THE ELECTRIC TIMES

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TECHNICAL

Do you know about Energy Efficient Motors?

Energy Efficient Motors:

In the recent few years, we have been experiencing a major power crisis and the gap between power demand and availability is also increasing with every passing day. The best way to handle this situation is to make use of available energy in a more efficient way and this is where energy efficient motors come into picture, contributing significantly to the nation's economy.

What are Energy Efficient Motors?

Energy efficient motors, also known as high efficiency motors or premium motors are 2-8% more efficient than standard motors. In simple words, these motors produce the same output strength by lesser amounts of power consumption.
Motors can be certified as energy efficient if they meet or surpass the levels of efficiency as specified in MGI 1993 specification of National Electric Manufacturers Association (NEMA).

Principle Of Working:

The basic principle of working of an energy efficient motor is the same as that of a typical motor. It makes use of magnetic field that is induced by current passing through the wire loops over the central ferromagnetic axis. The orientation of the loops will be such that a torque is applied on the axis by the magnetic field, thereby rotating it.

The basic principle being the same, there are some enhancements in the design of energy efficient motors include a lengthened core, usage of low electrical loss to increase performance; the key enhancements steel, more copper in windings, and thinner stator laminations to bring down electrical losses. A smaller more aerodynamic cooling fan and enhanced bearings will further increase the efficiency

Advantages Associated with these Motors:

Energy efficient motors are highly beneficial in many ways, including the following:

- Saves energy and money
- Less vibration and lower heat output
- Longer bearing lives and insulation
- More tolerant to phase imbalance and Overload conditions
- Less maintenance
- Longer life due to lower functioning temperatures major Though these motors save money due to less energy and consumption, the initial cost is high when compared to the e best standard motors by around 15-20%.

Applications:

Normally, motors are used in almost all sectors of economy, be it residential, industrial, commercial, or agricultural sectors. Energy consumption of these motors is a significant environmental and economic issue, especially when used on a large scale such as in industries and commercial purposes. Hence, these premium motors find high usage in power intensive industries and in equipments that operate on constant load for several hours.

On the whole, we can summarize that energy efficient motors bring in a world of benefits. A substantial increase in productivity at a price that is substantially lesser results in increased profits. The energy thus saved is a great contribution to the energy conservation program of the nation, benefiting the environmental globally. And, just as every coin has a flip side, they can't be used for normal applications, and their usage is

ELECTRICAL FACT

Ever wondered why birds that sit on power lines don't get electrocuted? If a bird sits on only one power line it's safe. If the bird touches any part of its body to another line, it creates a circuit, causing electrocution.

TEST YOURSELF

PROGRAM FOR THE MONTH

Write a python program to print the given pattern

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QUESTION FOR THE MONTH

How do we implement Smart City Solutions across smart cities to solve problems in areas such as Traffic Management, Safety, and Surveillance, Energy conservation, Lighting? what are the best methods to improve the stability and sustainability of city

R.bhavani prasad , EEE department

GENERAL KNOWLEGDE QUESTION

1. Who is popularly known as the "Iron Man" of India?
2. On which day of the week did India get independence?
3. Which is the largest hydropower station in the world ?

