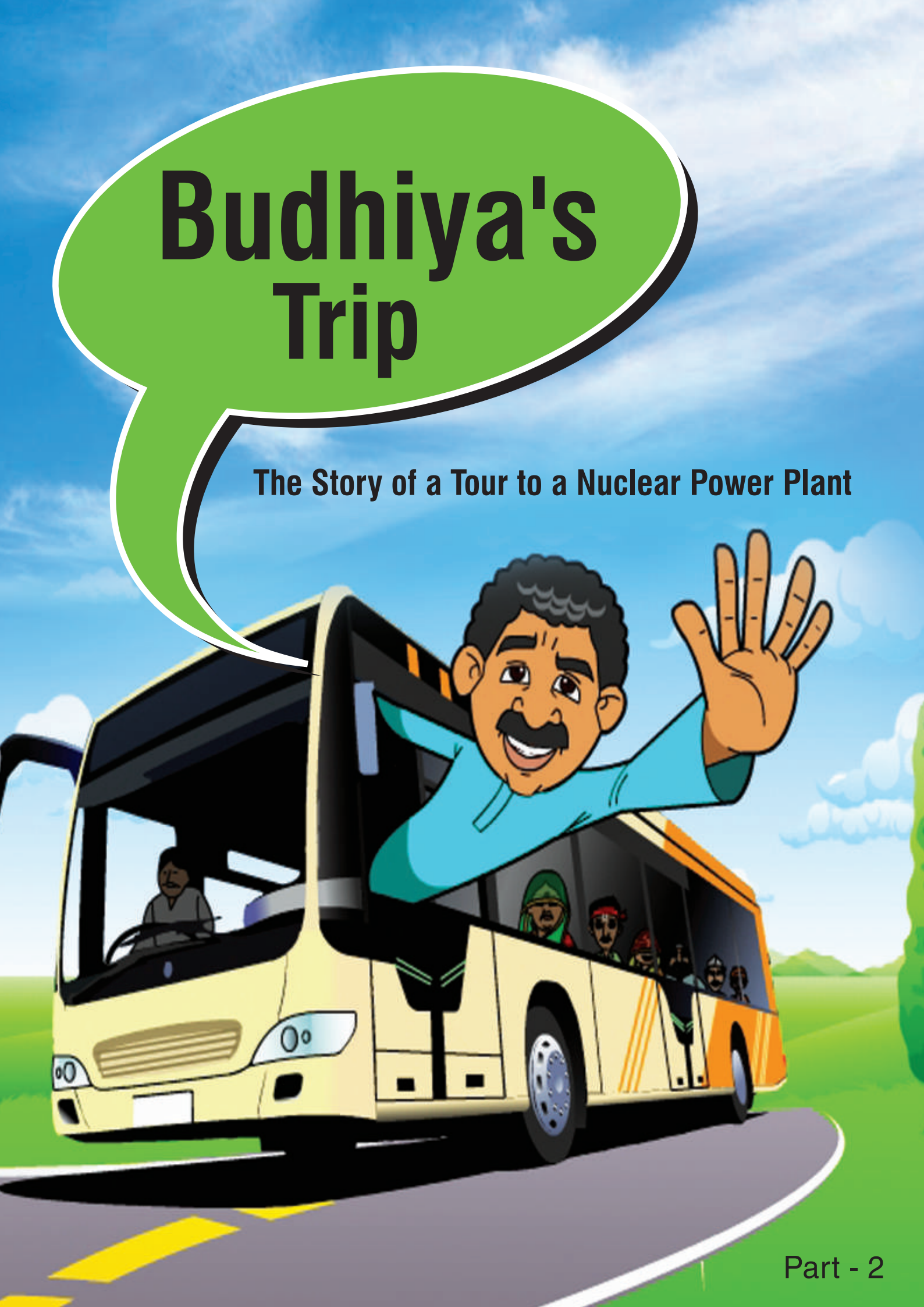
Budhiya's Trip

The Story of a Tour to a Nuclear Power Plant



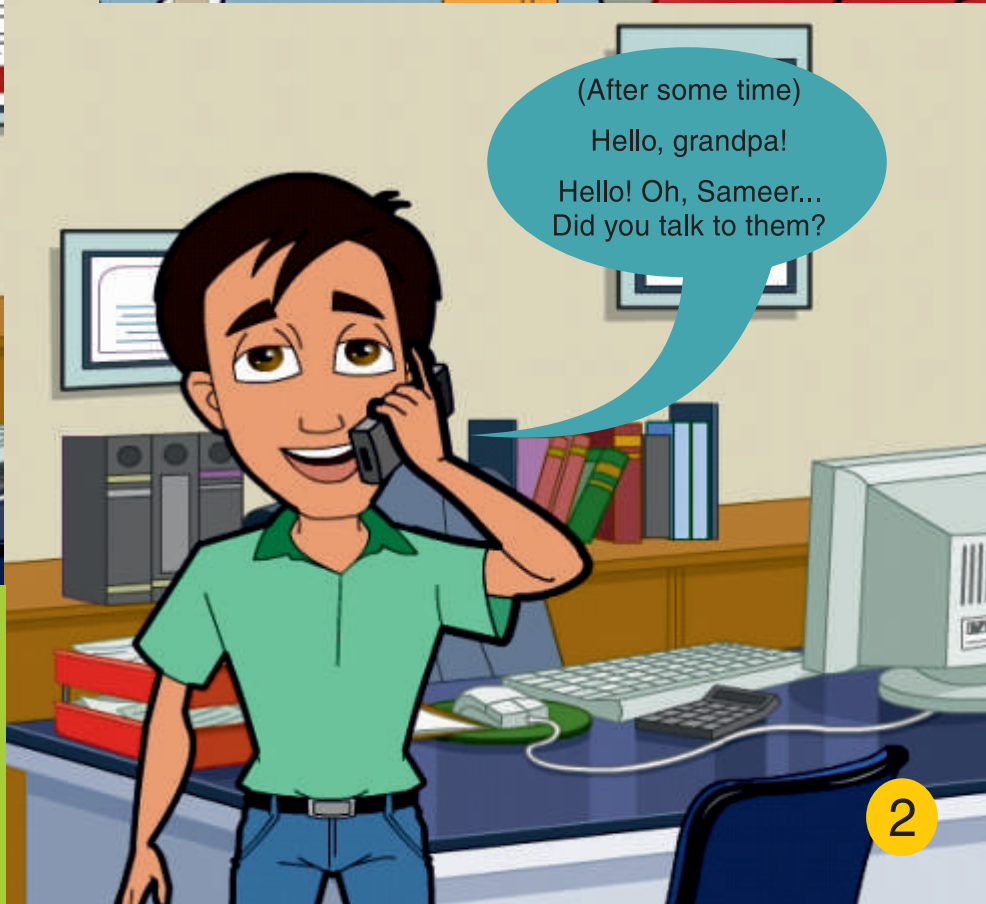
Part - 2

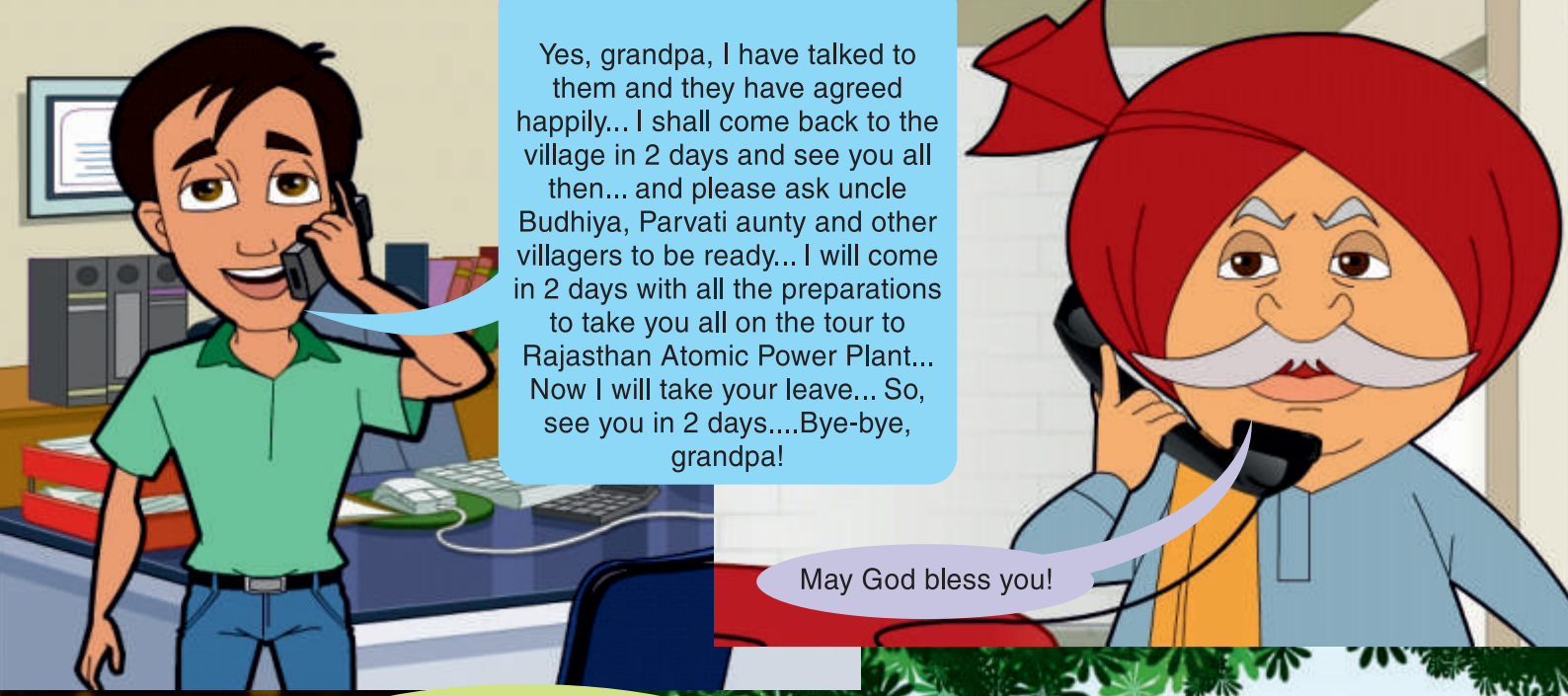
The story so far is that Sameer, an educated local youth currently living in a city, joins the fellow villagers in a discussion on nuclear power and dispels the many myths surrounding nuclear science, and explains to them its various benefits to the mankind. His clear and simple explanations are well understood by the villagers, who are now pretty much convinced about the positive changes that nuclear power can bring to their lives. Now