

Analysis of Solar Based Thermal Power Plant

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Abstract- The analysis of solar based thermal power plant is to analyse renewable energy for getting electrical energy. Energy is available in two different alternatives, nonrenewable (coal, petroleum, natural gas) and renewable (solar, wind, small hydro) sources. In recent years solar energy has received great deal of attention as an easily utilizable source of renewable energy for providing electricity. Renewable energy sources like solar is indigenous and can help in reducing the dependency on fossil fuels. Solar energy provides a variable and environmental friendly option and national energy security at a time when decreasing global reserves of fossil fuels threatens the long-term sustainability of global economy. The solar energy can be utilized in two ways one is solar photovoltaic and other is solar thermal. Due to this analysis the generation of electricity through solar photovoltaic energy.

INTRODUCTION

The first thermal power plant is established in since 1920, this power plant works on non-renewable source such as coal, fossil fuels and radioactive elements for the generation of electricity in this power plant. The drawbacks of nonrenewable plant in that the pollution is more, in future the nonrenewable source cannot be available for the generation of power, that's why we are focusing towards the renewable sources, for the generation of electrical energy. We are deciding to use renewable sources for minimizing the pollution and drawback as compared to the nonrenewable power plant.

Thus, we are analyse that the nonrenewable power plant has great deal to the generation of electricity with huge amount. But one day the nonrenewable source is not available for the generation of electricity, so we decide to overcome this problem in future by analysing the solar based thermal power plant. This power plant is totally work as steam power plant but the source is the renewable energy.

Because we are focusing toward the renewable energy for the better environment and the good life.

EXPLANATION

Our Topic is based on solar based thermal power plant. In this Topic we are producing electricity by using renewable source (solar energy). This energy generally classified into two types such as photovoltaic and solar thermal energy. In our Topic we can utilized photovoltaic method by the generation of electricity.

Converting solar energy into electrical energy by PV installations is the most recognized way to use solar energy. Solar photovoltaic modules, which are a result of combination of photovoltaic cells to increase their power, are highly reliable, durable and low noise devices to produce electricity. The fuel for the photovoltaic cell is free. The sun is the only resource that is required for the operation of PV systems, and its energy is almost inexhaustible.

The photovoltaic energy is converted into DC power and then it is stored in battery. There are various types of batteries; we are using the lead acid battery for the storage of DC power. This DC power is provided to the inverter for the conversion of DC power to AC power for the generation of heat energy. This heat energy is utilized to convert water into steam, after getting this steam. The further process is similar as steam power plant for the generation of electricity.

The analysis of these solar based power plants is just to avoiding nonrenewable sources, also for non-availability of nonrenewable source in future and making pollution zero.

ADVANTAGES

1. No cost of fuels.
2. It should be not polluted.
3. No global warming effects.
4. Life of plant is more.
5. Better for human lives/other living things and environment.
6. Transportation facility not required as compare to nonrenewable fuels, i.e. the cost of transportation is very less.
7. It is totally based on natural energy.

DISADVANTAGES

1. The cost of installation is more.
2. More space is required.
3. Fuel is available only daytime.
4. Efficiency of plant is less as compared to non-renewable plants.

CONCLUSION

OUR TOPIC IS “SOLAR BASED THERMAL POWER PLANT”. In this topic we are conclude that power is generated by using solar energy. We are using solar energy which is freely available, scene this plant generally work in an operating time is day timing.

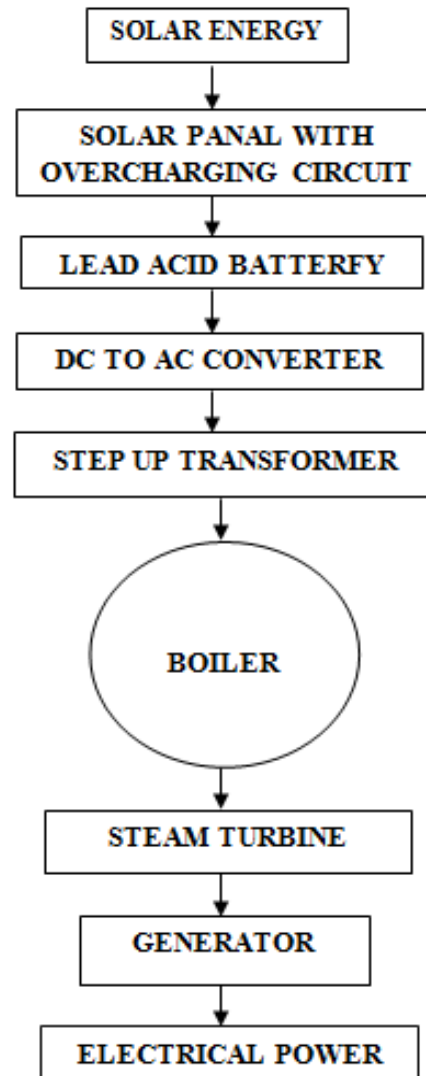
FUTURE SCOPE

In future we mostly depend on renewable source due limitation of nonrenewable sources. Solar is main and vital source of energy. Through which can capture maximum energy. There is huge area should be required. One time initial investment required and power available throughout the year in sunny days.

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DIAGRAM



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