Managerial Accounting
Prof. Dr. Varadraj Bapat
Department of School of Management
Indian Institute of Technology, Bombay

Lecture - 31
Standard Costing - Material, Labor and Overhead Variances

Dear students, in last few sessions we have discussed about budgetary control. And we have also in the last sessions, started the discussion on Standard Costing. To take a brief review, budgetary control was used as a planning and control mechanism. Standard costing is primarily a controlled tool, it fit is into budgets. It helps in making estimates. But, the main advantage of standard costing, is it acts as a very good mechanism for control.

In the earlier session, we have seen the advantages of standard costing. We have also discussed, how the variances are calculated, particularly material variances. To take a brief recap, the steps in standard costing. If you remember, first start with naturally start with setting up of the standard. So, first we need to set the standard. While, we set the standard, we do a detail analysis of the process.

We look at which raw material is used, which method is being followed and that goes into deciding a proper way of doing the thing. And we also arrive at, how much time is needed, how much raw material is needed and so on. So, first is standard setting, second is recording the actuals in detail. Third is, comparison of actuals with standards to know the deviations. These deviations are known as variances. In fourth, the variances are analyzed.

So, we would like to go into detail, know what are the reasons, why something has gone wrong, if something is good, what has cost. The cost should be lower than budgeted or standard. And we would like to retain such benefits, continuously. And fifth, if necessary, the standards may be revised. So, that the revised standards are used for the next period. So, these steps are used in standard costing.

Then, we had seen that, while calculating the variances, we tried to calculate the variances for each element. So, if you look at material cost, what could be the causes, due to which material cost may vary? That is, it may be higher than the standard or it

may be lower than the standard. So, immediately it will come to your mind, that first possibility is that the quantity is more.

So, to make one unit of finished product P, let us say, we expect 10 kg's of raw material. We might end up using 11 kg's. Because, of more wastages, because of poor quality of raw material and so on. So, that 1 kg extra lost will lead to variance, which is known as quantity variance. Second possibility is, we had estimated, that we can purchase, let us say at 5 rupees per kg. But, due to market trends, it has become 5.5. So, 50 paisa extra loss per kg, that is a price variance.

Of course, there can be many extra causes, but the main distinction or the main bifurcation of material variances into quantity and the prices. So, we would like to know, how much deviation is due to quantity? How much deviation due to price? Then, in turn if it is due to prices; we will look at, is it the inefficiency of purchase department. Or is it that the market trend has really changed and so on.

First step of variances analysis, we calculate the variances. We break them down into their component. And then of course, management will look at, what has gone wrong, what are the causes and so on. So, in our last session, we had done material variances. In today's session, we will go a next step. That is we will calculate labor variances. We will also solve some cases on that same.

Then, we will look at overhead variances, which in turn can be variable overheads or fixed overheads. So, variances for both the type overheads we will see. And we will also look at, sale variances. So, these are the different types of variances, which we will try to discuss today. Now, let us look at the slides, which we have seen last time.
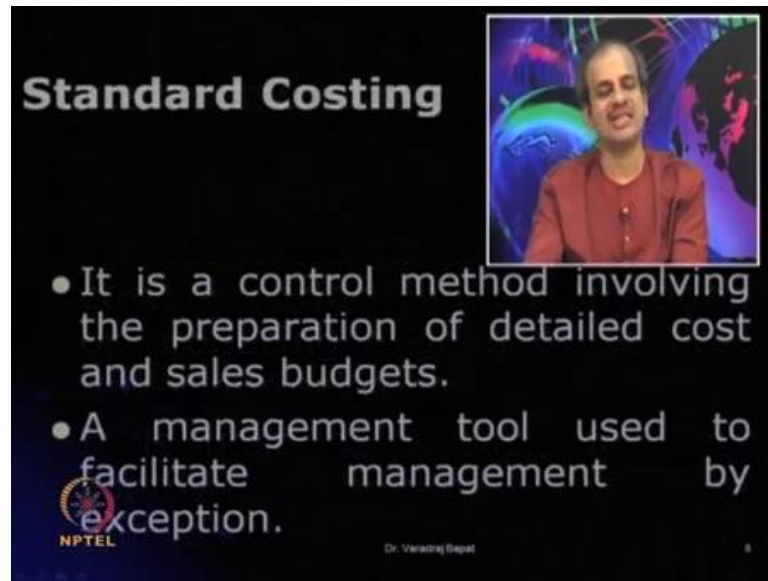
(Refer Slide Time: 04:49)
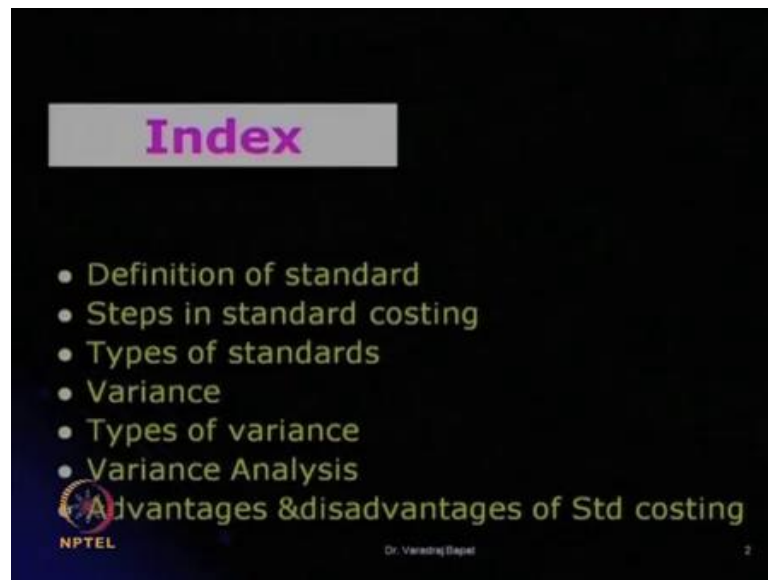
In our last session, we had started with this. We had spoken about the steps, which I have done recap today, then the types of standard, variances and so on.

(Refer Slide Time: 05:00)
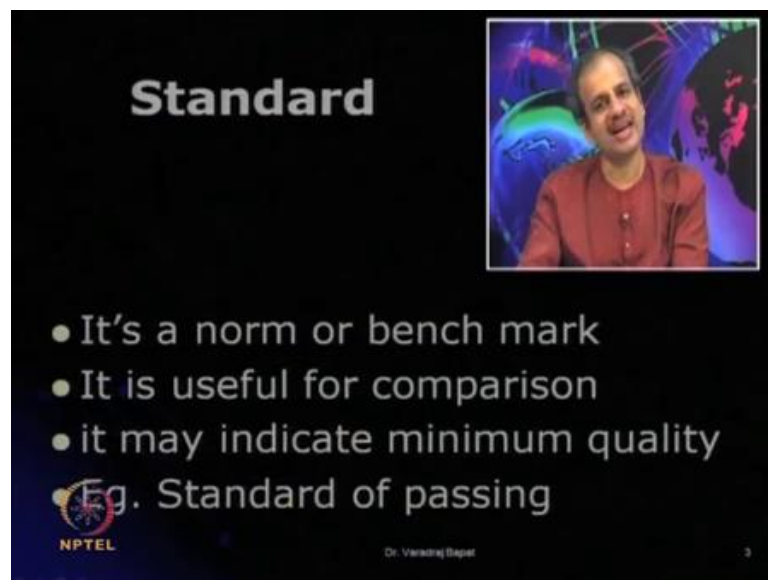
I hope you remember, what is a standard? It is a norm or a bench mark, which is used for comparison. And it is very meticulously calculated. Though, here the example of standard of passing is given. This is a sort of quality standard. We are discussing more on the cost standards.

(Refer Slide Time: 05:21)
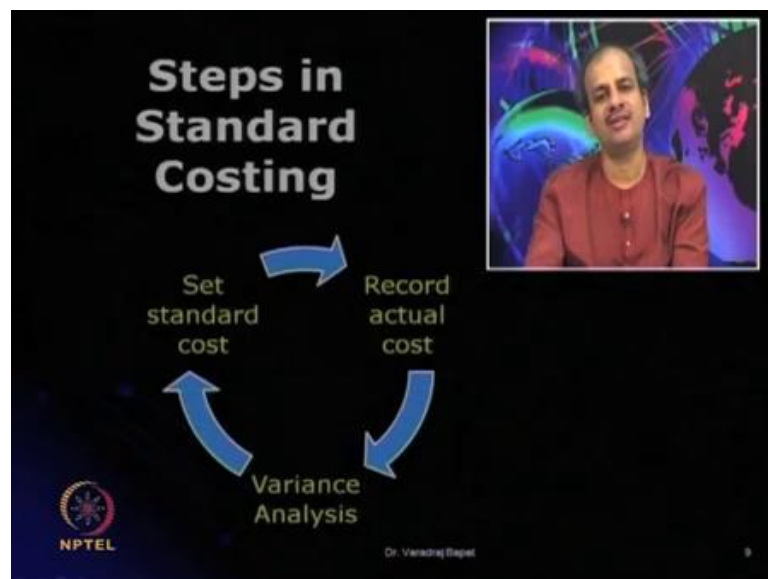
So, just try to recollect, what we have done last time.