the villagers are curious to know more about nuclear power. Soon, they all decide to go on a guided tour of a nuclear power plant.

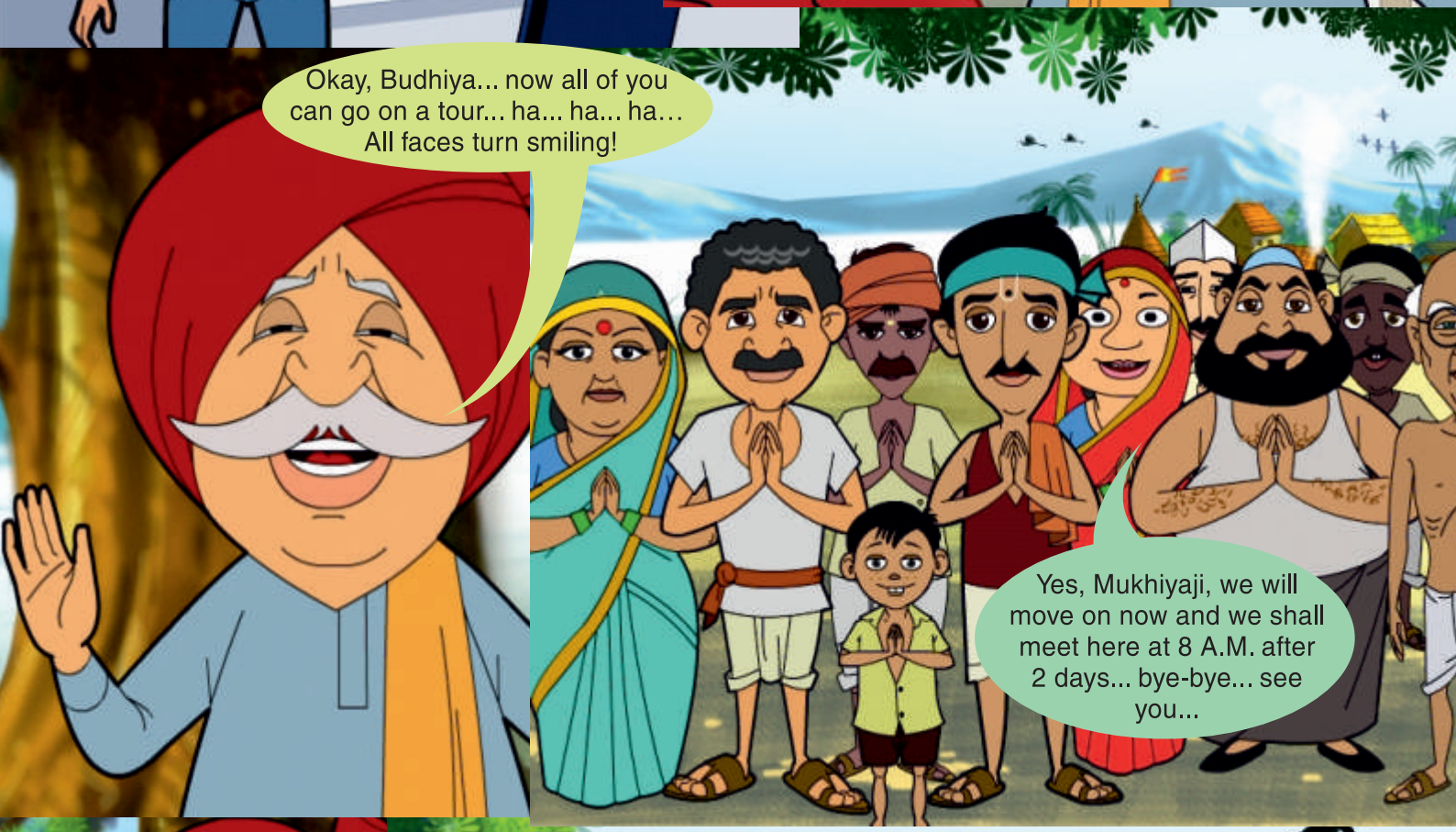
So, now let us join them on this exciting tour to a nuclear power plant... Let's see how Budhiya and villagers enjoy this...

Based on their discussions with Sameer in the previous meeting, the villagers visit Mukhiyaji... and request him to finalize a programme for a tour of the nuclear power plant.

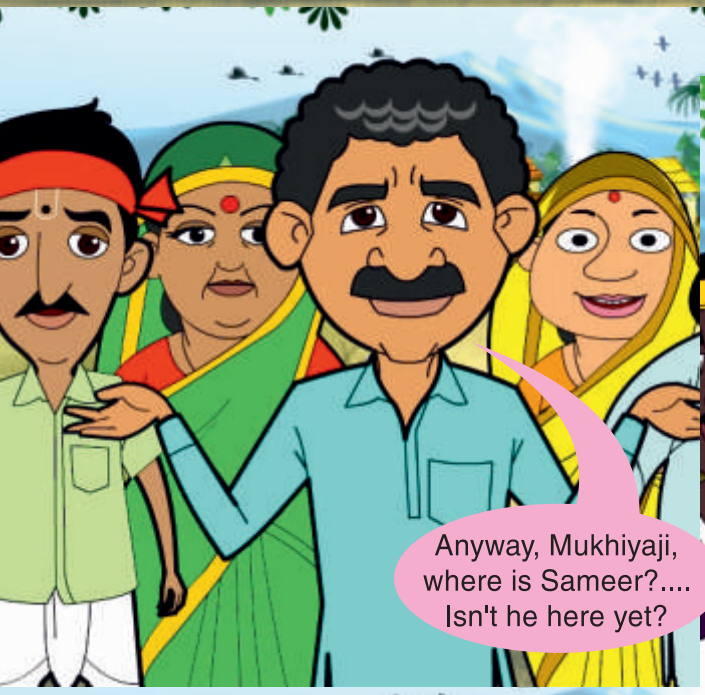
Sameer: Sure, grandpa. I will talk to the concerned authorities regarding our visit... and get back to you shortly...

