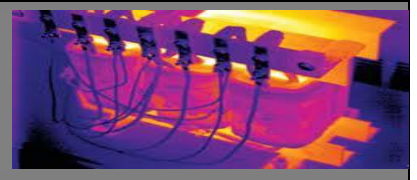




Transformer Connections

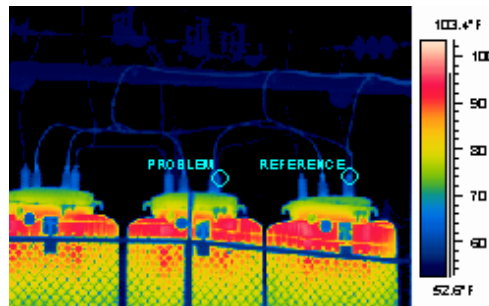


- Early warning signs of broken gear teeth are subtle but can be found with the right tools.
- Replacing parts that are about to fail saves everyone from unnecessary headaches.

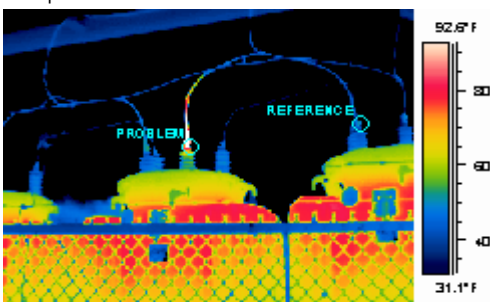
Using infrared on transformer connections

Transformers are an area where loose connections frequently occur. Loose connections typically occur in transformers because they are located outside, where temperature changes can be excessive, and due to thermal stresses being applied when large HP motor are started and stopped. Below is an example of a loose connection found on the output lead of a transformer. The transformer in this example feeds a 1000 HP motor which operates a ventilation fan for an underground mine. The loss of a ventilation fan can cause the mine to be evacuated resulting in lost production and increased labor costs.

The First infrared picture shows the center transfer lead with a problem area that is 152 degrees F hotter than the reference connection. This could cause immediate loss of power by the lead burning off or possible loss of the transformer. Work was immediately scheduled on the transformer to correct the problem.



The infrared picture above shows one of the most important components of any maintenance program, the follow up of work completed. A good Infrared program must have a follow up inspection of the work completed to ensure proper actions were taken and no further actions are required. The infrared picture above shows that all connections are now within 1.3 degrees F of each other. Loose connections and burnt areas were found on the connections and leads. All connections were cleaned and re-entered. This infrared test resulted in a good power supply being made available for the 1000 HP motor and a safe ventilation system for the employees at the operation.



**Spend a little money
now to save big
money later.**

This picture shows the cracks found in the fan housing

Any questions feel free to contact Larry Massey
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