(Refer Slide Time: 05:25)
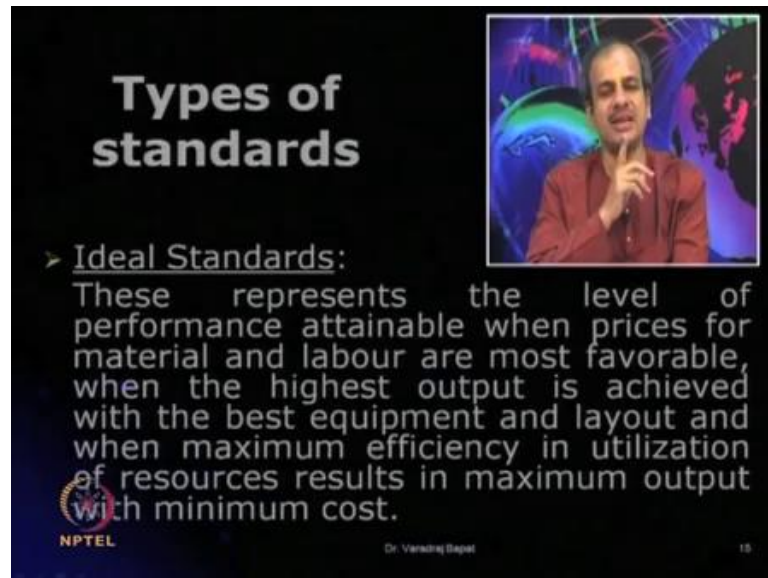
That is why I am showing you the slides. So, these are the steps in brief. We set the standard cost. We record the actual and we compare and analyze, known as variance analysis, when standards can be of various type.
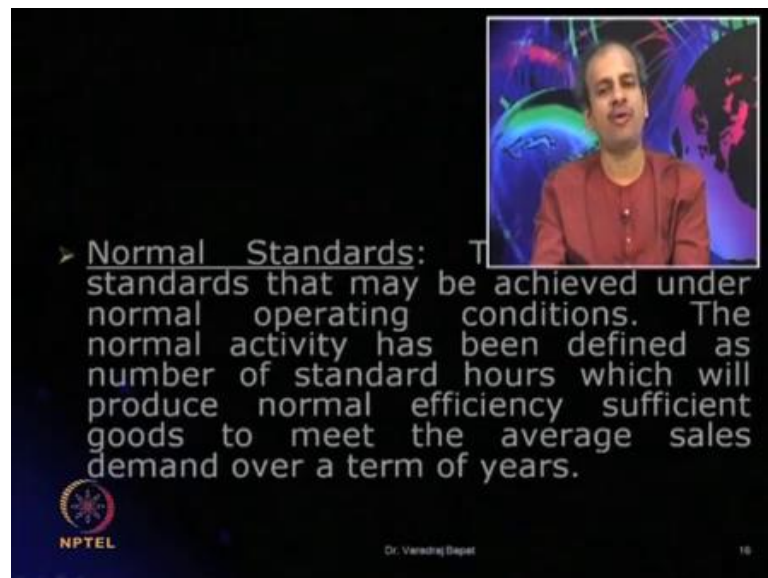
If you assume that 100 percent efficiency is achieved the most suitable conditions. Then, it is idle standard.

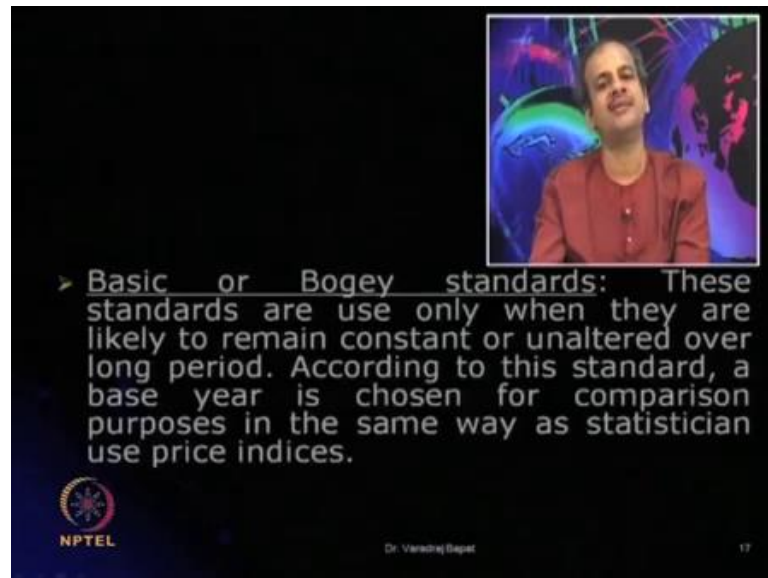Mostly, we follow, that there will be few losses. There will be a good efficiency, but not idle efficiency. That leads us to normal standard.
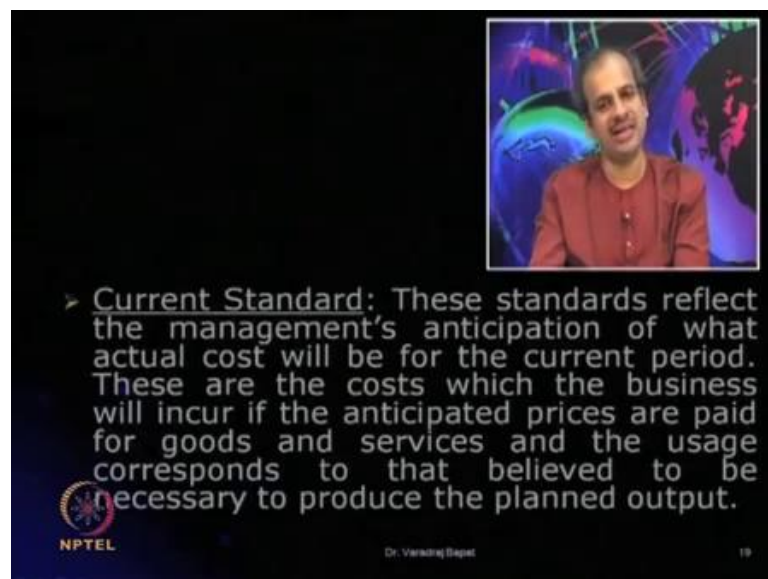
(Refer Slide Time: 06:03)

And you can also have a very, very basic standards.

(Refer Slide Time: 06:07)
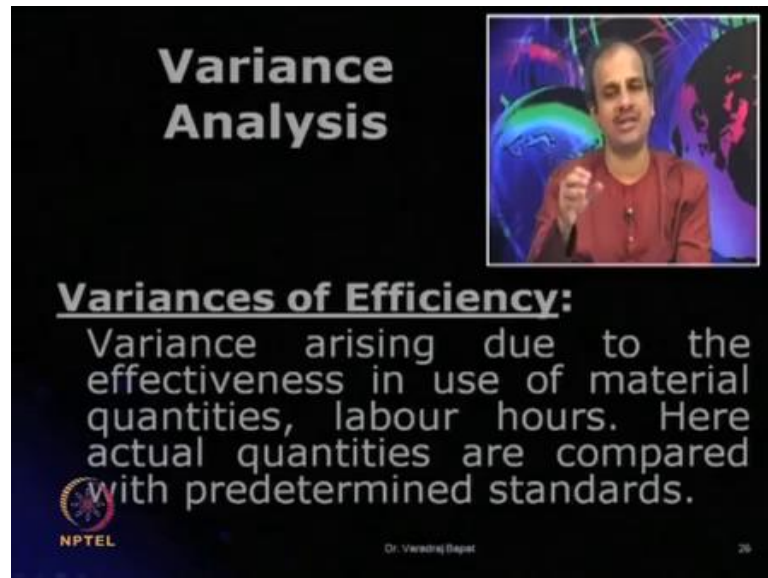
Then, we have current standards. We have also seen variance, variance analysis. The variance is broken down into controllable variances. Then these are the types of variances. Variances can be of mainly of efficiency, price or volume.