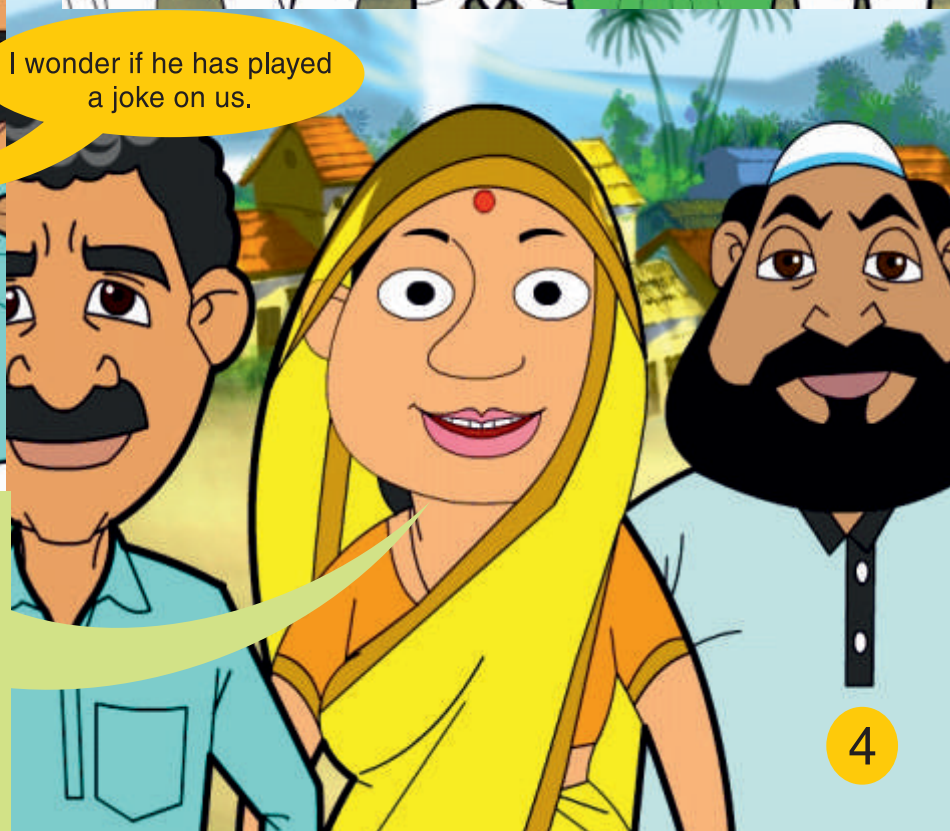



Yes, grandpa, I have talked to them and they have agreed happily... I shall come back to the village in 2 days and see you all then... and please ask uncle Budhiya, Parvati aunty and other villagers to be ready... I will come in 2 days with all the preparations to take you all on the tour to Rajasthan Atomic Power Plant... Now I will take your leave... So, see you in 2 days....Bye-bye, grandpa!
May God bless you!


Okay, Budhiya... now all of you can go on a tour... ha... ha... ha…
All faces turn smiling!
Yes, Mukhiyaji, we will move on now and we shall meet here at 8 A.M. after 2 days... bye-bye... see you...


Good morning, everyone!
After 2 days... All villagers approaching Mukhiyaji's house…

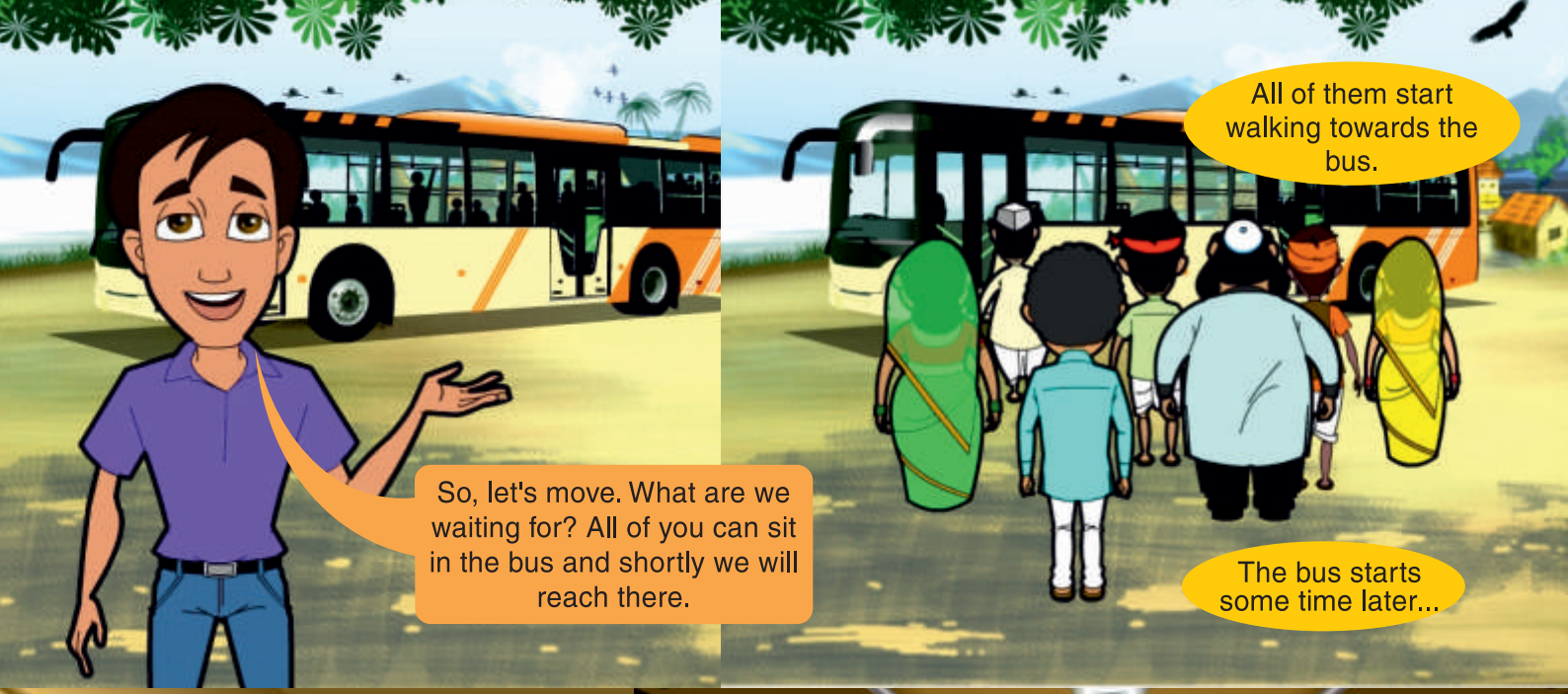




I know him well. As a kid, he used to be very naughty...

(There is a chatter in the crowd as everyone stares at each other...)


(With a smile on his face..) No, no... nothing like that... please, have some patience... he must be on his way... Oh, here he comes.
At the same moment, Sameer lands from a big bus and moves towards the crowd...
Hello, grandpa!
Happy to see you... and well, you are just on time, too.
Hello, everybody! Wow! You all look great today.. Yes, Budhiya uncle... You look very happy today.
Yes, Sameer, we are all excited about the tour of the nuclear power plant... We wonder how big it may be!
Yes, Sameer, we all are very excited to visit the power plant.


So, let's move. What are we waiting for? All of you can sit in the bus and shortly we will reach there.
All of them start walking towards the bus.
The bus starts some time later...


How are you feeling, Budhiya uncle?... I hope you are enjoying.


Yes... We are all having fun. Indeed, we are waiting for the bus to reach there… However, we forgot to ask you one thing...


What happened? What is it that you want to ask?


Just want to know how you are connected to the nuclear power plant?… How did you manage to get so much of information? How did you do it?

(Sameer while laughing)... I knew you would ask me this... While I was studying my engineering, we were sent there for 2 months as trainees... while on training for 2 months, I have seen all the operations very closely. That's the reason I was able to explain so much about nuclear power... Hope you got it, uncle…

Understood, my dear. You seem to have become very intelligent.

(The bus arrives at the gate of the nuclear power plant)

Oh, here we are, uncle... we have already reached... Let's get down from the bus and stand in some corner. Meanwhile, I will just have a talk with security personnel...

Yes, Sameer… as you suggest.

Rajasthan Atomic Power Station 5-6

All the villagers get down and stand in one corner... and are very surprised to see the level of security at the gate.

Rajasthan Atomic Power Station 5-6

Sameer walks to the security room near the gate...

Meanwhile, Budhiya and some other people try to peep into the gate...

