PSPP

ASSIGNMENT-1

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1 CSE-B

Frequent Transformer Failures at Parthasarathypuram

Transformers are electrical component that change voltage through electromagnetic induction. As the magnetic field lines of force (flux) build up and collapse with the changes in current passing through the primary coil, the current is induced in another coil called the secondary. The secondary voltage depends on the turn ratio of the transformer. If the secondary coil has more turns than the primary, the secondary voltage is higher and vice versa.

The transformers near homes are step down transformers. These transformers take in the high voltage lines from the power source and convert them to low voltage, high current lines for homes to use. The high voltage line possesa problem. They are lethal to birds that sit on them and if nearby trees' branches push one high voltage line onto another, they can short out and the power will go out.

In my area, the transformer is placed next to a compound with a lot of trees. Often, these trees' branches cause shorts near or at the transformer, causing the power to go out.

My solution to this problem is as follows:

-> Build the transformer in such a way that it will not be affected by trees and is long lasting.

-> Find another location for the transformer away from trees. (if possible)

-> If the transformer does fail due to un-avoidable reasons, attend to the problem immediately and respond to the phone calls from affected people instead of ignoring them.

-> Take appropriate measures to prevent birds from sitting on the high voltage lines.

-> Set up a feedback loop system that tries to fix any problem with the transformer and alert the officials if it can not fix the problem.

Algorithm:

1. Start.
2. Find a suitable location for the transformer away from any trees (if possible).
3. Take measures to prevent birds from sitting on high voltage power lines.
4. Build the transformer in such a way that it will not be affected by trees and is long lasting.
5. If the transformer does fail due to unavoidable reasons, attend to the problem immediately and respond to phone calls from affected people instead of ignoring them.
6. Set up a feedback loop system that tries to fix any problem with the transformer and alert the officials if it can not fix the problem.
7. Stop.

Pseudocode:

FIND a suitable location for the transformer away from any trees (if possible).

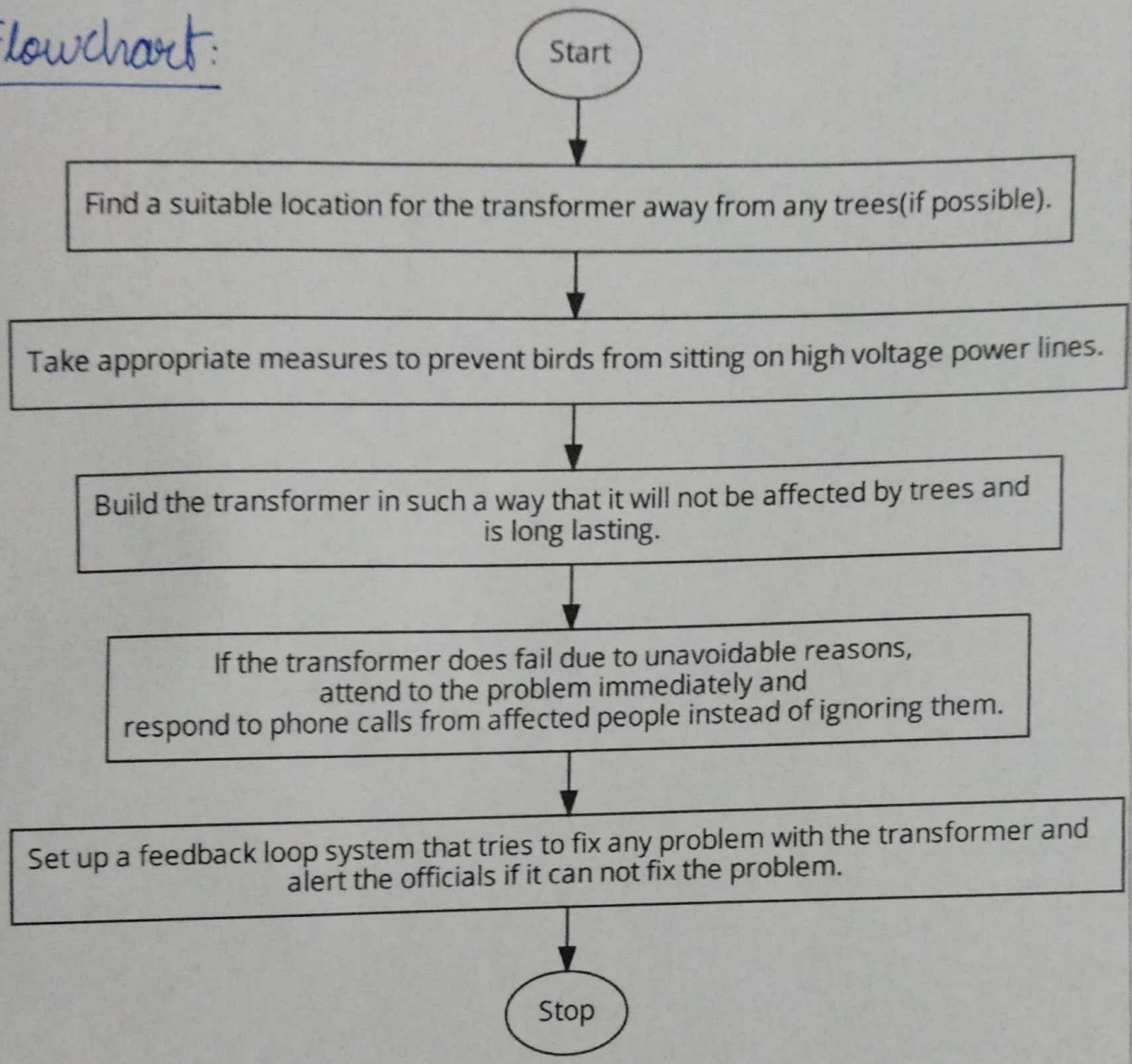
TAKE measures to prevent birds from siting on high voltage power lines.

BUILD the transformer in such a way that it will not be affected by trees and is long lasting.

IF the transformer fails due to unavoidable reasons, attend to the problem immediately and respond to phone calls from affected people instead of ignoring them.

SETUP a feedback loop system that tries to fix any problem with the transformer and alert the officials if it cannot fix the problem.

Flowchart:


Start
Find a suitable location for the transformer away from any trees(if possible).
Take appropriate measures to prevent birds from sitting on high voltage power lines.
Build the transformer in such a way that it will not be affected by trees and is long lasting.
If the transformer does fail due to unavoidable reasons, attend to the problem immediately and respond to phone calls from affected people instead of ignoring them.
Set up a feedback loop system that tries to fix any problem with the transformer and alert the officials if it can not fix the problem.
Stop