(Refer Slide Time: 06:27)
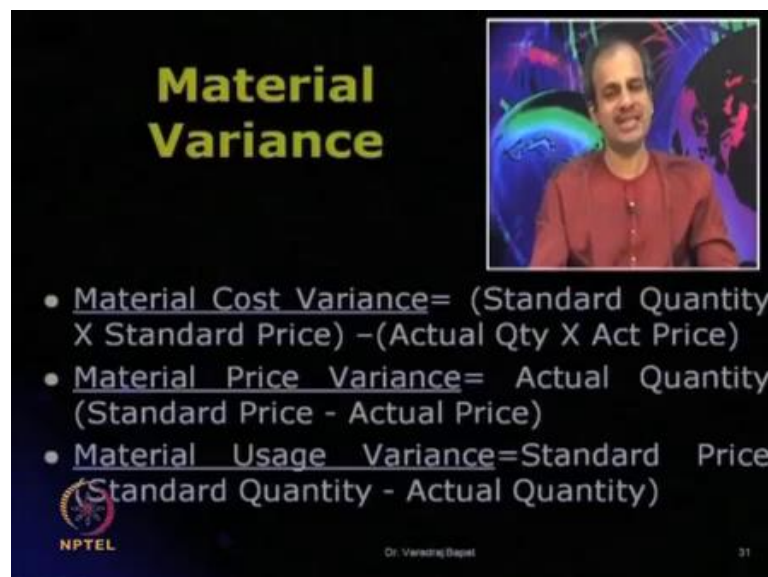

These are the 3 main causes, leading to deviation. Now, we have done for material cost last time. We will look at labor and overheads today.

(Refer Slide Time: 06:35)
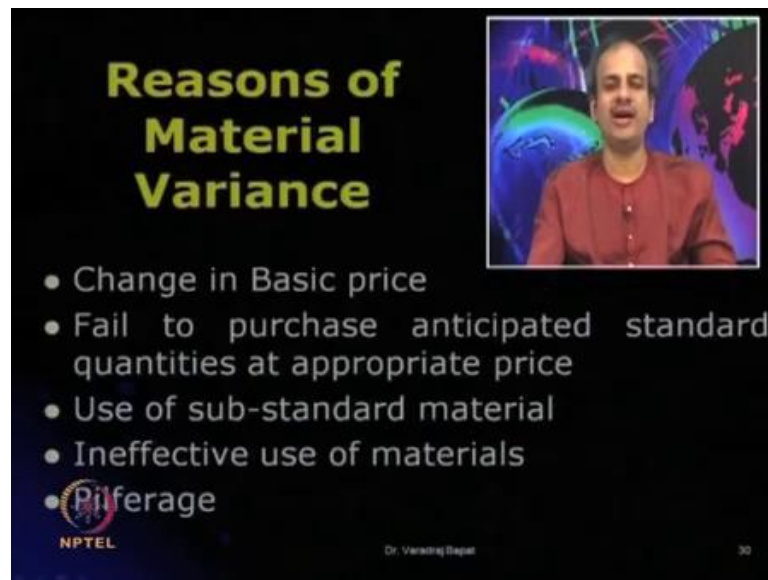
So, up to this, we have done. Now, let us look at labor variances.
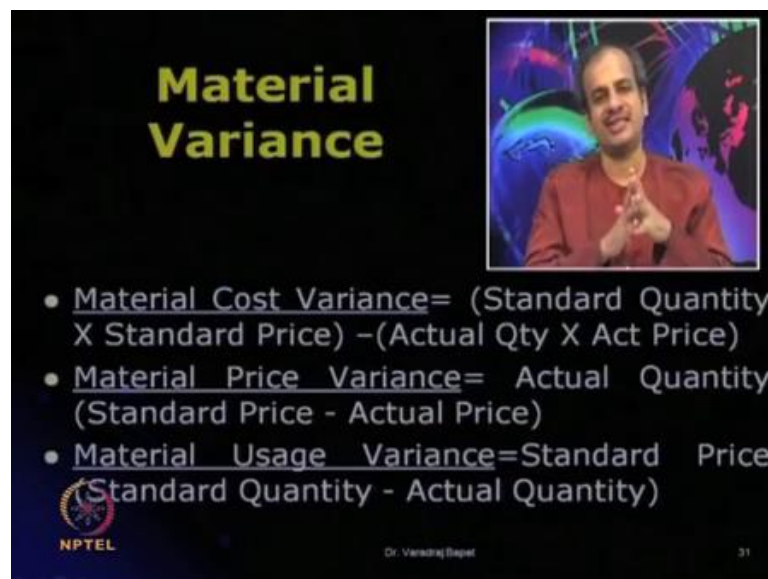
Now, in material variances, we had looked at the reasons.

And then we looked at the formulas. In the same way, just think of, what may cause labor variance? That is, to say to make one unit as per the standard, we take 5 hours. Now, we record actual, in actual, if it suppose, it comes out to be, we have done the same job in 4 hours. What could be the reasons? Those are the reasons for labor variances.

So, can you think of the reasons, which lead to labor variance? Again, there are two possibilities. One is the reason due to which there is a difference in time required or time
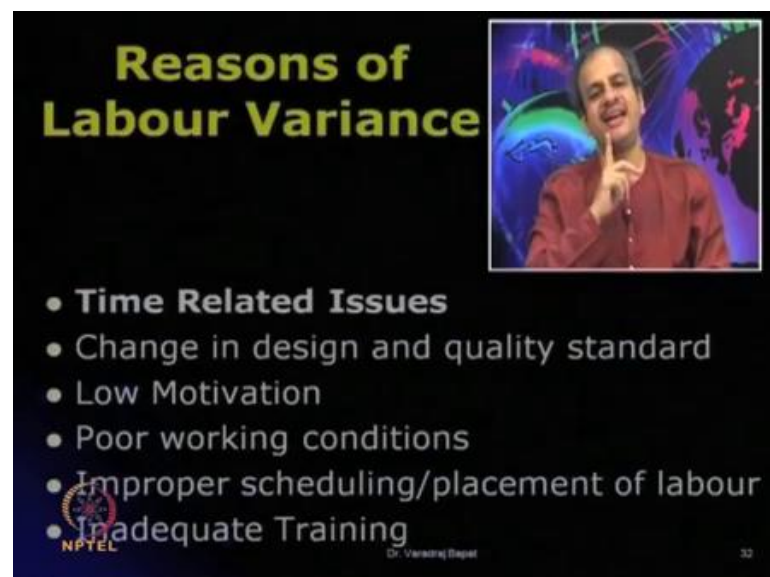
taken. And the reasons, due to which labor rates are different. So, what may cause differences in the time, let us say, you are students. You are learning budgetary control. So, you estimated that to finish this chapter, you will take 5 hours. But, actually within 4 hours you could finish it.

Suppose, it happens, what could be the causes? Why you could do the same work faster. One very important cause is, motivation. If you feel motivated, if you from inside, you feel that, yes you must do it. Then, the work can be done much faster. Same thing is true for the labor working in a factory. If they are de motivated, ((Refer Time: 08:13)) this work is burdened on me. Then, they will do it very slowly.

Whereas, if they feel from within they want to do it fast. Then, due to motivation the work can be done much faster. Another cause could be, what type of equipments they have? If they have good equipments, which are efficient, which are running properly, they can work faster. Whereas, if the equipments are continuously getting stop. They require repair, there are some issues, with the use of equipment.

Then, naturally the worker speed goes down, then the team spirit. Then, there could be reasons like more holidays in a particular month, leading to disturbance of the work schedule. So, due to some or other reasons, time taken may vary. These are one type of causes. The other type of causes, because rate has varied. The wage rate itself has changed. Now, due to what the wage rate can change? I will just show you the next slide.

(Refer Slide Time: 09:18)

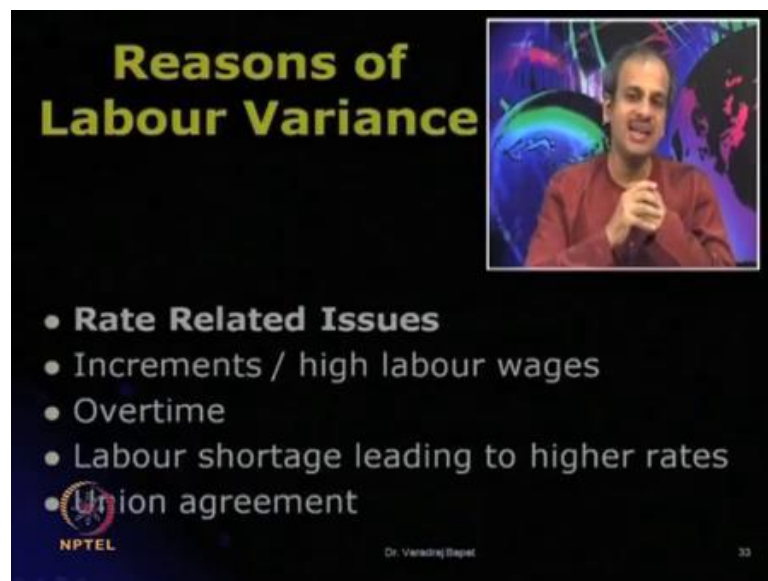I think we have already discussed this time related issue. So, it could be changes in the design or quality standards. So, what happens is then the workers have to study. They have to learn the new design. That takes time. Then, low motivation, poor working conditions, improper scheduling, inadequate training. Of course, I have listed a few causes. There can be many more causes, they can be negative, they can be positive, both ways.