Anybody having mobile, camera or other electronic devices? We request you to hand over the same. These are prohibited within the nuclear power plant premises.

All of you can now make individual gate passes...

(All of them deposit their mobiles and cameras)

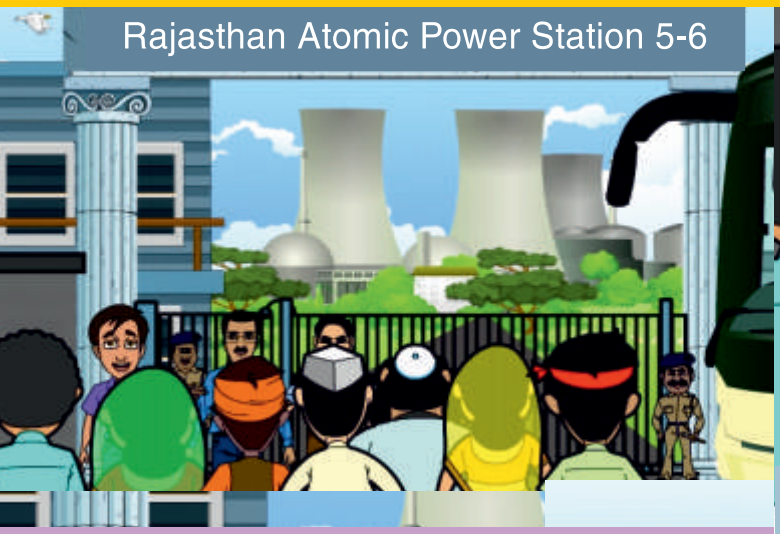
All of them come by turns and get their ID cards.

Meanwhile, Sameer approaches the gate with 2 executives.

Thank you very much, sir.

Mr. Sameer... gate passes for all the persons are ready. Now all of you can board the bus and then you can enter the nuclear power plant premises. There will be another level of security check, where there will be a security scan and then you will be allowed to enter inside.

Rajasthan Atomic Power Station 5-6



Sameer introduces the villagers to the executive.

Uncle, meet Mr. Amit Kumar. He will be our guide for the tour.

Hello, everybody! Welcome to Rajasthan Atomic power plant... Come on in.

All of them now return to the bus and the bus moves inside the main gate.

Hello, everybody! This area through which we are passing right now is called the Exclusion Zone. No one is allowed in this area without prior permission.

What is it used for?

Actually in this 1.6-km area, we maintain greenery and dense forest. Indeed, it is home to a variety of birds and butterflies. The natural environment here is clean and pristine and it supports a wide range of biodiversity.

Wow! It's so much greener here and the surroundings also look very clean… can we stop here for a while and watch these birds and butterflies?

Why not? Driver, please stop on the left side.

The bus stops and everybody gets down and begins exploring the picturesque surroundings.


Wow! What beautiful scenery!
Very beautiful, indeed, and see all these lovely birds!


Oh! That peacock is so beautiful! It's a pleasure to see it!

This is certainly very important zone, which is not only useful as a place to conserve birds, plants and other animals, but it also helps in reducing the impact of radiation in the event of an accident at the power plant.

Oh! So, that's the reason why there is a 1.6-km-diameter prohibited area maintained around a nuclear power plant.

Everybody is now back to the bus… And they soon arrive at the second gate of the power plant.

Now, everybody… one after other… please get down, and from here, with one more security check, we will enter the nuclear power plant.

Ok, sir. (All of them get down from the bus, and after the security check, enter the nuclear power plant.)

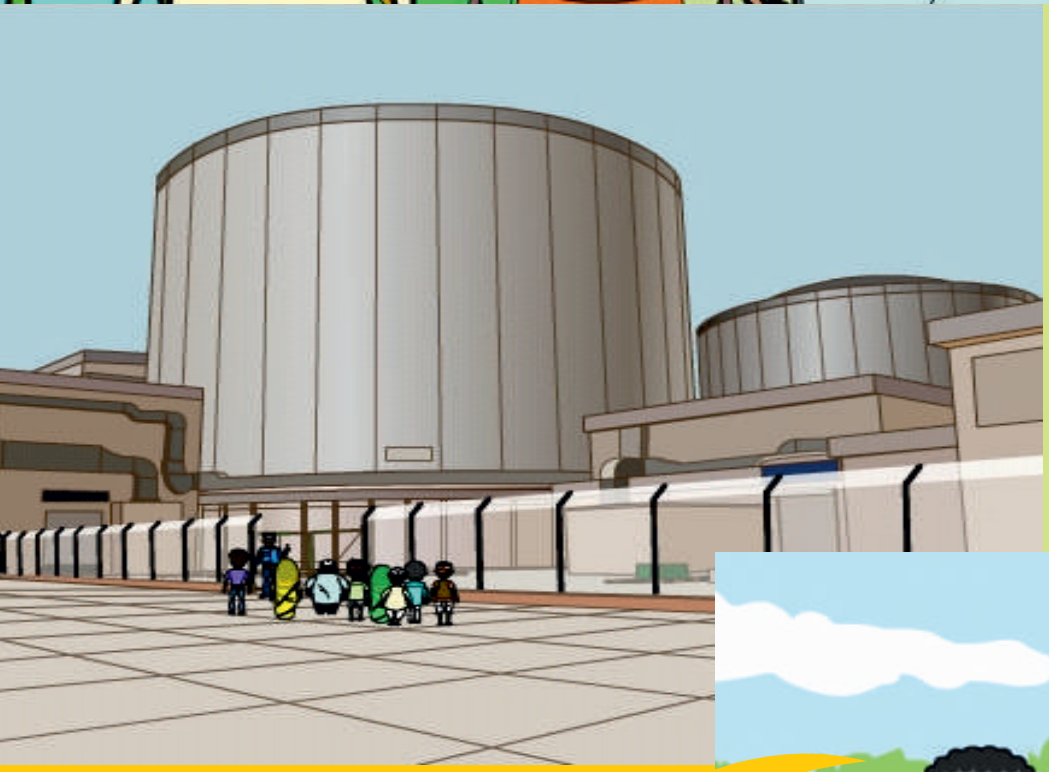
Through the security check point

When they enter inside the entrance gate, it looks absolutely impressive… everybody is very excited to see it.

Yes, it's really impressive!

Oh!… It's very big and indeed magnificent!

Come on in… I will take you along…



That circular vault you see is a reactor chamber. This is an important location of a nuclear power plant, and this is from where the actual power making process starts. Mainly, it has 2 walls – 1st wall and 2nd wall; both are made of concrete, and these are very strong.

