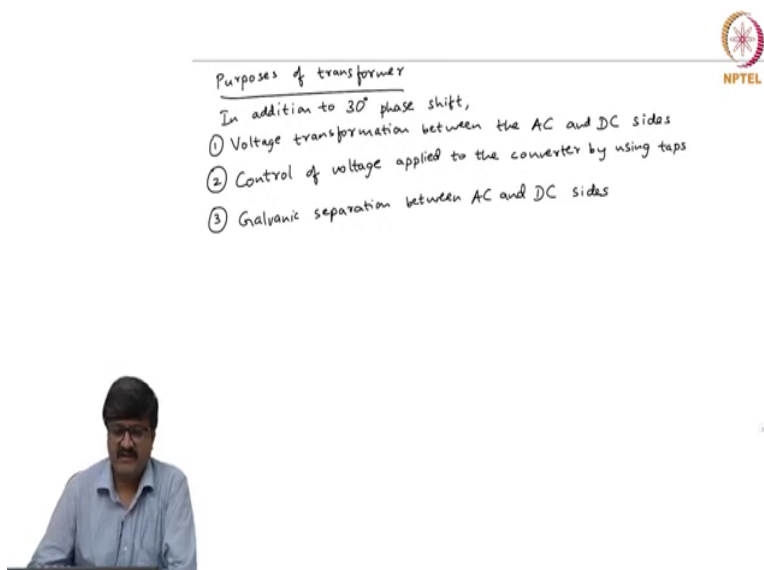



DC Power Transmission Systems
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Lecture – 49
Purposes of transformer

So, we saw that there are two transformers in a 12 pulse converter; one is wye wye transformer, the other one is wye delta connected transformer. So, the purpose of having a transformer in a 12 pulse converter is to get the 30 degree phase shift, but there are other purposes. So, the transformers actually serve a few other purposes.

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Purposes of transformer

In addition to 30° phase shift,

- ① Voltage transformation between the AC and DC sides
- ② Control of voltage applied to the converter by using taps
- ③ Galvanic separation between AC and DC sides

Let us see what are the purposes of having a transformer. So, we already know that there is a necessity of a 30 degree phase shift which will result in cancellation of some of the harmonics. So, in addition to 30 degree phase shift, there are a few other purposes served by a

transformer. One is voltage transformation between the AC and DC sides. So, by choosing the number of turns of the windings, one can get the required voltage transformation between the AC and DC sides.

Then there is also a possibility of control of voltage by using taps. So, one can control the voltage applied to the converter by using the taps on the transformer. So, control of voltage applied to the converter by using taps in the transformer. Then transformer used in this case also serves the purpose of isolation or galvanic separation, Galvanic separation between AC and DC sides.

So, these are the purposes of the transformer that is used in a 12 pulse converter.