



# ENERGY EFFICIENCY PROGRAMS

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**Knob & Tube White Paper**

Income Qualified Offering

7-12-18

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## Goal

The intent of this publication is to provide direct guidance surrounding the wiring type referred to as “Knob and Tube” as it relates to Ameren Illinois Energy Efficiency Program’s Residential Income Qualified Offering and associated documentation. This guidance will direct participants (Program Ally and Program Staff) working on a project as to how to handle situations as they arise in the field. The intent is to provide safety while still being able to deliver energy efficiency. Common sense is required with all judgements, please contact your program point of contact if necessary.

## Definition

Knob and Tube wiring is a pre-1950 style of wiring is characterized by two separated strands of insulated wire that run through ceramic tubes when passing through framing members and ceramic knobs when being attached to a framing member. When electricity flows through the wires there is resistance to the passage of the electrons. This resistance builds up heat that depends on surrounding air space for dissipation.

## Reference

This publication is referencing the ‘Energy Audit Inspection Disclaimers’ form located on the Ameren Illinois Energy Efficiency Program website as its foundation, as pictured below:

<b>KNOB &amp; TUBE WIRING</b> <input type="checkbox"/> <b>Applicable</b> <input type="checkbox"/> <b>Not Applicable</b>
Evidence of Knob & Tube wiring has been observed in the following locations: <input type="checkbox"/> Attic <input type="checkbox"/> Walls <input type="checkbox"/> Basement
Indications of “knob and tube” wiring were discovered. This old style of wiring involves individual wires that are run through walls and ceilings in a house, with ceramic “knobs” and “tubes” to prevent contact with wood framing. The knob and tube wiring that has been noted may or may not appear to be active. Even if the observed wiring appears to be inactive, there may still be active knob and tube circuits hidden inside walls or other inaccessible areas of the house. Program guidelines require that you must have the home checked by a licensed electrician and certified as being free of any and all active knob and tube wiring, before insulation and/or air sealing work can be done. Your licensed electrician will need to certify in writing the absence of any knob and tube wiring by filling out and submitting a signed copy of this document to the Home Efficiency Program in order to verify the absence or inactivity of the knob and tube wiring in the areas of your home where we are proposing insulation to be installed. Due to the liability involved in signing such a form, we suggest you show or describe this form to your electrician before hiring him to inspect your home to be sure he / she is willing to sign it. (Any additions, deletions or other alterations will render this form invalid).
<b>IMPORTANT:</b> <i>The completed certification form at the end of this document MUST be received by the Home Efficiency Program at the address listed below before a Contract is issued for energy-saving insulation and/or air sealing work.</i>

## Guidance

This section will provide a breakdown of the Energy Audit Inspection Disclaimers detail. The detail has been broken into four “items” as indicated by the rectangular boxes surrounding them above.

### Item 1 “Heading”

The heading for this detail shall be marked as “Applicable” if any of the boxes are checked in the item below it (Item 2). It is also best practice to mark this section as “Not Applicable” if no evidence of knob and tube was identified as proof that this item was discussed and reviewed by the customer.

### Item 2 “Locations”

Conditions that qualify as evidence are

- a conducting wire from knob and tube style electrical wiring
- a porcelain “tube” insulator

- a porcelain “knob” insulator

If any of the above evidence is found at the residence, mark the appropriate location box (Attic; Walls; Basement). If evidence is located in the Attic or Basement, the “Wall” box must be checked.

### Item 3 “Disclaimer”

The interpretation for this item allows for the use of observation to determine the exact requirements prior to any insulation work taking place.

- If evidence of porcelain insulators has been found in the basement or attic, but no conducting wire is in the area to be insulated then insulation work is okay to proceed with. The walls must be cleared as safe by a licensed electrician prior to any work being completed in that area. The licensed electrician must completely provide the required information in *Section 4: Proof of Remediation* of the Energy Audit Inspection Disclaimers after the area has been made safe.
- If evidence is determined to be a conducting wire, then work may be performed in the attic and/or basement if the final installation of materials is minimum of 12” away from the conducting wire and the act of installing the material will not bring it into contact with the conducting wire (eg. Blowing fibrous insulation over the top of a conducting wire, even though the final installation level will be greater than 12” away). Caution should always be exercised while working around **any** electrical wiring.
- If evidence determines that other locations like the attic and basement have conducting wire that will not be a minimum of 12” away from the final installed insulation, then the licensed electrician must completely provide the required information in *Section 4: Proof of Remediation* of the Energy Audit Inspection Disclaimers after the area(s) has been made safe.
- If no evidence is found, the project can continue and this section does not require to be completed. It is best practice to mark the “Not Applicable” box in the heading area to show that the items was specifically referenced and determined not to be an issue.

### Item 4 “Reporting Requirement”

This last item discusses when documentation is required regarding knob and tube wiring. The program knows that some homeowners are hesitant to pay for inspection and/or remediation of wiring issues prior to knowing if they have an approved project. As such, the Ameren Illinois Energy Efficiency Program operates in good faith with their program allies and their professional experience throughout our partnership and realizes there may be times that the signed assurance from the electrician may come during the incentive request for the project instead of during the work scope approval. Please make a note along with the project work scope if this is the case in order to avoid potential disciplinary repercussions.