(Refer Slide Time: 09:50)

Then, what could be rate related issues. So, one is increments or high labor wages. Then, over time, when the over time is to be paid, it is paid at a premium rate or at a higher rate. Labor shortage forces, the company to pay higher rate and there might be agreement between union and management. Due to which, the higher rates are now promised. So, these are the reason, why there is a labor variance.

So, mainly two categories, time related and rate related ((Refer Time: 10:24)). Now, from these, can you derive the formulas? I have brought you back to material variance formula. So, that, on the similar lines, you think of formulas for labor cost. So, just have a look at formulas for material cost. I am sure, you can imagine, what will be the formulas for labor cost. Because, they are very similar, they have a same logic.

So, you will first calculate the labor cost variance. You will divide it into labor rate variance and labor usage variance or labor efficiency variance. So, in material cost, we had price and usage. In labor cost, we have labor rate and labor efficiency plus there is

one more variance that is labor idle type. So, labor variance can be divided into rate efficiency and idle type. So, just imagine, what would be the formulas for labor cost variance.

(Refer Slide Time: 11:32)

If you guessed correctly, I hope you can cross check it now. So, we have labor cost variance, which is standard hours into standard rate. That is, you know the standard cost minus actual hours into actual rate, which is the actual cost. So, we compare standard cost and the actual cost to know the labor cost variance. Next is, labor rate variance. In labor rate variance, we compare the rates.

So, within the brackets, we have the standard rate minus actual rate and that is multiplied with actual hours. Because, that is the hours, that actual rate was paid. That is labor rate variance, third is labor efficiency variance. In efficiency variance, we compare standard hours with actual hours worked. And that is multiplied with standard rate. So, if workers work more efficiently, the actual hours will be lesser.

So, as we were seeing the standard hours, suppose are 5, but we can finish the work in 4 hours. It will save 1 hour and we will multiplied by the standard rate to know, how much was the saving, because of efficiency. That is known as labor efficiency variance. The third type, which is unique to labor variances, is idle time. This is idle hours into standard rate. Now, what do you mean by idle time? I think everyone knows. Because, each one of us due to some or other reason, end up spending some idle time.

So, in factory scenario, what may happen is, workers have come, they are ready for work. But, suddenly there is a power failure, it leads to idle time or there is some accident, due to which the whole work gets stopped. There might be some external cause like, material is not available. So, workers sit idle. So, such time is called an idle time. This does not mean that workers are idle and they are not working. That is different. That is efficiency variance.

Here, by idle time, what mean is, beyond the control of workers, there is some external cause, forcing them to stop the work? So, that is known as idle time. So, we look at idle hours into standard rate; that gives us idle rate variance. And labor efficiency variance looks at actual hours worked verses what they should have worked. So, there, within the bracket we have taken standard hours minus actual hours. So, over all labor cost variance is broken down into rate efficiency and idle time.

(Refer Slide Time: 14:22)

Now, let us look at case. So, that, how to calculate labor variances become more clear to you. So, here, I have given a small problem. We are having standard and actual figures for the labor. So, standard time for a job is 2000 hours. Standard rate per hour is 10. Actual time is 1800 hours. Actual wages are paid at 21,600. Idle time, which is included in actual time is 100 hours. So, using this data, we have to compute variances.

Now, think over, how we will compute. So, first variance, which we would like to calculate, is the total labor cost variance. So, much how odd to have to been the wages

and how is actually paid. That comparison will be labor cost variance. Then, we will break down that variance into 3 types. What are those 3 types? As we just discussed, first it could be the issue of rate.

So, we thought of paying at a standard rate of 10, but we might pay more or less. If there is a difference that will lead to rate variance, then there could be difference in the efficiency. So, standard time for doing that job was 2000 hours, we will have to look, whether there is a difference. That difference shows efficiency or inefficiency is known as efficiency variance. And third is the loss cause due to idle time. Now, just think over, how much will be labor cost variance.

(Refer Slide Time: 16:23)

The first variance or the total variance, before going for calculation of variances, it will be better. If we calculate make a table, so try to always make a table, like the way, I have shown it. So, you will record the actual and the standard. So, that at glance, we know the data. You can go back, the standard time is 2000. The rate is 10. So, that has been put in the table.
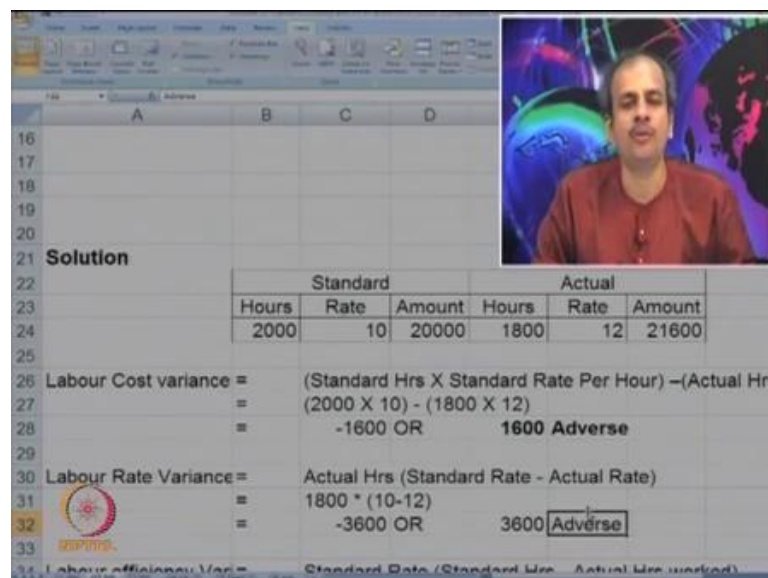
So, 2000 into 10, 20,000 is the standard cost. Actual time is 1800. We do not know the rate, but we know the actual wages paid. So, actual time is 1800 and wages paid are 21,600. So, working back, we come to know that, 12 rupees per hour is the rate, which was paid. So, once, this standard and actual information is available. We can calculate the labor cost variance.

So, you can have a look at the formula, I will make this smaller. So, that the formula is clear to you. So, standard hours into standard rate minus actual hours into actual rate, we have already done this calculation. So, the standard cost is 20,000 and the actual cost is 21,600. So, 20 minus 21,600, we get minus 1600. It is also known as 1600 adverse. So, I have written both minus 1600 and I have also stated adverse.

So, you do not have to write both, you can write it as minus 1600 or say 1600 adverse. So, I think, I will also specify it. So, that it is more clear to you, either it can be written as 1600 minus or it can be written as 1600 adverse. Fine, now this was the total difference in the labor cost. So, we assumed that we would spend 20,000 for doing this work, but we have actually spent 21,600.

So, that 1600 spent more, represents labor cost variance. Now, rate variance, so now, we will break down that 1600 into it is causes. First cause could be rate, as you can see it in the table, very clearly, that as per the norms, we have to paid 10. But, actually, we have paid 12. So, 2 rupees more per hour and we have paid all these for 1800 hours. We have not paid for 2000 hours. So, we do not have to multiply by 2000, we have to multiply by 1800.
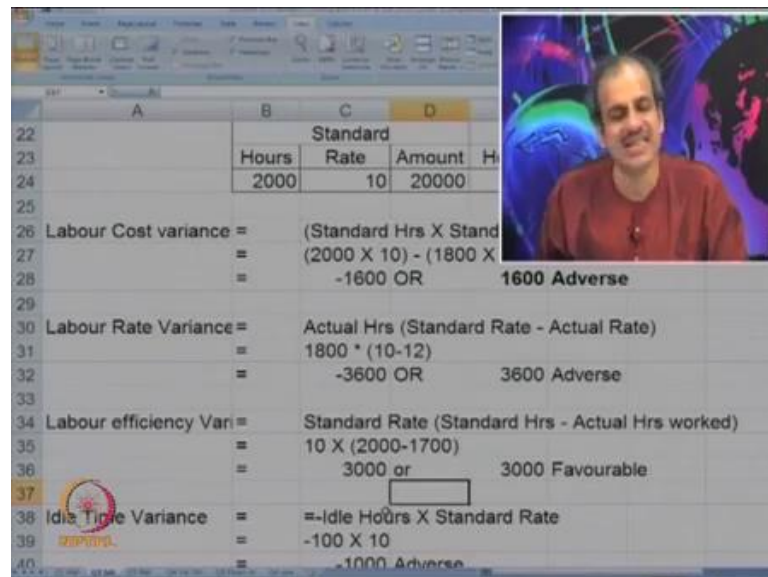
(Refer Slide Time: 19:16)

So, you can see the formula, it is actual hours into bracket, standard rate minus actual rate. In other words it is 1800 into 10 minus 12. So, it is minus 3600 or as we have seen, we can also call it as 3600 adverse. I am just restating it. So, that, it is more clear to you.

