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G87-846 Electrical Systems for Agricultural Buildings (Checklist)

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Electrical Systems for Agricultural Buildings
(Checklist)

This NebGuide is a checklist to help in evaluating both existing and new electrical installations for agricultural buildings.

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Good electrical system design and installation is required to assure a safe, efficient system. Good practices and appropriate equipment are essential.

Each item in the checklist is keyed to a discussion of the subject in a companion NebGuide, G87-845 Electrical Systems for Agricultural Buildings (Recommended Practices).

A "no" response to any question indicates an area requiring changes or additional attention. Negative answers identify potential problems.

**Check One**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Was all wiring installed in accordance with minimum standards as set forth in the current edition of the National Electrical Code?</td>
</tr>
<tr>
<td></td>
<td>Is all equipment listed by a recognized testing laboratory?</td>
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<tr>
<td>2.</td>
<td>Was the electrical system installed by a licensed electrician?</td>
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<tr>
<td></td>
<td>Does each building have a single electrical service entrance?</td>
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<tr>
<td>3.</td>
<td>Was the electrical system inspected by an electrical inspector?</td>
</tr>
<tr>
<td></td>
<td>Does the service entrance contain a main breaker or other disconnecting means?</td>
</tr>
<tr>
<td>4.</td>
<td>Are there at least 3 feet of clearance in front of all panels?</td>
</tr>
<tr>
<td></td>
<td>Can all panel doors be opened at least 90°?</td>
</tr>
<tr>
<td></td>
<td>Do the grounding electrode, connections, clamp and conductor comply with the</td>
</tr>
</tbody>
</table>
6. Were rainproof enclosures used in all outside areas?
Are enclosures in areas subjected to washdown watertight, dusttight, and made of corrosion-resistant materials?

7. Is all wiring surface mounted?
Is all wiring protected to reduce the risk of physical damage?

8. Are all cables of a type designed for use in a wet or damp environment?
Are all cable fittings of a watertight design?

9. Is all conduit nonmetallic?
Is use of ENT avoided?
Is all conduit surface mounted?
Are all conduit runs equipped with expansion joints?
Do all conductors in the conduit have a Type W insulation?

10. Are all general purpose branch circuits wired with No. 12 AWG or larger conductors?
Is a disconnect located within sight of all motors, fans, etc.?

11. Is all metallic equipment within 8 feet of the floor or soil surface grounded?
Are all grounding and neutral conductors electrically separated except in the main building disconnect panel?
Are all high pressure washers GFCI protected?

12. Are nonmetallic boxes and fixtures with appropriate fittings used throughout the facility?

13. Are all switch and receptacle boxes and covers in animal and grain processing areas of a weatherproof and dusttight design?
Are all combination switch and fuse holders installed in nonmetallic enclosures?
Are all thermostats UL listed, watertight, dusttight and made of corrosion-resistant material?
Are all circuit breakers used as switches appropriately rated and marked?

14. Are all light fixtures made of corrosion-resistant material and equipped with shatterproof, gasketed covers or globes?

15. Do all cables and conduits enter boxes and enclosures from the side or bottom to the extent possible?

16. Are all electrical devices surface mounted or positioned in interior walls or partitions?

17. Are all electrical devices and wiring installed in a manner to minimize damage due to feed carts, animals or personnel working within the building? (Protection can be provided either by mounting height or supplemental protection methods.)

18. Are all suspended appliances supported by a means other than the electrical cord, conduit or cable?

19. Are heat lamp holders equipped with porcelain sockets?

20. Are all motors totally enclosed and rated for farm service?
Discuss questions answered "no" with a skilled licensed electrician or an electrical inspector. Make corrections as necessary. Good maintenance is required to assure continued safety of an electrical system.

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H-4, Equipment, General  
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**Are flexible cords, stranded conductors or cables used to provide service to all equipment subject to vibration during operation?**

**Is all "permanently" installed equipment serviced by permanent wiring, i.e., no plug and cord connections?**

**Are all cords used outdoors of a type to resist damage from sunlight? (Label designation includes the letter 'E'.)**

**Are all fuses to protect small motors or other loads Type S?**

**21. Are all electrically heated waterers serviced with a cable or conduit equipped with an equipment grounding conductor?**

**Is a disconnect switch with an appropriately sized fuse located near the waterer?**

**Are all heat tapes of a 3-wire grounded design?**

**Are all heat tapes rated for overlapping or installed so heat tape does not cross over itself?**

**22. Are all metallic building components within 8 feet of the ground or floor bonded to the electrical grounding system?**

**23. Are all conductor attachments to buildings made with adequate clearance around building openings?**

**24. Is a properly wired double-throw transfer switch provided for safe use of a standby power source?**

**25. Are surge arrestors provided to protect computers, electronic controls, etc.?**

**26. Is the building equipped with a lightning protection system?**

**Is the lightning rod system bonded to the electrical system grounding network as required by the National Electrical Code?**

**Is a lightning protection system "Master's Label" present on site?**

**Has a lightning (surge) arrestor been installed on the service entrance panel?**

**27. Have provisions been made to minimize the development of and problems associated with extraneous voltages?**

**28. Are fence chargers located outside of buildings?**

**Is the output ground terminal of the fence, crowd gate or cow trainer charger connected to a separate ground rod? (There should be no connections between the charger output and the electrical system.)**

Discuss questions answered "no" with a skilled licensed electrician or an electrical inspector. Make corrections as necessary. Good maintenance is required to assure continued safety of an electrical system.