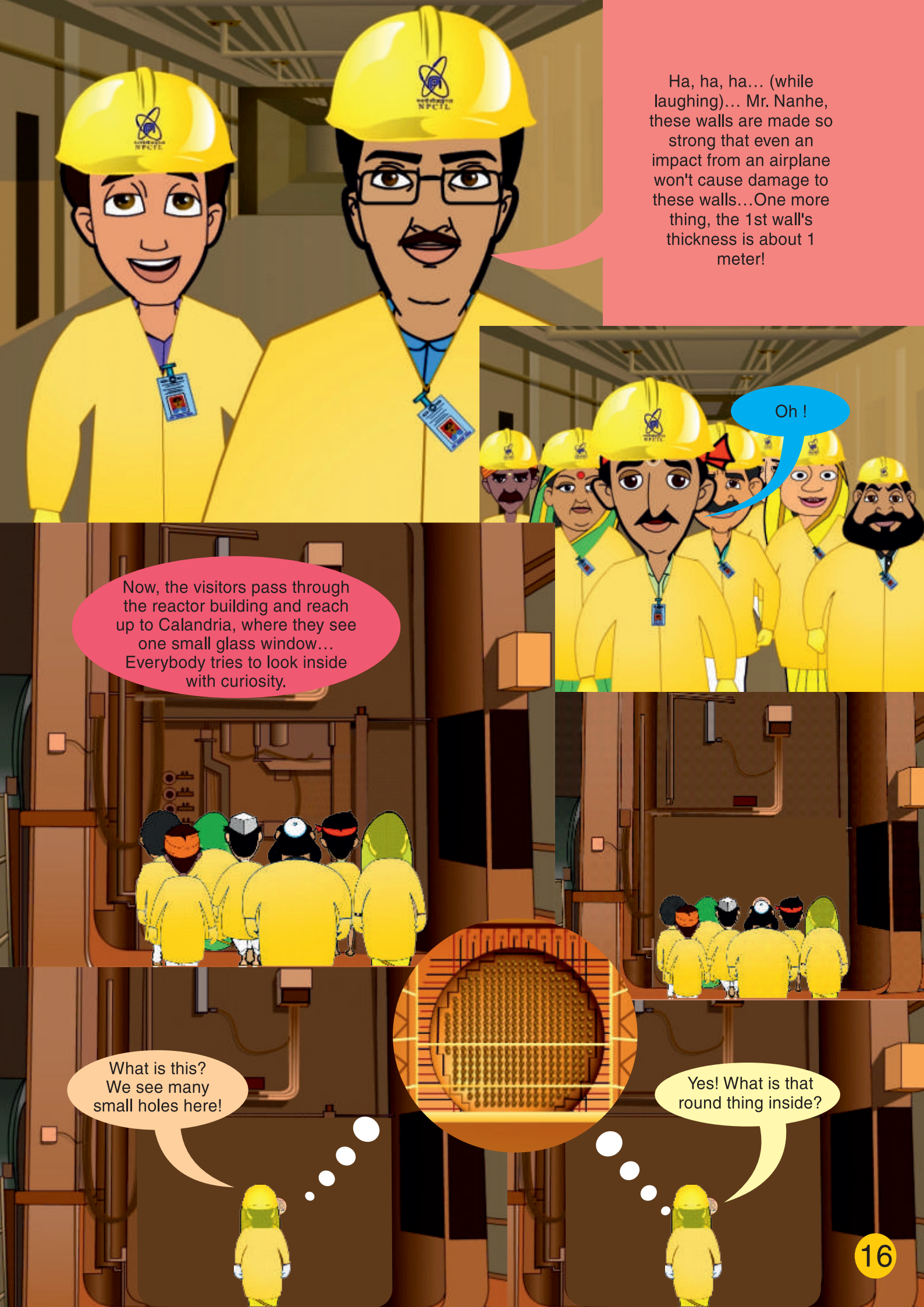
Yeah, can we get to see these walls from inside?

Come on in… I shall take you through inside this.

Sir, can you please explain why there are 2 wall layers, whereas our houses have single walls?

Are these walls very strong? Can they break?

Very good question, Budhiya… The 2 walls are there for security reasons. In the event of an accident, the main wall first blocks all the radiation. However, in some rare case, even if some radiation passes through the first wall, the second wall blocks the radiation completely… Also, there is an empty space between the 2 walls to block the radiation further… I hope you now understand why we made these 2 walls.


Ha, ha, ha… (while laughing)… Mr. Nanhe, these walls are made so strong that even an impact from an airplane won't cause damage to these walls…One more thing, the 1st wall's thickness is about 1 meter!
Oh !
Now, the visitors pass through the reactor building and reach up to Calandria, where they see one small glass window… Everybody tries to look inside with curiosity.
What is this? We see many small holes here!
Yes! What is that round thing inside?

Like our heart is a very important part of our body, a nuclear power plant has this part called Calandria, where we add fuel called uranium. The splitting of uranium atoms takes place here, which leads to the release of a large amount of energy, which heats up the surrounding water. Ultimately, this heats up the water in the boiler to generate steam. This steam rotates the blades of the turbine, which is ultimately connected to generator, which finally produces electricity. The generators are further connected to grid. Electricity is then distributed from the grid to every house by transformers and wire networks.

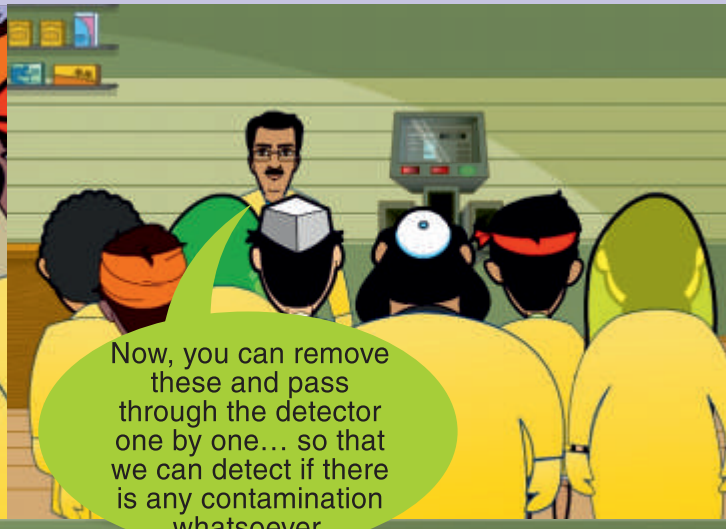
(Everybody listens to him carefully.)

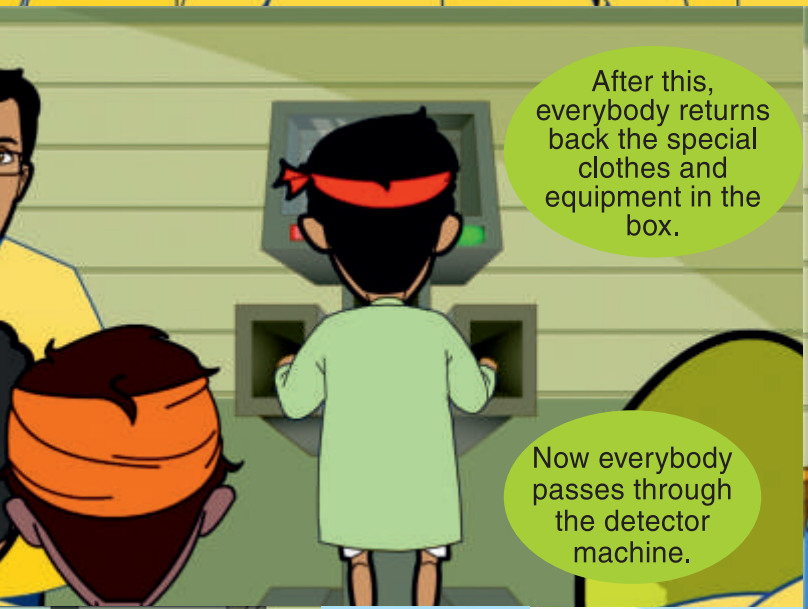
Sir, I have a question. When the fuel is exhausted in the process of making electricity, then how do you refill the fuel if nobody can enter here?

I am pleased to hear this… Indeed, you have asked an interesting question… In fact, this operation is computerized and with the help of robotics, we are able to refill the fuel…. as human entrance is prohibited inside.

After this, everybody moves out of the reactor chamber… and they all move towards the machine which detects contamination.

Mishri aunty – every time we come out from reactor chamber after finishing work, we pass through this machine… By doing this, we get to know if any of our clothes or body parts are contaminated or not…You remember, moments earlier we used special type of clothes and hand gloves as protective measures.





Yes, It's very secure… For years, people working here are safe… Now I got it.

Certainly, you are right… Come on, I shall take you to Turbine Hall (everybody moves towards the Turbine Hall).

See this, this is the Turbine Hall. Here electricity is produced by generators with the help of turbines.

