

Course Content for “New Development in General Services” Course (NDGS).

Electrical System:

- Energy Metering (Latest Technology).
- Importance of Grounding (Earthing) in Electrical System.
- IE Rules & Acts 1910,1948 1956,1998,2003,Energy Conservation ACT-2001 Amendment 2005.
- Open access and net metering Policy and its relevance in IR.
- Compressor & compressed Air System

Electrical Motors:

- Electrical Motors :- Induction Motor& Variable Speed Drive/VFD.

Pumps & Pumping system:

- Energy efficient pumps and water supply system.

Lifts, Escalator & Travellator:

- Designing, installation, operation & safety features of Lifts, Escalator & Travellator.

Lighting System:-

- Energy Efficient Lighting at Railway Station.
- Design, Selection of Luminaire & installation of Lighting System
 - a. For service building
 - b. For Platform
 - c. Street lights & High Mast Lights
- LED Lighting

Energy Efficiency & Energy Conservation:-

- Basics of Energy & various forms.
- Energy Efficiency & Energy Conservation.
- Energy Conservation in Building code (ECBC).
- Scada in General Service.
- Energy Conservation in General Service equipment.
- Energy Efficient HVAC System.

New & Renewable Energy Sources:-

Solar System:-

- Use of Renewable Energy in Indian Railway.
- Design & Installation of Solar Plant, connection to Grid & its parameter for Solar System.
- Solar thermal power station.
- Solar Photovoltaic Systems & its design-
 - for Roof top.
 - for Level Crossing Gate.
 - for land based.
- Solar hot air Generation.
- Solar Pump .
- Solar cell,solar modules, solar Panel & manufacturing process,solar equipment/ gadgets.
- Solar Air Conditioner.
- Solar Post Light.
- Solar Pipes.
- Solar water heaters.

Wind System:-

- Basics of Wind Energy.
- Design of grid connected Solar cum Wind Hybrid System.
- Design , Installation of Wind Energy Plant and connection to Grid.

Likely places for Technical Visits (at least Two):

- Technical visit to Seal Tech Light Testing Lab at Nasik Road.
- Technical visit to City Centre Mall, Nasik for M/s Otis Lift & Escalators.

- Technical visit to M/s Johnson Lift & Escalators at Nasik .
- Technical visit to Suzlon Wind turbine Plant at Sinner.
- Technical visit to Solar heating/Cooking Plant at Shirdi.
- Technical visit to Deshmukh Solar Panel Factory ,Adgaon ,Nasik
- Technical visit to Biogas Plant Trambakeshwar,Nasik.
- Technical visit to KSB Pump, Sinner.
- Technical visit to Rishabh meter manufacturing Industries, Nasik