Now, what could be the next cause, apart from rate the difference also could be due to efficiency.

So, how much is the difference due to efficiency. You can see that, the work that was allowed 2000 hours, you have done it in 1800 hours. So, this is an efficient functioning, they have saved some time. Over and above that, 100 hours were lost. So, from 1800, it need to remove that 100. So, actually, they work only for 1700 hours. So, they were allowed to work for 2000 for doing this job. But they have worked for 1700, which shows that 300 hours were saved, because of efficiency. That will be calculated as an efficiency variance.
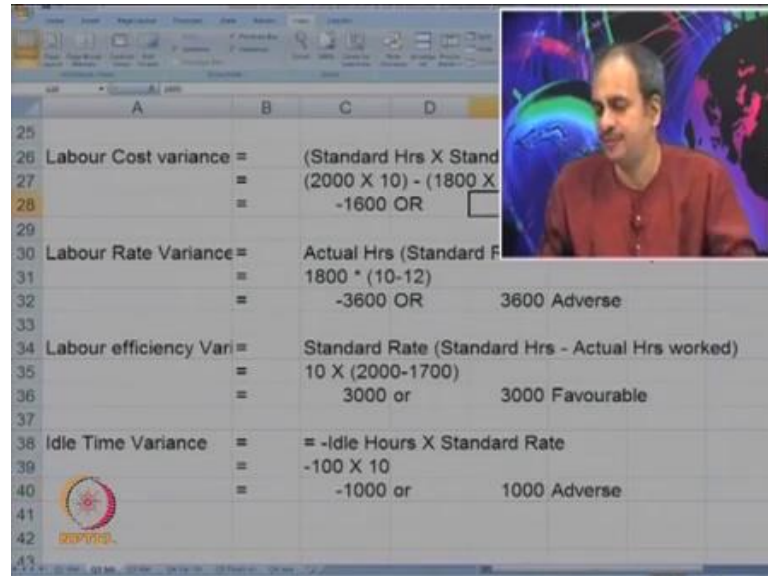
(Refer Slide Time: 20:55)

So, you can look at the variance, labor efficiency variance, it is standard rate into standard hours minus actual hours worked. So, standard hours are 2000, actual hours worked. So, instead of taking 1800, we have removed 100, because that part is lost, because of idle time. That was not lost by the operators or the workers on their own. So, from 1800, we remove 100. That is why it says instead of actual hours, we have used the term, actual hours worked.

So, 2000 minus 1700, so 300 hours were saved, we have multiplied by 10 rupees, which is the standard rate. Now, actual rate is 12, but as per the norms, we should have multiplied by 10, we should paid at 10. So, for efficiency variance, we do not take 12, we take at a standard rate. So, we have multiplied at 10, so 3000 favorable. So, by favorable,

what we mean is, that much of time, was saved our profit is will go up by 3000. So, it is called as 3000 favorable.
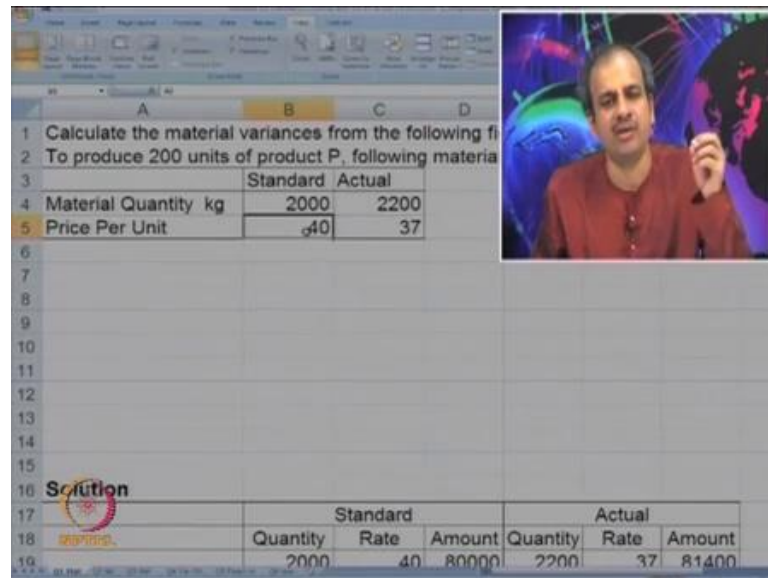
(Refer Slide Time: 22:14)

Now, the last variance, it is for idle time, we know that, 100 hours are lost. So, the formula is idle hours into standard rate. We have just added minus, because ultimately idle time is a loss of time. So, because of idle time our profit goes down. That is why; we say minus 100 into 10. So, minus 1000 or it can also be called as 1000 adverse. So, both the terminologies are fine, you can either say it is minus 1000 or you can say 1000 adverse. Is it fine, are you getting it? So, I hope that, you remember the earlier problem on the material cost as well.

 If not just have a look at it, I am just taking you back, because it will be very clear to you. That both the variances are quite similar, just there is a small change, instead of quantity in material. We call it time, instead of price in material in labor, we call it rate. Have a look at a problem on material cost. So, here, this was done in our last session, we are seeing that to produce 200 units.

The material quantity as per norms was 2000, but the actual consumption was 2200. This quantity could be in some kg's or some unit like that. I will just specify it as kg. So, that, it is more clear to you. So, two make 200 units, perhaps we might have consumed 2000 kg's. The price was 40 or 37, the actual as per the standard; it was supposed to be 40. But, we have managed to purchase that material at 37.
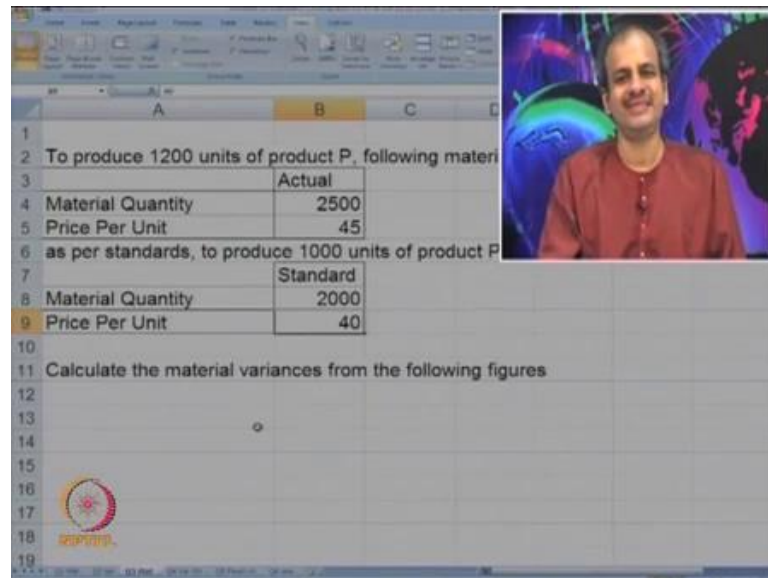
(Refer Slide Time: 24:13)

So, that time also, we had made the table, for comparison of standard and actual, 2000 into 40 verses 2200 into 37. Now, here, you can see that, instead of spending 80, we have spent 81400. So, 1400 minus or 1400 adverse, that was broken into material price variance. So, 40 minus 37, 3 rupees was saved for 2200 kg's. So, 6600 favorable, but on usage, there was access consumption, instead of 2000, 2200 was kg's was used at 40 rupees. So, 200 into 40 minus 8000, so usage variances 6600 minus 8000, 1400 adverse. This is the usage variance. Of course, we had done it last time, but I am just trying to show you that, both the variances are quite similar. In labor, in addition to rate and efficiency, we also have the concept of idle time. That was the only extra point.

Now, let us do one more case, with this these concepts will be even more clear to you. Now, it says that to produce 1200 units of product P, following material was consumed. That is actual, material quantity is 2500 price per unit is 45. Now, as per the standard to produce 1000 units, we are supposed to use quantity of 2000 at a price of 40. Now, with this data, we are required to calculate material variances.