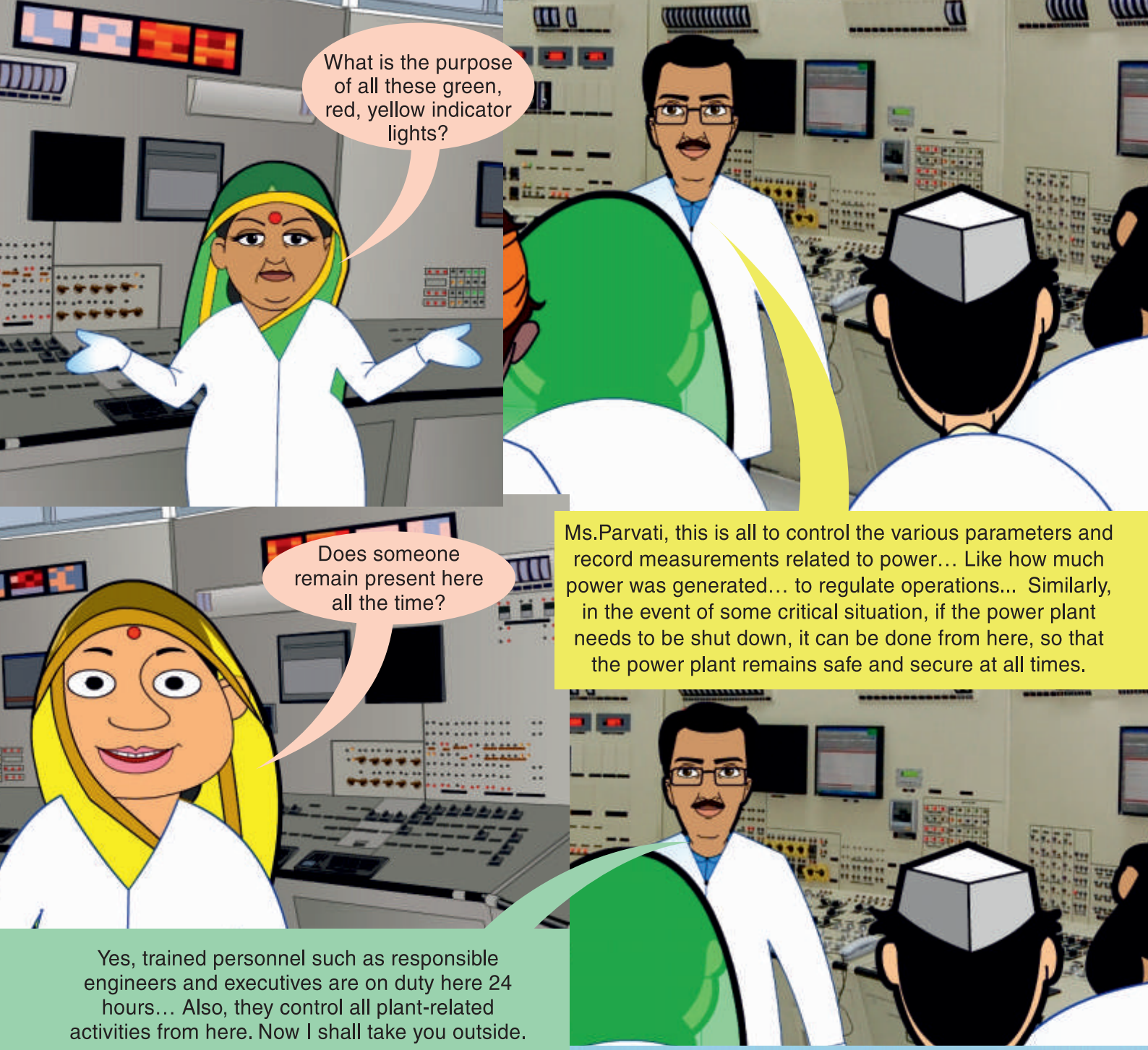
Oh! How big this is! It's really exciting to see all these things.

All of them look at each other with astonishment.

From here we will take you to the Control Room (everybody enters the Control Room).

…Inside the Control Room… Persons working there…

This is the Control Room of the nuclear power plant… All the processes are controlled from here.


What is the purpose of all these green, red, yellow indicator lights?
Ms.Parvati, this is all to control the various parameters and record measurements related to power… Like how much power was generated… to regulate operations... Similarly, in the event of some critical situation, if the power plant needs to be shut down, it can be done from here, so that the power plant remains safe and secure at all times.
Does someone remain present here all the time?
Yes, trained personnel such as responsible engineers and executives are on duty here 24 hours… Also, they control all plant-related activities from here. Now I shall take you outside.


Amit Kumar moves outside along with all the visitors.

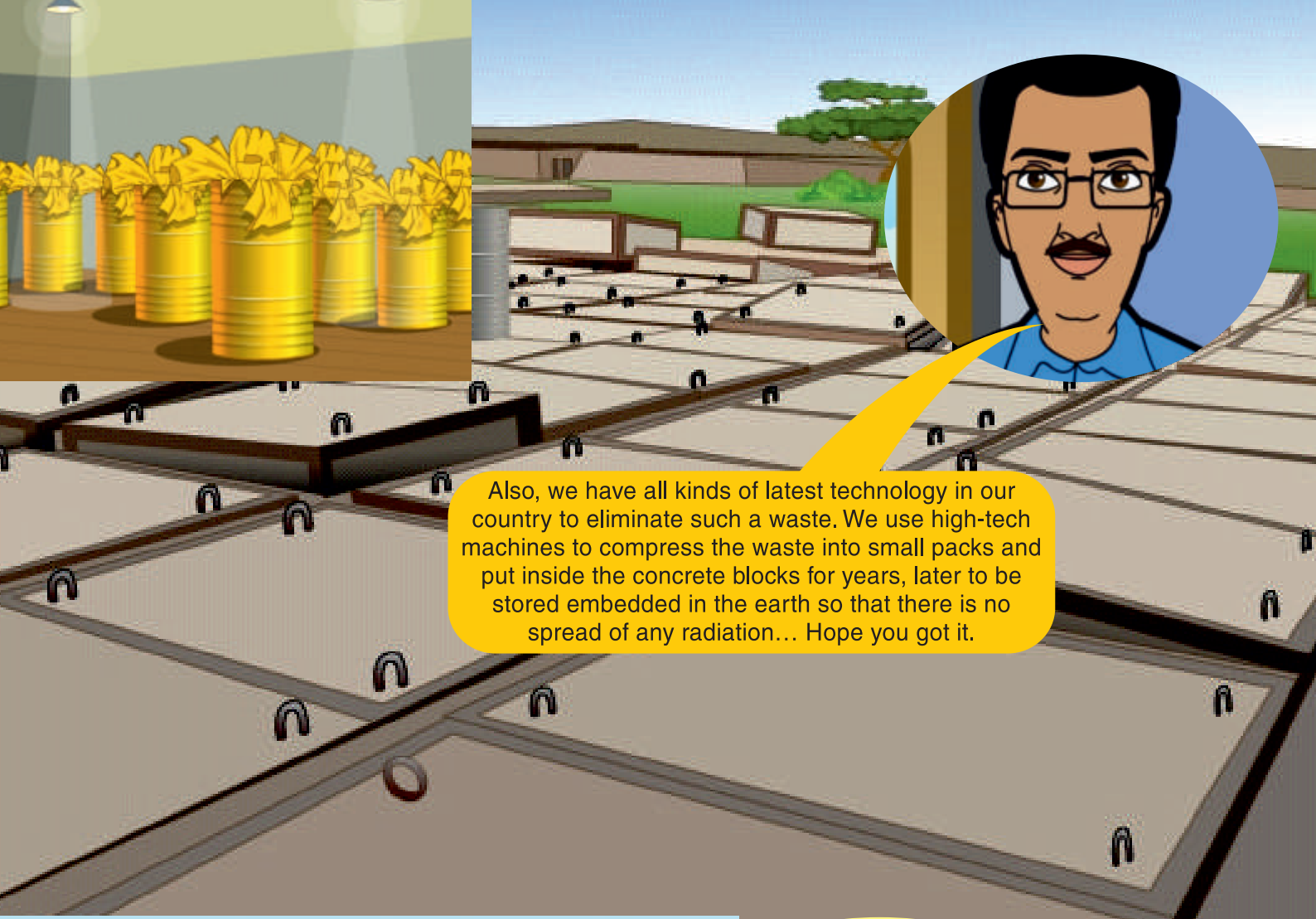
(A view of cooling towers from outside)

What's that which looks like a chimney? And there is smoke coming out of it, too.

(Laughing…) That's the cooling tower, and the smoke you are seeing is actually steam… nothing else. Actually, with the help of cooling towers, we are able to reduce the temperature of the water released from the plant… So that the temperature of this water doesn't affect any aquatic creatures.

Is there any waste generated in the process? What happens to that? We have heard that there is some radiation from such a waste.

You have asked a right question; however, the quantity of nuclear fuel used is extremely small, and thus there is very little waste generated while we make electricity in a nuclear power plant. After using the fuel, we preserve the waste fuel in deep storage tanks for years, so that there is no spread of contamination… It is only then that we re-use it for future applications. Whereas, if you compare this with coal and other sources, their waste products, like fly ash, CO_2, SO_2, NO_x etc., are indeed harmful to environment.


Also, we have all kinds of latest technology in our country to eliminate such a waste. We use high-tech machines to compress the waste into small packs and put inside the concrete blocks for years, later to be stored embedded in the earth so that there is no spread of any radiation… Hope you got it.

