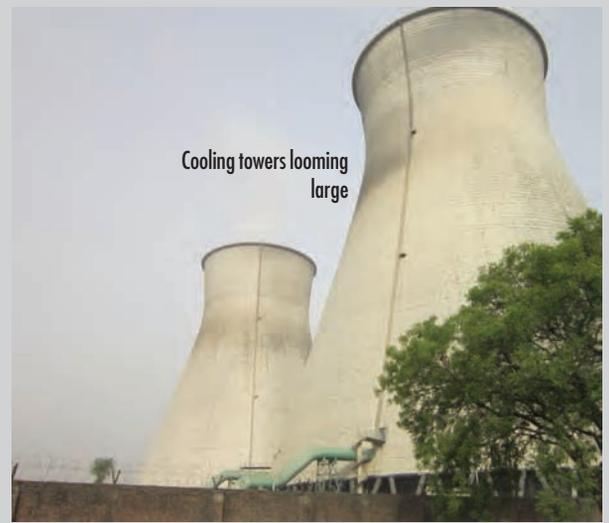


Nuclear Truth at Narora

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THE all-too-common perception of a nuclear power plant as a radiation-spewing demon needs to change. A country such as ours needs power to develop and prosper. With fossil fuel resources depleting fast and coal-fired plants becoming environmental hazards, we need to look at a bouquet of power generating options. It would be ideal to use a combination of all kinds of power sources, like the hydroelectric, solar, wind, biomass, geothermal and even nuclear to meet our future power needs.

Nuclear energy is one of the most cost effective and clean energy sources. But the common query posed is: What about the radiation and the impact of such power houses on the water bodies nearby and the population? Due to security reasons nuclear power houses are not easily accessible to the common man and hence answers to such questions are difficult to come by.

Therefore, recently a group was taken on a study trip to the Narora Atomic Power Station (NAPS) to look at the surroundings around the nuclear power plant and also get an idea of the various arrangements there. This was a part of the steps being taken by the country's nuclear establishment to reach out to the masses and dispel their fears about nuclear power. As a member of the group, here is an account of what I learnt from this trip.

Cautley's Canal

Colonel Proby Cautley, a British engineer and paleontologist of the East India Company, proposed digging a 350 mile canal from Bhimgoda in Haridwar to Kanpur, to meet the challenge of drought. His dream came true in 1840 and the actual construction began in 1843. Fear of the unknown always haunts the human mind and it is reported that saints at Haridwar vehemently protested this move. Somehow the British carried on with the excavation and the canal today caters to a vast territory of western and southwestern Uttar Pradesh, enriching it with cash crops.

What Cautley could not imagine was that in the future a nuclear power plant would come up on the banks of one of the tributaries of his canal in Bulandshahar district at Narora!

The rumors that hot water from Kudankulam nuclear power plant would wipe out the marine aquatic fauna, thereby affecting the very existence of the fisher folk in the area became the motive force that drove me out of the cool comforts of my home to the forests around the 1.6 km radius of the NAPS in the scorching summer heat.

As we entered the forest a troupe of monkeys appeared on the boundary wall, sitting in a row, as if giving us a welcome! And lo, there was a blue-bull, barely about ten feet away, trying to peep in to the vehicle. On the left a peacock male was dancing.

Peacock dancing in the NAP forest



Patience pays



The Nuclear Reactor is 'watched' round the clock from the control room, manned by a group of experts. It is a common belief in our country that engineers take things casually and are always caught napping in case of a mishap.

An apprehensive deer



Being a geologist by training and profession, I have had the privilege of traversing through some of the richest and densest forests of the country. Except for an occasional blue-bull or barking deer and of course peacocks no other fauna has been visible to me during those traverses at any hour of the day or even at night.

At Narora, the scene was unexpectedly different. No sooner had we entered the gate of the forest a troupe of monkeys appeared on the boundary wall, sitting in a row, as if giving us a welcome! And lo, there was a blue-bull, barely about ten feet away, trying to peep in to the vehicle. On the left suddenly a peacock's call drew our attention – a male was dancing, trying to entice three (presumably) females. The feathers shone brightly against the morning rays of the Sun.

As we drove ahead, all kinds of animals were playing hide and seek and almost unperturbed by the moving vehicle. There were a large variety of birds; I could identify Partridges, Pea fowl, amongst them. A wild Boar, a few Rabbits and a herd of Deer scurried past. The pugmarks on the sand were clear indication of the presence of a large population of fauna in the forest en-route the bridge on the Canal, a branch of the Ganga canal of Cautley. Incidentally, the canal serves as a source of coolant water for the nuclear reactor.

It was illuminating information that the coolant water is recirculated within the plant and not a drop is allowed to go out. This applies to all the nuclear plants of the country, including Kudankulam. Rising like ghosts above the tall foliage, the white smoke belching, giant twin chimneys of the plant we learnt were actually the cooling towers, where hot water from the plant is sent to drop as a spray into a giant tank underneath. The superheated water thus cooled, is again sent back to the plant. The white smoke, which looked scary, was actually water vapour that escapes to the top of the cooling tower and is released in to the atmosphere. There were all kinds of birds hovering over it. Had it been radioactive smoke some of the birds at least should have dropped down!

And there were two parallel pipes carrying water from the power plant campus to the canal. This water was not the coolant water, but from the premises, where hundreds of people work at a time. Naturally a lot of water is used. Wastewater is treated before it is pumped back to the canal. At the point of confluence of this water with the canal, myriads of insects could be seen floating and hovering over the surface. A variety of water birds and fish were hungrily devouring these insects.

Mr. Pandey, a plant official, showed us ample photographs and videos to prove the presence of a rare bird like the Indian Skimmer, which is vanishing from all other sanctuaries but thriving in the water bodies and the Ganga at Narora. Yet another rare

bird, highly susceptible to water quality, is the Red Crested Pochard. This bird too thrives at the spot where the water from the plant is discharged in to the canal, informed Mr. Pandey.

Birds apart, the Ganga near Narora has Crocodiles, Ghariyal, Giant soft shelled, cadaver eating Tortoise and even Dolphins. Tigers have been cited within the forest and the photographic evidence was with Mr. Pandey.

Why doesn't the population of rich fauna get affected by radiation? This question was haunting our minds, till we saw the Environmental Laboratory within the premises of NAPS. It was enlightening to know that even the gases that are released from the plant are not allowed to go out scot-free. They are passed through filters inside a 140 m tower. These filters take care of all the metals in the gases. Radiation if present beyond the threshold is checked inside the chimney and if there is even an iota of risk the plant is automatically shut down.

The Nuclear Reactor is 'watched' round the clock from the control room, manned by a group of experts. It is a common belief in our country that engineers take things casually and are always caught napping in case of a mishap. There can be no compromise with the safety and security of the plant, of the workers and of course of the population within a radius of 30 km, said Mr. Sharma, the Project Director of NAPS.

With a variety of checks and cross checks technicians at NAPS ensure that nothing but electricity goes out of the campus. Similarly, at the entrance the security personnel ensure that only genuine persons gain entry. A visitor is constantly under the hawk eyes of CCTV cameras.

When Thomas Edison, began supplying electricity to about 70 residences of New York in 1879 from his generator, there were hundreds of New Yorkers who shunned the idea and preferred to stick to kerosene lamps. It was the fear of the unknown that kept them away. Today, we cannot dream of spending even a second without electricity.

Likewise, the fear of nuclear power needs to be removed from the minds of our countrymen if we wish to see our country prosper and forge ahead.

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