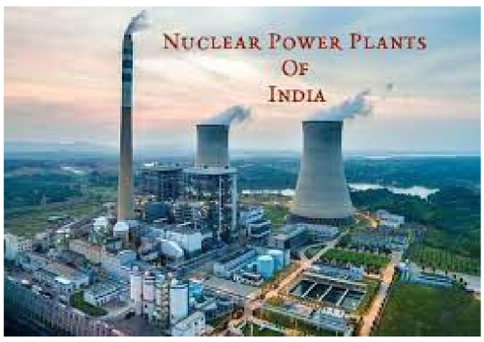
P.Rakesh , EEE department

AU ROUNDUP

1. To avoid the use of plastic, the pioneer of the Visakhapatnam Andhra University took the program to be implemented in the presence of honorable Judge Justice Uday Umesh Lalit goose.
2. As a part of the AAJAD KA AMRITHOTSAV program, the Finance Minister of India Smt. Nirmala Sitaraman Garu attended a virtual meeting held at Y.V.S.Murthy Auditorium and discussed the benefits of Mutual Funds.
3. AU vice chancellor Prof P.V.G.D. Prasad Reddy Garu is appreciated by well-known dignitaries for applying for six patents in Intellectual property India.
4. Former Head of the Department of Electrical Engineering, prof. G.V Siva Krishna Rao Garu has successfully reached 200 online webinars
5. The new digital library computer lab is started in the Mathematics department of the science college and inaugurated by Students in presence of the Vice Chancellor of Andhra University.
6. "British Deputy High Commissioner" and "Australia Minister for local government David Templeman" visited Andhra University as foreign deputies in the course of the month.
7. On the occasion of the Vahanmitra Program, Hon'ble Chief Minister of Andhra Pradesh Shri.Y.S.Jagan Mohan Reddy Garu inaugurated the program conducted on AU grounds.
8. Andhra University has conducted the AUEET exam for admission into the Integrated Dual Degree Course
9. Andhra University recently conducted a women's cricket tournament (2021-22) in which many South Indian Universities had their part.

NUCLEAR POWER IN INDIA

Nuclear power plants in india



LIST OF NUCLEAR POWER PLANTS IN INDIA 2022:

Name of the nuclear power station	Location	Operator	Capacity
Kakrapar Atomic Power Station-1993	Gujarat	NPCIL	440
Madras Atomic Power Station -1984	Tamil nadu	NPCIL	440
Narora Atomic Power Station -1991	Uttar Pradesh	NPCIL	440
Kaiga Nuclear Power Plant -2000	Karnataka	NPCIL	880
RajasthanAtomic Power Station -1973	Rajasthan	NPCIL	1180
Tarapur Atomic Power Station -1969	Maharastra	NPCIL	1400
Kudankulam Nuclear Power Plant -2013	Tamil Nadu	NPCIL	2000

The nuclear energy programme in India was launched around the time of independence under the leadership of Homi J. Bhabha.

This article will provide you with a list of Operational Nuclear Power Plants in India in 2022, along with Under Construction Nuclear Power Plants in India, and Planned Nuclear Power Plants in India.

Nuclear Power Plants in India - Under Construction

Name of the Nuclear Power Station	Location	Operator	Capacity
Madras (Kalpakkam)	Tamil nadu	Bhavini	500
Rajsathan Unit 7 and 8	Rajsathan	NPCIL	1400
Kakrapar Unit 3 and 4	Gujarat	NPCIL	1400
Kudankulam Unit 3 and 4	Tamil nadu	NPCIL	2000

Nuclear Power Plants in India -Planned(Future Projects)

Name Of the Nuclear Power Station	Location	Capacity
Tarapur	Maharastra	300
Madras	Tamil Nadu	1200
Kaiga	Karnataka	1400
Chutka	Madhya Pradesh	1400
Gorakhpur	Haryana	2800
Bhimpur	Madhya Pradesh	2800
Mahi Banswara	Rajasthan	2800
Haripur	west Bengal	4000
Mithi Vidri	Gujarat	6000
Kovvada	Andhra Pradesh	6600
Jaitapur	Maharsatra	9900

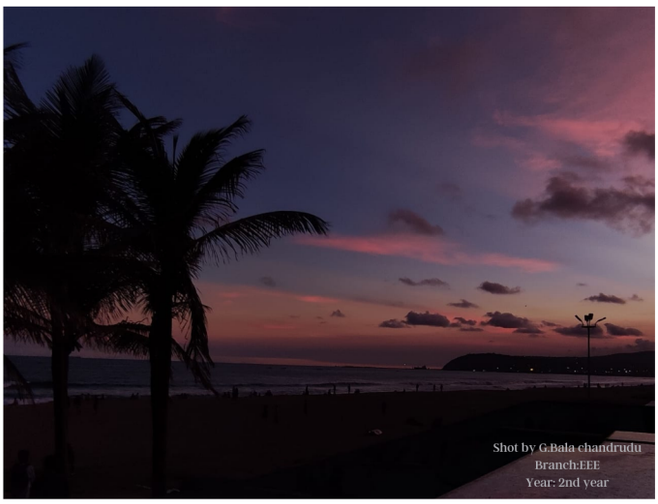
Tarapur Atomic Power Plant-1
(TAPS-1) is the first Nuclear Power Station In India.
Nuclear Power Plants in India - Operation

