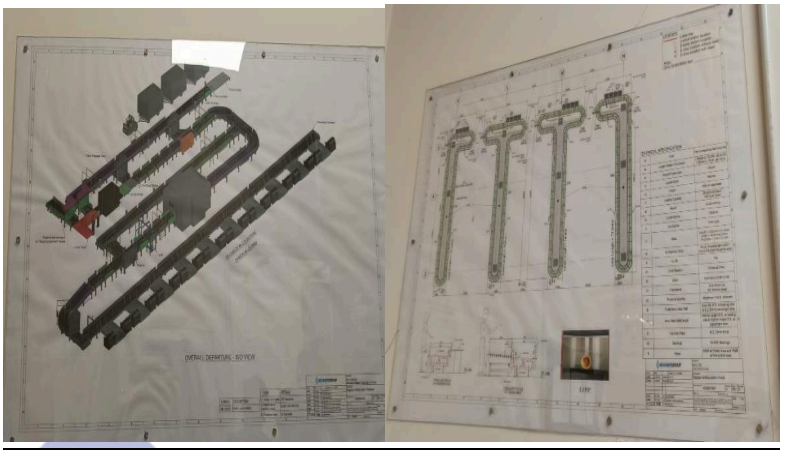
In aviation, the instrument landing system (ILS) is a precision radio navigation system that provides short-range guidance to aircraft to allow them to approach a runway at night or in bad weather. In its original form, it allows an aircraft to approach until it is 200 feet (61 m) over the ground, within a ½ mile (800 m) of the runway. At that point the runway should be visible to the pilot; if it is not, they perform a missed approach.

- **Critical Aircraft:**

The critical aircraft is the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport. Regular use is 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. An operation is either a take-off or landing. Airbus A321 is the critical aircraft of MBB airport.

Baggage Handling System





Baggage handling is the process of transporting passenger luggage from a check-in counter at a departure airport, onto a plane cargo hold and then to a collection point at an arrival airport. A baggage handling system is made up of a number of different processes and checks. BHS is designed to count bags, check weights of bags, balance loads, screen suitcases for security reasons, transport bags through an airport conveyor belt system and read bag information automatically. A baggage handling system is a type of conveyor system installed in airports that transports checked luggage from ticket counters to areas where the bags can be loaded onto aeroplanes.

- **Functions**

1) Detection of bag jams.
2) Volume regulation (to ensure that input points are controlled to avoid an overload in the system).
3) Load balancing (to evenly distribute bag volume between conveyor sub- systems).
4) Bag counting.
5) Bag tracking.
6) Redirection of bags via pusher or diverter.

Its main job is to move bags from the check-in area to the departure gate.Move bags from one gate to another during transfers.Move bags from the arrival gate to the baggage-claim area. There are 3 Main Conveyor belts connected to each other. There are 20 counters in total. There are 2 types of Conveyor which are Weighing Conveyor and Dispatch Conveyor.

- **FORMS**

- Destination-coded vehicles (DCVs), unmanned carts propelled by linear

induction motors mounted to the tracks, can load and unload bags without stopping.

- Automatic scanners scan the labels on the luggage.

- Conveyors equipped with junctions and sorting machines automatically route the bags to the gate.

- A reliable, trouble-free way to realise a reduction of up to 30% in labour costs.

Conclusion

I have undergone One Month of On-Site Training in Maharaja Bir Bikram Airport Agartala where I have learnt about the basics of the Power System in the Airport, HVAC System and BHS System both theoretically as well as practically. I have learnt about the working of various types of Fire Fighting System and also learnt about the Air-Conditioning and Electrical System in Terminal Building. Above all we come to know about the runway, runway lights, how the flight lands, how the flights get directed by ATC tower.

This training provided me with the much-needed Industrial exposure which will be definitely helpful in my future.