POTTER-BECKHAM 345-KV TRANSMISSION LINE

BIRDS AND POWER LINES

As part of its commitment to the environment, Xcel Energy uses several strategies to protect birds from being injured or killed from contact with power lines or electrical equipment. The strategies include:

- Preventive – conducting risk assessments and installing avian safe standards where possible. When appropriate, Avian Protection Plans will be developed and equipment will be installed to divert birds away from power lines.
- Reactive – documenting mortalities, notifying resource agencies and applying remedial measures where appropriate
- Proactive – educating employees and being involved in organizations that conduct avian interaction research

For additional information regarding birds and power lines, visit the Avian Power Line Interaction Committee website at www.aplic.org.

NEST MANAGEMENT

Transmission line structures and equipment can be attractive to birds for building nests. Utilities try to minimize the risk of electrocution or injury to birds, of damage to electrical equipment, and outages to customers that may result when birds come in contact with power lines and structures. Nest management programs include installing nest boxes or platforms in safe areas on or near structures, where warranted. Additionally, utility personnel are educated on nest reporting, nest removal and platform construction.

ELECTROCUTION

Electrocution of birds is rarely associated with transmission lines greater than 138 kilovolts (kV) because generally the electrical components are separated enough that a bird can avoid contact with two lines, which would complete the circuit, potentially causing electrocution. Problems can arise with smaller lines, which can be corrected in two primary ways:

- Isolation – moving the components farther apart to achieve the necessary clearance
- Insulation – using covers on various electrical components to prevent contact with the component that would cause the electrocution

MINIMIZING BIRD COLLISIONS

Pre-construction efforts

- Use vegetation, topography or man-made structures to shield lines.
- Locate lines together.
- Site Lines away from obvious flyways, if possible.

Post-construction efforts

- Retroactively mark lines to make wires more visible to birds.

Marking Lines

Marking lines with various types of markers can decrease but not eliminate bird collisions. The different types of markers vary in effectiveness. Devices include bird and swan flight diverters and clamp-on markers. Examples of these devices are shown in the photo. Xcel Energy has used a variety of these markers on its lines. The decision to use them can be based on:

- Line voltage rating
- Weight of markers
- Wind/ice load factors during winter
- Durability
- Ease of installation
- Effect on the viewshed
- Susceptibility to vandalism

For more information, visit **xcelenergytransmission.com/potter-beckham-345-kv**

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