- Nuclear power is the fifth -largest source of electricity in India after thermal, hydroelectric and renewable sources of electricity.
- Presently, India has 22 nuclear power reactors operating in 7 states, with an installed capacity of 6780 MegaWatt electric (MWe)
- 18 reactors are Pressurised Heavy Water Reactors (PHWRs) and 4 are Light Water Reactors(LWRs).
- Nuclear Power Corporation of India Limited -NPCIL based in Mumbai is a government-owned
- corporation of India that is responsible for the generation of electricity through nuclear power.
- NPCIL is administered by the Department of Atomic Energy, Government of india. India will triple its present installed nuclear power generation capacity in the next 10 years, the government told Parliament March 16, 2022."The present installed nuclear power capacity of 6780 MW will increase to 22480 MW by 2031 on progressive completion of projects under construction and accorded sanction," Jitendra Singh, minister of state (Independent Charge) for the Union Ministry of Earth Sciences (MoES), told the Lok Sabha. He also termed nuclear power as a "clean and environmental-friendly source of base load power that is available 24x7". He added that it can provide long-term energy security to India in a sustainable manner.

BODDEPALLI HEMANTH KUMAR
Branch: EEE AUCE(A)
Year:4th year

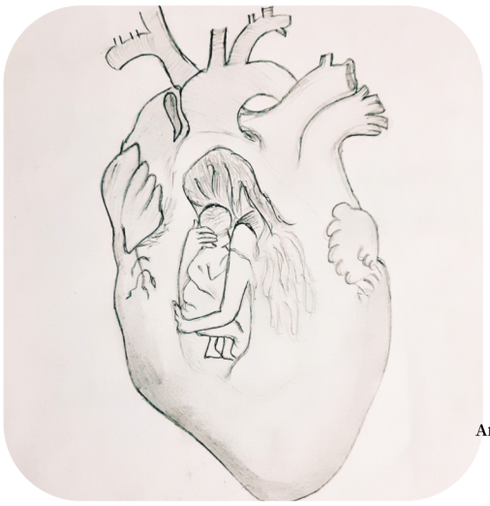
ARTS & STORIES

PHOTOGRAPHY



Shot by G.Bala chandrudu
Branch:EEE
Year: 2nd year

ART WORK



Artist:L Lakshmi Sagar
Branch: EEE
Year: 2nd year

STORY

Once upon a time, there was a farmer in the central region of China. He didn't have a lot of money and, instead of a tractor, he used an old horse to plow his field.

One afternoon, while working in the field, the horse dropped dead. Everyone in the village said, "Oh, what a horrible thing to happen."

The farmer said simply. "We'll see."
He was so at peace and so calm, that everyone in the village got together and admiring his attitude, gave him a new horse as a gift
Everyone's reaction now was, "What a lucky man." And the farmer said, "We'll see."
A couple days later, the new horse jumped a fence and ran away. Everyone in the village shook their heads and said. "What a poor fellow !"The farmer smiled and said, "We'll see.
Eventually, the horse found his way home, and everyone again said, "What a fortunate man.
The farmer said, "We'll see."
Later in the year, the farmer's young boy went out riding on the horse and fell and broke his leg. Everyone in the village said, "What a shame for the poor boy."
The farmer said, "We'll see."
Two days later, the army came into the village to draft new recruits. When they saw that the farmer's son had a broken leg. they decided not to recruit him.
Everyone said, "What a fortunate young man.
The farmer smiled again - and said "We'll see."
There's no use in overreacting to the events and circumstances of our everyday lives. Many times what looks like a setback, may actually be a gift in disguise. And when our hearts are in the right place, all events and circumstances are gifts that we can learn valuable lessons from.

Moral:

"Everything we call a trial, a sorrow, or a duty, believe me... the gift is there and the wonder of an overshadowing presence."

Writer: K. Bhavya
Brach:EEE
YEAR: 2nd year

ERUDITION:

Learn "how to be lovable and caring" from your mother,
Learn "how to lead a family" from your father,
Learn "how to overcome the situation" from your elders,
Learn "how to be joyful all the time" from the little one's,
Learn "how to guide others" from your teachers,
Learn "something new" from someone new.

M.Sowmika
Branch: EEE AUCE(W)
Year:4th year

Any contributions/ feedback can be sent to the_electric_times@andhrauniversity.edu.in