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MANAGEMENT OF STORK ACTIVITIES IN EQUIPMENT OF ELECTRIC DISTRIBUTION POWER NETWORKS

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Abstract

White Storks (*Ciconia ciconia* L.) may cause severe outages in electric networks leading to poor power quality service. Furthermore, bird fatalities often occur as consequence of electrocution. Therefore, equipment damages, economical losses of industry and electric corporations and bird deaths persuaded the main electric distribution operator and the regulator to implement management programs of storks' activities in the vicinity of electric distribution substructure to minimize stork fatalities and energy outages.

Stork management in electric distribution networks is implemented by using sounds, strobes, vibration and turbine devices. These systems are activated upon storks approaching the putative nesting sites. The storks are detected by ultrasonic sensor probes. Sound equipment was modified as specifically required to allow remote control and monitoring via Internet connection. Particularly effective were strong harassment sounds, *e. g.* guns, alarms, sirens, and dynamic powerful musical passages. Natural distress calls of herons and egrets were also effective. Ultrasonic frequencies, predator sounds (falcons, hawks) and general bird distress calls (gulls, pigeons, starlings) were of limited effects. To keep birds from adapting to routine patterns, the devices were activated only upon approaching detected by ultrasonic probes, and a random combination of 8 sound pieces played for 10 min. Novel vibration platforms proved effective in preventing nesting and roosting, but relatively difficult to install with the current prototype design.

Specially designed powered turbines powered by a high torque motor effectively prevented storks from nesting, in spite of several attempts.

Key words: bird control, bird expeller, power outage, power quality, White Stork

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