So, how will you calculate, just think over, can we do it, the way did in case 1. Make a table, compare call calculate cost and price, cost price and usage variances. Just try to make the table, when you make the table, note that, there is a difference in the output as well. Because, it says that, as per standard to produce 1000 units, this was permitted. But, actually we have produced 1200 units.

So, if you see carefully, you cannot compare this standard with this actual, because this standard is for 1000 units, whereas actual production has been now 1200 units. So, we will have to make a standard for 1200 units, and then it can be used for comparison.

(Refer Slide Time: 27:20)

So, now look at the standard and actual tables. So, now, I have not copied this 2000 directly. Often, that mistake happens, that is why, I am waiting and telling you repeatedly. So, when you make the standard, it is 2000 into 1200 upon 1000. So, now, the standard has been reset for 1200 units of output. So, I get standard as 2400 into 40. So, 96000 is a standard cost, actual we can directly copy, it is 2500 into 45.

So, that is as given. So, 2400 into 40, 96000 was to be spent, but we have consumed 2500, quantity of raw material and the rate has also increased to 45. So, actual cost is 1,12,500. Now, with this data, I do not think it is very difficult to compute the variances, you already know the formulas. So, have a look at formulas.
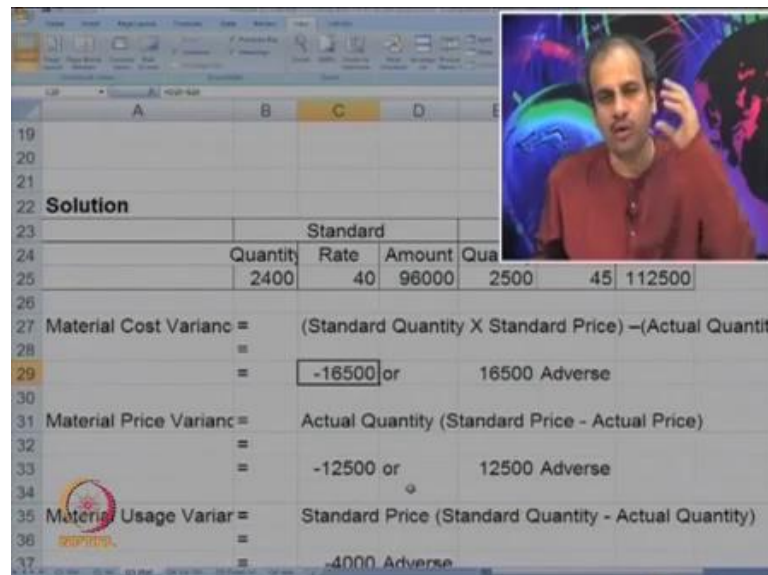
(Refer Slide Time: 28:40)

Now, material cost variance, it is the standard quantity into standard price minus actual quantity into actual price or you can simply compare these two amounts. It is 96,000 minus 11,2500. So, you get minus 1600, I will just rewrite it, for more clarity. So, it is also known as 16,500 adverse.

(Refer Slide Time: 29:21)

Now, let us try to break it into quantity. They how much is the price variance, we will first compare the prices 40 minus 45. So, in bracket, we have standard price minus actual price into actual quantity. So, 40 minus 45 into 2500. So, 5 rupees was saved, 5 into

2500. So, you get 12,500 minus, here wrongly it is written. Favorable, actually it is adverse.

So, anyway, we are rewriting it, for more clarity. So, 1200 is also adverse, 1600 was also adverse. So, total material cost variance was 16,500 of which due to rate, company was forced to pay 12,500 more, so 12,500 adverse.

(Refer Slide Time: 30:31)

Now, let us look at usage. So, instead of using 2400 as per norms, they have consumed 2500, so 100 units more. So, we compare standard quantity minus actual quantity and multiplied by standard price. That is 40 rupees. So, we get 4000 adverse. Now, just, cross check, whether, whatever we have done is correct or no. So, 4000 plus 1250, 12,500; you can get back this 16,500.

Same way, I think for earlier also we can do. So, for labor variances, if you remember, we had calculated these variances. The labor cost was 1600 adverse. Then, that was broken down into rate, which was 3600 adverse. Efficiency was 3000 favorable and idle time was 1000 adverse. So, just take total of these 3 figures or you can take total here minus 3600 plus 3000 minus 1000. So, you will see minus 4600 plus 3000. So, you will get minus 1600 or 1600 adverse, fine.

So, it is good always to cross check, because this labor cost variance is a total variance. It is essentially being broken down into rate efficiency and idle time. In case of material,

our material variance, we had broken down into price and usage, both material and labor variances. Now, let us go to the next variance.

(Refer Slide Time: 32:22)
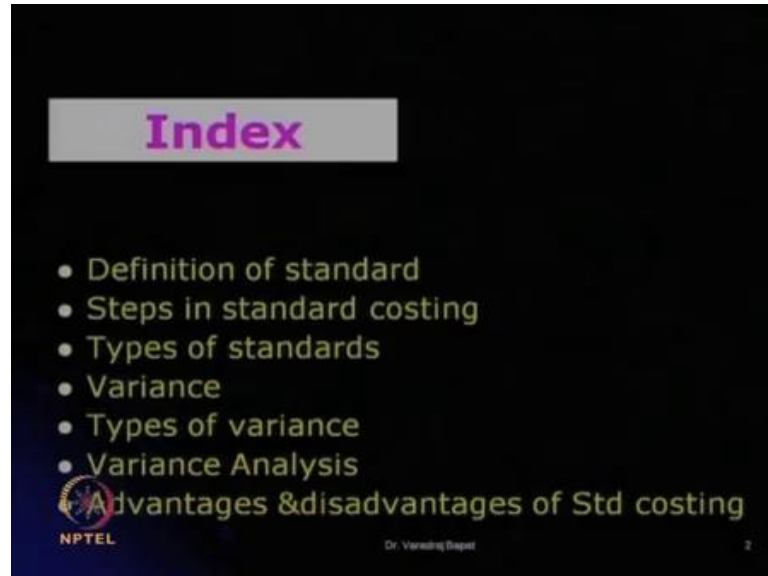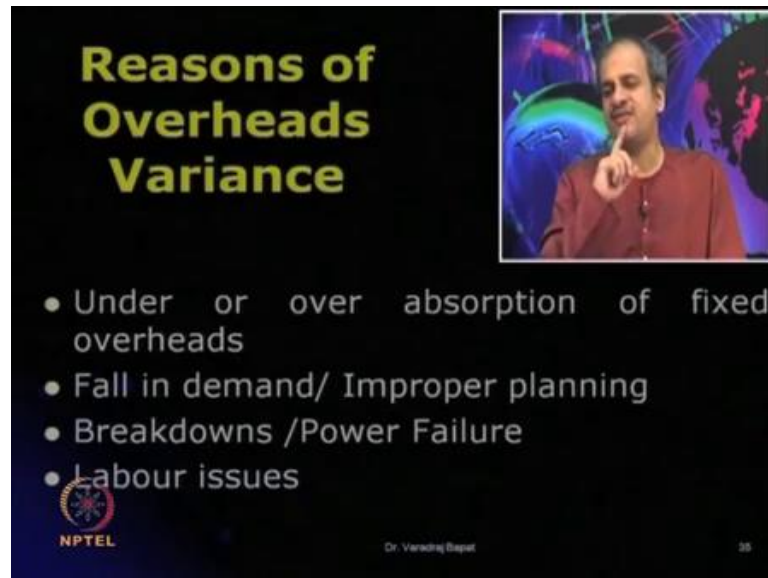
That next variance is known as overhead variance. So, we had already seen material and labor, which are the two elements of cost ((Refer Time: 32:32)). Now, let us look at overheads ((Refer Time: 32:37)). Now, before going for the formula, I would like you to think of the reasons ((Refer Time: 32:45)). The way, in case of labor ((Refer Time: 32:49)), we had first identified reason for labor variances, what could be the reasons for overhead variances. Just think over.

In case of labor, we broke it down into time and rate related issues, can you do it with overheads. What are the examples of overhead costs, say electricity charges, rent, maintenance cost, security cost, these are all overhead costs. Now, the budget for overhead is set in the beginning. Let us say the budget is 1 lakh, if the actual cost is 1,20,000. There is a variance, what could be the causes, just think over, I hope you are getting some causes.

One possibility is the power rates have increased or there is a possibility. That power consumption has increased, which will lead to difference in the electricity charges as budgeted verses as actual. Like that, each of it could have some impact. So, if the rent agreement comes fresh with the higher rent, then there will be a rate change in the rent.

(Refer Slide Time: 34:05)

So, broadly if you try to classify the reasons, one possibility is due to under or, I will just go to the next slide, which will be, I think easily understandable by everyone.

