Session: High Voltage Distribution System through AB Cables

Learning Objectives	Evaluation Criteria
Explain the installation and important components of a High Voltage Distribution System	Interactive Questioning

Duration 30 Minutes

Resources PowerPoint Presentation, Whiteboard, Markers, Screen and Projector

Facilitator's Notes In this session, use video snippets to take the participants through an interactive presentation and explain to them in detail the installation of a High Voltage Distribution System and its important components.

End of Note

1. Tell:

Welcome to the video presentation on "High Voltage Distribution System through AB Cables".

Facilitator's Notes:

- Display the slide
- Read out the objectives and ask learners to note them down
- Inform them that they will be asked questions in between the session

End of Notes

2. Tell:

By the end of this session, you will be able to explain the installation and important components of a High Voltage Distribution System.

3. Tell:

Before we begin the session, let me ask you a few questions.

Ask:

What do you mean by HVDS?

Possible Response:

- High Voltage Distribution System

Ask:

Where can we use HVDS?

Possible Responses:

- Transformers

- Three phase lines

Tell:

That's correct. HVDS is High Voltage Distribution System used in transformers where high voltage is required. Each HVDS can provide power supply at least to 5 houses.

Let us first look at the benefits of a High Voltage Distribution System.

4. **Tell:**

The benefits of a HVDS system are:

- It has high reliability as there are no bare conductors
- Number of faults is small compared to bare conductor lines
- Technical losses are low
- No theft is possible at 11000-voltage lines

5. **Tell:**

Let us now see how power supply is given from a High Voltage Distribution System.

HVDS transformers are first installed in front of the houses. From each HVDS transformer, service connections can be given to at least 5 houses.

Facilitator's Note:

Click to play the video.

6. **Tell:**

HVDS system provides consumers proper voltage. Thus, the Aggregate Technical and Commercial or AT and C losses are minimised.

Facilitator's Note:

Continue to play the video.

7. **Tell:**

Let us look at the High Voltage Distribution System. Here, the electricity distribution voltage is 11000 volts. It is being supplied through an Aerial Bunch Cable or ABC.

Continue to play the video.

8. **Tell:**

The distribution transformer is installed at the doorstep of the consumer for stepping down voltage to the usable level.

Facilitator's Note:

Continue to play the video.

9. **Tell:**

What you see in front of you is a single-phase HT AB cable, which is connected from the pole.

Facilitator's Note:

Continue to play the video.

10. Tell:

Here, the terminal point is connected through a DD fuse and distribution transformer's bushing. The Lightening Arrester or LA provides protection from lightning.

Facilitator's Note:

Continue to play the video.

11. Tell:

These are the two terminals of the transformer – one is neutral and the other is phase terminal.

Facilitator's Note:

Continue to play the video.

12. Tell:

The connection, which goes from the phase terminal to the consumer's meter through the distribution box, is connected to the Distribution Board.

Facilitator's Note:

Continue to play the video.

13. Tell:

Here, you can see the earthing for LA. Earthing is also provided for the messenger wire of AB cable.

Facilitator's Note:

Continue to play the video.

14. Tell:

You can here see the earthing cables going into the earthing pit.

Facilitator's Note:

Continue to play the video.

15. Tell:

Let us now look at each component of High Voltage Distribution System in detail.

Facilitator's Note:

Click to play the video.

Tell:

Suspension clamp is installed on the messenger of the Low Voltage Aerial Bundled Cable or LV ABC. It is used when there are small angle deviations between poles.

16. Facilitator's Note:

Continue to play the video.

Tell:

Anchoring clamp is installed on the messenger wire of HV ABC and for the dead end application.

17. **Facilitator's Note:**

Continue to play the video.

Tell:

It is to be noted that earthing or grounding is very important in HVDS. This is because the single-phase transformer's primary winding is connected only to the phase.

Tell:

With this, you have seen the video presentation on installation of an HVDS system and its important components.

Key Learning Outcomes

18. **Tell:**

Let us now quickly recollect the key points of this session.

- HVDS is the short form of High Voltage Distribution System
- Each HVDS transformer can provide service connections to at least five houses
- Distribution transformer is installed at the doorstep of the consumer for stepping down the voltage to a usable level
- The components of HVDS include:
  - Suspension clamp and
  - Anchoring clamp