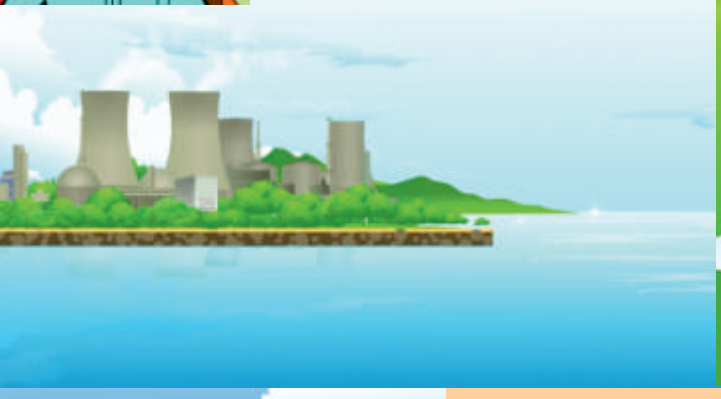

Yes, sir.


Come on… I shall take you to the place from where we take in water to be used in the nuclear power plant.


Everybody walks towards the water intake system.

Now you can see this is the source from where we take water to be used in the plant. The water is finally released back into the water body.

So, is this water released back into a river, lake or sea? That may be quite hot water, isn't it?



This could possibly kill fish and other water creatures!

There may be radiation in the water, too.

So, do you use the same water for drinking, too?

I am sorry, but please ask one question at a time… I will answer you one by one. It's but natural that water from the nuclear power plant is slightly warm, but it is cooled in cooling towers and only then released in the water body… so that it has no effect on fish or any other creatures. Moreover, fish thrives in this area. Also the point to be noted is that there is no radiation whatsoever.

(Budhiya watches closely and sees some fishes swimming in the water.)

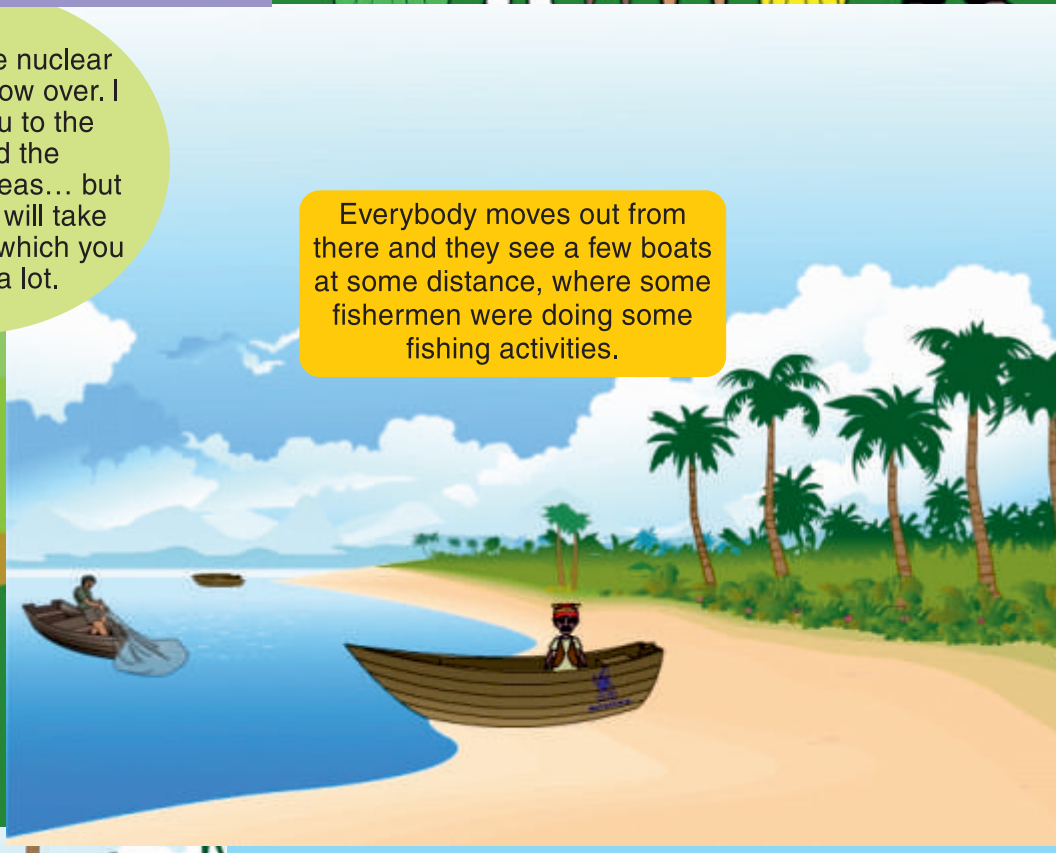
Certainly… and as far as drinking water is concerned… we all drink the same water… as this is just normal water like any other water… like that which you all get through the water filters in your homes. With some basic treatment, this water is drinkable water… after the treatment, it reaches to the nearby colonies and societies … understood!

Yes, we see a lot of fish… which means some people just spread rumors around….

So, does it mean that the fine water we had earlier… was from here only?

Yes, it was from here only… You said right… ha, ha, ha! (laughing).

One more thing, you can see that a nuclear power plant is set up at a height similar to how we make our houses near the sea – at a height. This ensures safety of the plant from water waves, hence we don't need to even worry about tsunamis.




No, no, there is nothing like that… Aha! All these villagers are from Jagdishpur village and want to take a ride on your boat… I want to show them mango and other fruit gardens here. Are you ready?
Yes, sir. (Everybody boards the boat, and after the boat ride they arrive at one lovely place.)
…One beautiful garden of fruits… where there are plenty of trees of various fruits like mango, guava, banana, muskmelon, etc.
Where are we? It looks like heaven! Wow! Trees of mango, guava, banana and muskmelon….. It's fantastic! So many fruit trees… We are already so hungry!

Now all of us will taste these fruits here.

(While eating a few mangoes…) Wow! It's very sweet, juicy and tasty… These are indeed delicious!

I will have only bananas.

Yes, this is what we are trying to explain all along, that the environment around the nuclear power plant is absolutely clean and green, and it has no effect whatsoever on fruits and gardens. Periodically, we take samples of these and send it to our labs for analysis, so that we are sure of its purity. Also, with the use of high-tech techniques in farming, we are able to improve the quality of fruits produced here, so that mangos, banana, guava and other fruits are sweeter. As you have already visited the inside of the pant, and there is no radiation or contamination effect there, so how can it have any effect here?

But, sir, how come with the nuclear power plant so close, we see so many fruits here… and that too, delicious fruits! How come radiation doesn't affect this?

Yes, sir. You said it right… Now we are very much assured that our plants, fish, mango trees and farms are very much safe in the vicinity of a nuclear power plant. Indeed, there is no side effect at all.

(The boat approaches the shore… everybody walks towers the colony. On their way, they see an old man carrying his grandchild in his arms.)

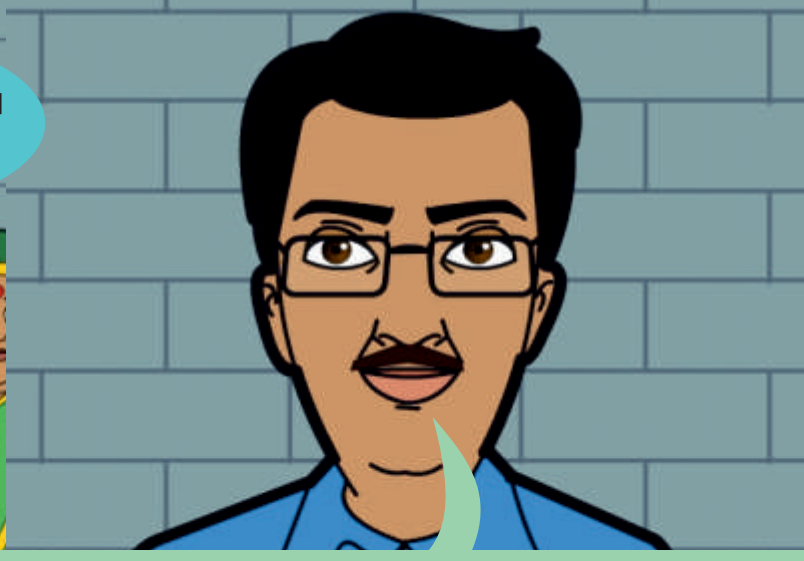
Nothing special… all these are our friends who are from village Jadjishpur… I am just taking them to the colony and our village… Mr. Budhiya, he is Mr. Sinha… He was an employee of the nuclear power plant for 40 years… Now after his retirement, he has chosen to settle down here… he has a son and a daughter and a grandson, too. His daughter is studying abroad and his son is an executive in a very reputed company… You can see how Mr. Sinha is still absolutely healthy.