(Refer Slide Time: 34:14)

So, some of the causes could be due to inflation. That the cost itself has increased. If there is no proper control cost or if there is no proper planning, also the cost may increase.

The other possibility of this variance is due to under or over absorption of fixed overheads. Now, do you remember, what is this under and over absorption? Now, what happens is, sometimes the costs are lean to number of units. You make that happens in case of variable overheads. But, many of the costs like, rent remain fixed. So, if you have contracted to rent of 1 lakh and we had planned to make 1000 units.

We estimate that the rent comes to 100 per unit, 1 lakh is a rent, 1000 was the number of units as budgeted. So, the cost is 100 per unit. Actually, rent cost remains at 1 lakh. So, variance, but if the number of units fall down, instead of 1000's, suppose number of units become 800. Then, what will happen, since we are charging at 100 rupees per unit. On 800 rupees, we will recover only 80,000 of rent, but the actual rent is 1 lakh.
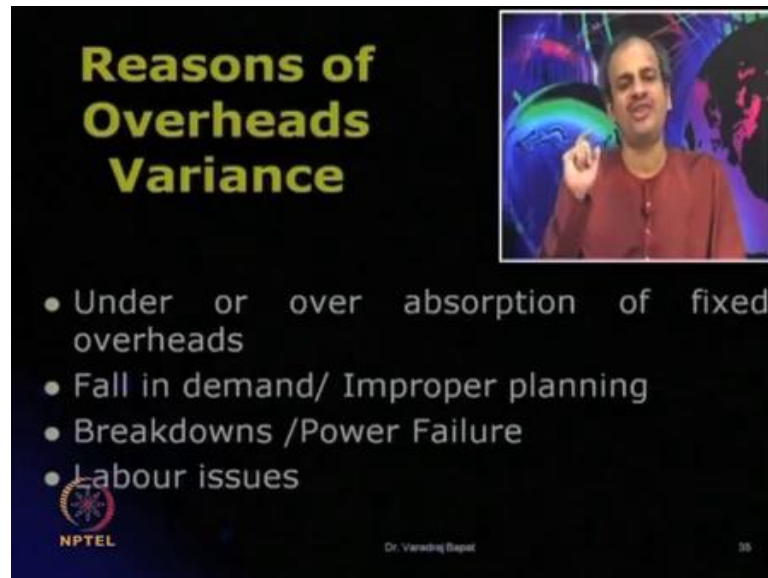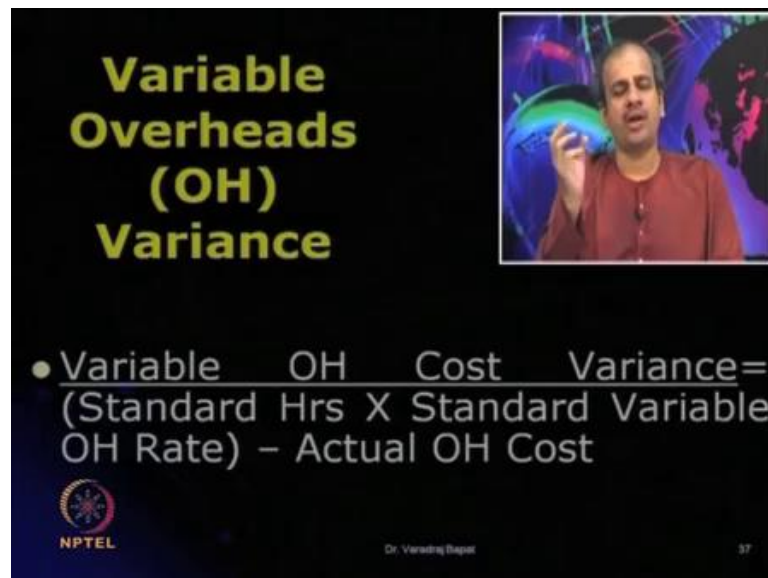
So, it will lead to difference of 20,000. That is the difference, because of under or over absorption. If the numbers of units increase beyond the budged, exactly opposite will happen. That we will recover more rent, but actual rent remains less ((Refer Time: 36:12)). So, in case of overheads what happens is, one type of causes, what we saw earlier. Because, of inflation, lack of control or lack of planning. Wherein, the budgeted cost, itself gets exceeded.

Or sometimes, if you are plan control is good, budgeted cost is brought down, actuals are less than the budget. But, the other type of causes is because of under or over absorption. So, if there is a difference between budgeted units and actual units. Then, that will also

cause disturbance in the absorption of over head cost. So, such causes could be fall in demand or improper planning, improper planning in the sense improper estimation, break downs, power failures, labor problems.

So, for any reason, if the actual units and the budgeted units do not match, it will lead to overhead variances. Now, what will be the formulas, in case of overhead variances, we have two types. We have variable overheads, we have fixed overheads.

(Refer Slide Time: 37:15)
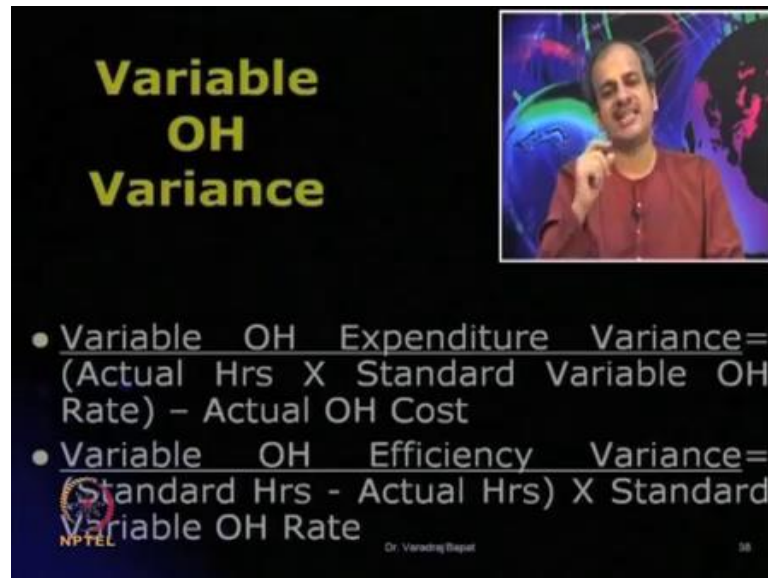
Now, let us look at the formula. Over all is, I think, it is very simple for the variable overhead cost variances. We take standard hours into standard rate; that will be the standard cost. And what should have been occurred minus the actual cost. That is a variable overhead cost variance.

Now, this can be broken down into expenditure and efficiency. Expenditure variance is, we look at, how much should have been sent and how much actually has been sent. So, it is on actual hours into standard variable overhead rate minus the actual overhead cost. The other possibility is, there is a difference in the efficiency. So, we compare standard hours minus actual hours into standard variable overhead rate.
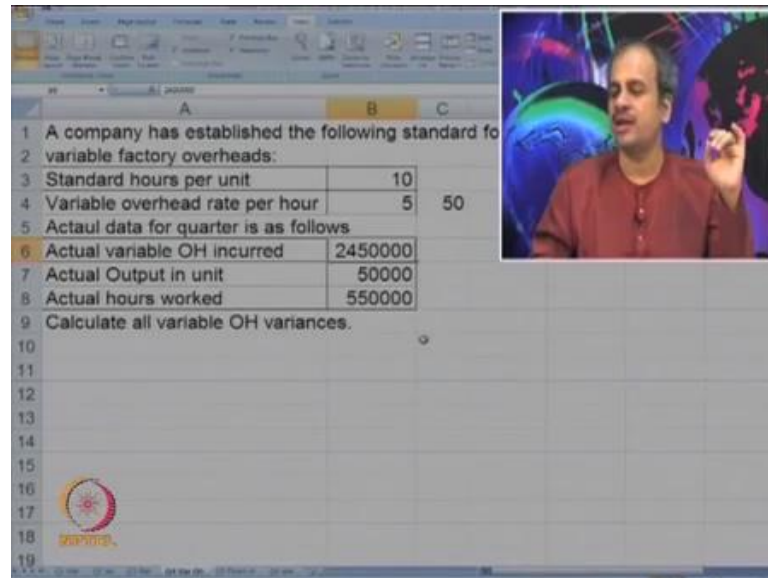
If you look at this overhead variance, it is quite similar to labor variance, which we have seen. In labor cost also, we had two variances. We had rate variance and efficiency variance, if you remember. So, in variable overhead, it is similar. One of the causes is, because of efficiency. For example, what may happen is, some work could have been in 5 hours, but we did not do it efficiently, we took 6 hours.

