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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		
Yes	**No**	
____	____	1. Was all wiring installed in accordance with minimum standards as set forth in the current edition of the *National Electrical Code*?
____	____	Is all equipment listed by a recognized testing laboratory?
____	____	2. Was the electrical system installed by a licensed electrician?
____	____	3. Was the electrical system inspected by an electrical inspector?
____	____	Does each building have a single electrical service entrance?
____	____	4. Are there at least 3 feet of clearance in front of all panels?
____	____	Can all panel doors be opened at least 90°?
____	____	Does the service entrance contain a main breaker or other disconnecting means?
____	____	5. Is the service entrance equipped with a grounding electrode?
____	____	Do the grounding electrode, connections, clamp and conductor comply with the

National Electrical Code?

____ ____ 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?

____ ____ 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.

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