Yes, no one will believe he is retired and has worked for 40 years in a nuclear power plant.

After talking to Mr. Sinha, all of them move ahead and see the village on their way they and are very impressed with well-maintained roads, canals, toilets and other public places…


Wow! The streets are very clean and well-maintained, with canals, too!
Look there! There are hand pumps for water at many places!
Has all this development been done by the people here?
NAI MAKI
UNCAF
Yes… All this development was possible after the establishment of the nuclear power station here.
NAI MAKI
Yes, uncle. Didn't I tell you?

Shortly, they see a school… RAJKIYA KANYA VIDYALAYA. Here they get books, notebooks & bags for free…)



We offered them, so that they can become self-employed… They make clothes used in the nuclear power plant. We buy them from these villagers at market rates.

Oh!… that's really nice.

Further, they see some rush at the primary medical center… Suddenly, they see some lady attendant coming out…

Dr. Abha, how are you?

HOSPITAL

Hello! Kumarsaheb, I am fine. You tell me.

How come there is so much rush here today? Any good news?

Yes, sir… Today, Fulva, the wife of Pandu fisherman, has given birth to twins… Everybody has come here to congratulate them… Hence, there is this rush.

Great! Please, give them my regards, too!

Now you see, Parvati aunty… Savita aunty was wrong . You have seen with your own eyes that there is no effect of any radiation around the nuclear power plant…or else, Fulva would not have become a mother.

Come… I will show you the colony… The colony is slightly away, so we will go there in a bus.

Yes, dear Sameer, you were right about this. I will tell her this once I go back to our village.

(Everybody takes their seat and the bus reaches the colony… (Colony view – houses, public places, shops, tar roads, lights, trees all around, and cars, too.)

Wow! It's a very beautiful colony. Everything is just the way it should be and also very beautifully made…. Cleanliness is maintained all over.

Looking at this colony, I am tempted to stay here! (Everybody laughs…)

Yes, sir… actually when Sameer told us earlier, we did believe him – but after our own visit to the nuclear power plant, now we do not have any doubts or misconceptions.

Now you have seen how the nearby villages and the surroundings benefit from the nuclear power plant. I hope, you all have gathered enough information… and I am sure this trip has cleared your doubts and misconceptions about nuclear power plants.

Yes, all doubts and misconceptions are cleared now.

Yes, now on, we will also not live in huts… We will also live in modern homes (everybody laughs).

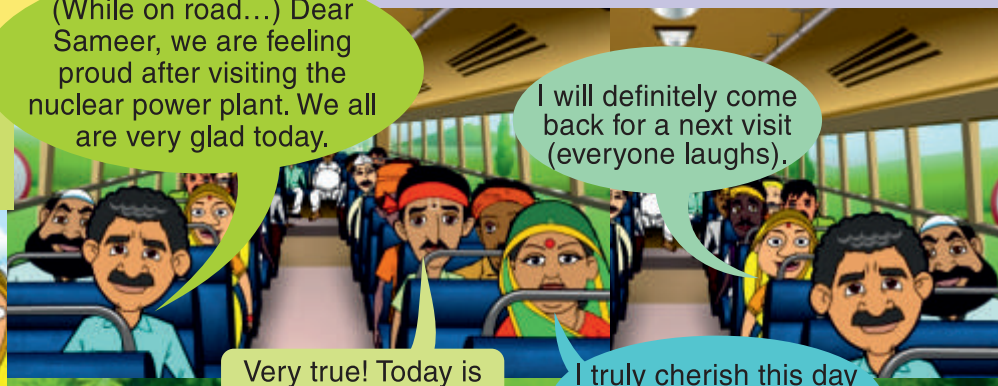
Now, we all know what progress is… and why progress is necessary.

All of us from NPCIL are thankful to you, all of you, for taking this tour of our nuclear power plant. You are always welcome here, whenever you wish to come again… We will look forward to seeing you all again with your other friends… (Amit Kumar takes leave with a smile…)

We are also thankful to you, sir, for giving us your precious time and for guiding us through the plant in a detailed manner.

All of us are thankful to you. (The bus starts for Jagdishpur….)

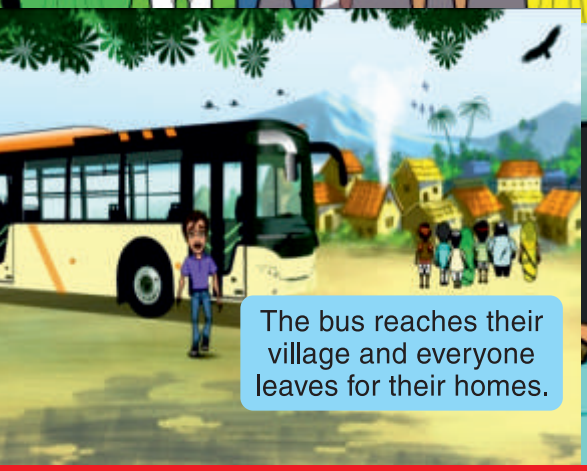
(While on road…) Dear Sameer, we are feeling proud after visiting the nuclear power plant. We all are very glad today.



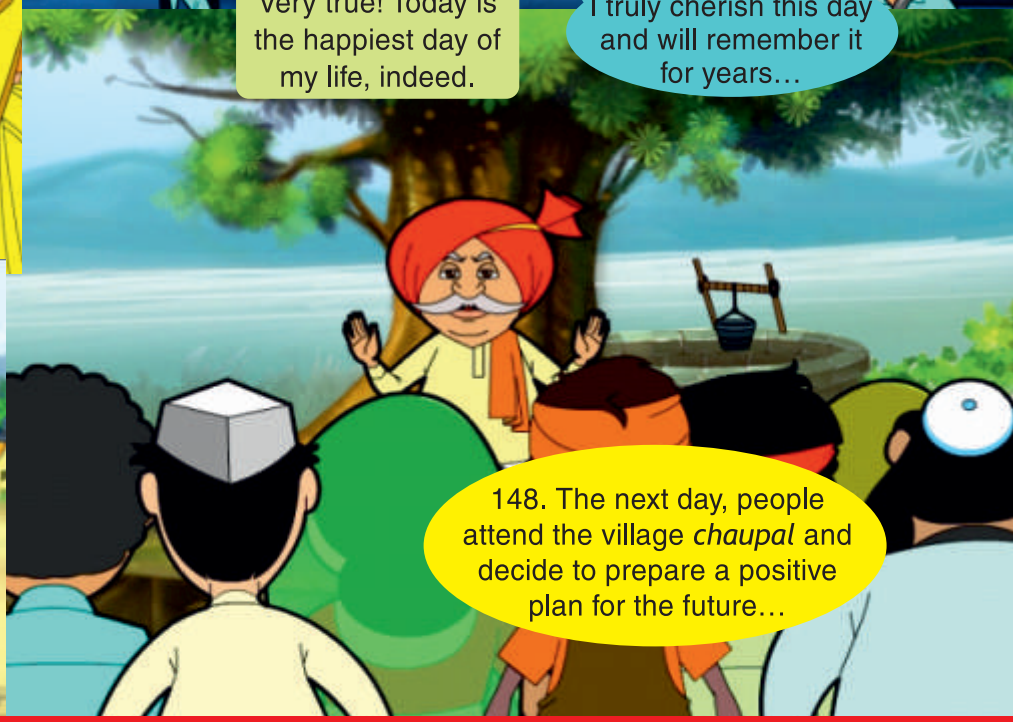
I will definitely come back for a next visit (everyone laughs).

Very true! Today is the happiest day of my life, indeed.

I truly cherish this day and will remember it for years…



The bus reaches their village and everyone leaves for their homes.



148. The next day, people attend the village *chaupal* and decide to prepare a positive plan for the future…

What happens next, after Budhiya and the villagers are back from their trip to the nuclear power plant?

What happens when Budhiya tells others about the nuclear power plant?

Will there be a nuclear power plant set up at their village?

To know more, just grab the next issue…

"The Awakening of **Budhiya**"

The story of how Jagdishpur is transformed into an ideal village

"Nuclear Energy… Nation's Energy Clean Energy… Clean India"

Continued…

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