So, at what will happen, one is more, time is spent. So, more wages, but along with that, what also happens is, there is more consumption of electricity, more consumption of other facility. So, we must have completed the work in 5 hours. But, we took up 6 hours. So, for that, 1 hour extra variable overheads are encored, that is because of the efficiency. So, it is known as variable overhead efficiency variance.

So, you can see here, we have compared standard hours minus actual hours and multiplied by standard variable overhead rate, getting it. The other cause is, because the expenditure itself has increased. Like for example, if electricity rates have gone up. So, there for standard we take actual hours into standard rate and we just subtract it with the

actual overheads. So, if the actual rates have exceeded, the actual overhead cost will increase and that will show some variance, getting it. Now, let us look at a case on variable overheads, with that, it will be, more clear to you.
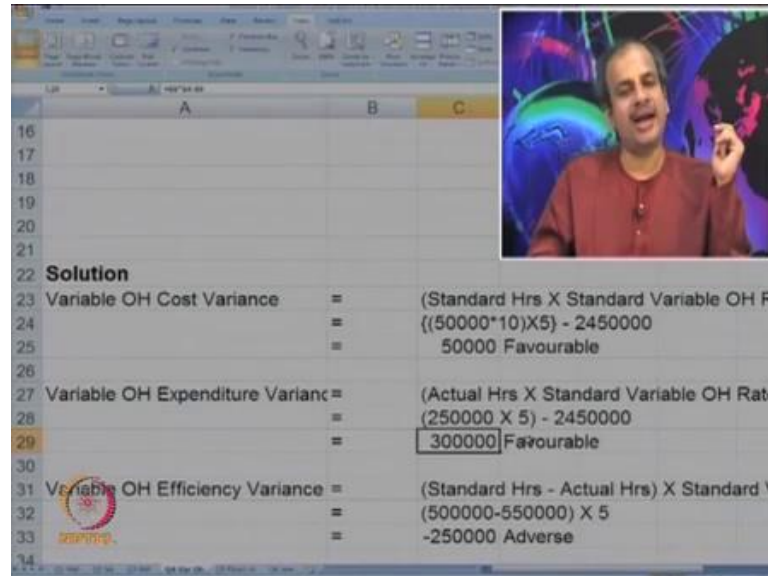
(Refer Slide Time: 39:55)

Read the case carefully. So, standard hours per unit was given at 10. And variable rate, overhead rate, per hour is estimated at 5. Now, when the actual data came, the actual variable overhead rate incurred are 24 lakhs, 50,000. Actual output in units is 50,000 and actual worded hours are 5 lakhs, 50,000. Now, using this data, try to calculate various variable overhead variances.

Now, how to do it, just think over? So, now, we have the actual cost, which is 24 lakhs 50,000. Now, we looking at the actual production of 50, we should look at, how much cost should have been encored. That is our standard cost. That we will compare with the actual, which is 2450, which will give us variable overhead cost variance. And then we will break it down into expenditure and efficiency.

So, how much will be the cost variance, are you able to guess, could you calculate looking at the data, it is very simple. I think, if you just look at it very carefully, you can get it. So, if you look at the standard figures on top, you will realize that, it is 10 into 5. So, 50 rupees is the cost variable cost for 1 unit. Because, to make 1 unit it takes 10 hours and variable overhead rate is suppose to be 5 per hour. So, 50 rupees becomes the

standard cost per unit and actual output is 50,000. So, 50,000 into 5, 25 lakhs is a standard variable overhead cost. We have encored 2450000.

(Refer Slide Time: 42:15)

Now, let us look at the formulas. So, we have looked at standard hours into standard rate. The standard hours was to make 50,000 units. It is at 10 per unit. So, we are permitted to have 5 lakhs hours at 5 per unit. So, 50,000 into 10 into 5, that is 25 lakhs and we have actually encored 2450000. So, 25 verses 2450, we get 50,000 favorable plus 50, so 50 favorable.

Now, we can break it down into expenditure. So, part of it is because the cost per hour itself has been brought down. So, we can look at the actual hours, see the actual hours consumed was 550000 and 5 rupees per hour is a rate. So, 550 into 5, that was something, which we could have encored on. So, actual hours into standard rates and our variables, which are actually encored, are 550000.

So, we take 2 lakh 50 into 5, from where has this 250 arrived it is 50 into 5. So, 50,000 unit is encored, is produced and we were allowed to use consume at 5 rupees. So, we have 250 into 5 minus 2450000 which is already given. So, 3 lakhs favorable is an expenditure variance. Now, let us look at efficiency variance. Now, efficiency as the name suggests focuses on number of hours.

So, standard hours are 50,000 into 10, means we could have spent 5 lakhs hours, but we have spent 550000 hours. So, 5 minus 550, so 50,000 hours more into 5. So, 2 lakhs 50 minus or we can say 250 adverse. And expenditure was 3 lakhs favorable. So, minus 250 plus 3 lakhs, you can say we get 50,000 favorable, which is our cost variance. So, variable overhead cost variance was broken down into efficiency and expenditure.

Now, let us try to understand fixed overhead variance. If variable overhead is very clear to you. Let us go for fixed overheads. Now, as we did for material and labor, you just have look at, what are the causes. So, in case of fixed overheads, one cause was difference in the number of units. Then, the other cause is, because could be inflation lack of planning and so on.
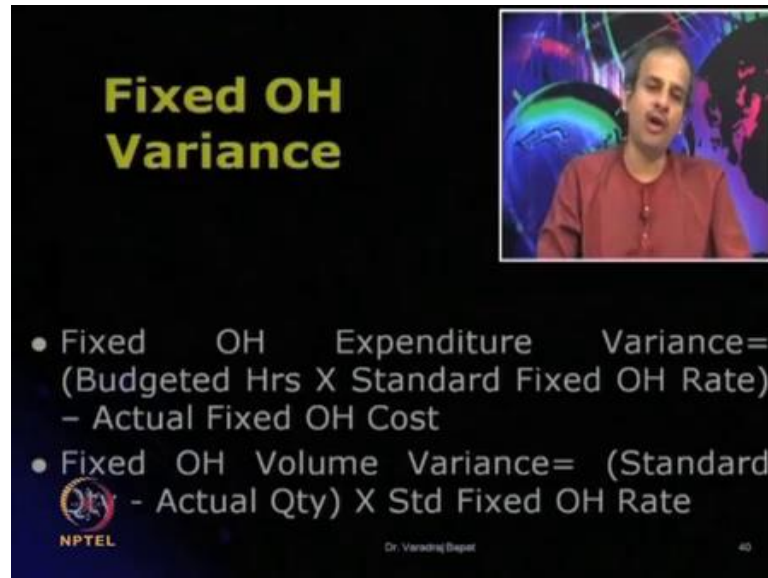
(Refer Slide Time: 45:40)

So, this is the formula for fixed overhead cost variance, which is the total cost variance. It is absorbed overheads minus actual fixed overheads. Now, the question comes is, what is absorbed overhead, can you think over, what is absorbed. So, looking at the number of units, which were produced? In our examples earlier, I was trying to tell you that, if you produce 1000 units, we pay rent of 1 lakh.

So, we had in mind a rate of 100 per hour, which is called as absorption rate. So, based on the actual units, if our actual unit is are only 800 will multiply 100 by into 800. So, instead of 1000 units, we produce 800 units. So, 800 into 100, we have absorbed overhead of 80,000. If your actual rent remains at 1 lakh, there will be a difference. That

difference is known as fixed overhead cost variance. Now, this cost variance can be broken down into it is causes. What are the causes, the major causes are because of efficiency or because of expenditure or because of volume.

(Refer Slide Time: 47:08)

So, first formula is for expenditure variance. You can see fixed overhead expenditure variance. It is budgeted hours into standard fixed overheads minus actual fixed overheads. So, at budgeted rate, we see that, if budgeted hours were the time as per the budget was consumed. And rate also, if you take standard; that becomes the budgeted overheads minus actual overheads.

Let us say expenditure variance. Then, we look at the volume issues, so standard quantity minus actual quantity. So, if we take a difference in two quantity and multiplied by the standard overhead rate. That is a volume variance. So, fixed overheads, we tried to break into expenditure and volume. Now, here, today we have done 4, 5 important types of variances. First, we did recap up to material variance.

Then, today, we have discussed reasons for labor variances. We have also seen the formulas for labor variances. And we have done, one case on labor variance, are you throw with it. Now, we have also done, one case involving a different type of material variance. Wherein, the standard units and the actual units were different. So, we have reset the standard, and then calculated material cost variances.

Then, in later part, we have discussed variable overhead variances and we have also done one case on it. And just now we have seen the formulas for fixed overhead variances. We will look at the cases on fixed overhead variances and we will also discuss the sales variances in our next session.

Thank you so much.