

February 12, 2004

Mr. Richard C. Nelson, Supervisor
Rock Island Field Office
U.S. Fish and Wildlife Service
4469 48th Avenue Court
Rock Island, Illinois 61201

Subject: REQUEST FOR CONCURRENCE - BIOLOGICAL ASSESSMENT FOR
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3 LICENSE
RENEWAL (TAC NOS. MB6843 AND MB6844)

Dear Mr. Nelson:

The U.S. Nuclear Regulatory Commission (NRC) staff has prepared the enclosed Biological Assessment (BA) to evaluate whether the proposed renewal of the operating licenses of the Dresden Nuclear Power Station, Units 2 and 3 (Dresden), for an additional 20-year period would have adverse effects on listed species, and request concurrence by your office.

Dresden is located in Goose Lake Township on the south shoreline of the Illinois River at the confluence of the Des Plaines and Kankakee Rivers. This BA evaluates the potential impacts of the proposed license renewal on Federally listed threatened or endangered species. Ten species, afforded protection under the Endangered Species Act of 1973, could potentially inhabit the Dresden site or transmission line rights-of-way (ROWs). For four of the species, the decurrent false aster (*Boltonia decurrens*), the leafy prairie-clover (*Dalea foliosa*), the lakeside daisy (*Hymenoxys herbacea*), and the Hine's emerald dragonfly (*Somatochlora hineana*), the renewal of the Dresden licenses will have "no effect." For the Mead's milkweed (*Asclepias meadii*), the prairie bush clover (*Lespedeza leptostachya*), the eastern prairie fringed orchid (*Platanthera leucophaea*), the eastern massasauga (*Sistrurus catenatus*), the Indiana bat (*Myotis sodalis*), and the bald eagle (*Haliaeetus leucocephalus*), the staff has determined that license renewal for Dresden may affect, but is not likely to adversely affect these six species.

In reaching our conclusion, we relied on information provided by Exelon Generation Company, LLC (the licensee), on research performed by the NRC staff, and on current listings of species provided by the Rock Island Field Office of the U.S. Fish and Wildlife Service.

If you have any questions regarding this BA or our request for concurrence, please contact Mr. Duke Wheeler, NRC Senior Environmental Project Manager, at (301) 415-1444.

Sincerely,

/RA/

Pao-Tsin Kuo, Program Director
License Renewal and Environmental Impacts
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos.: 50-237 and 50-249

Enclosure: As stated

cc w/encl: See next page

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BIOLOGICAL ASSESSMENT

**Dresden Nuclear Power Station, Units 2 and 3
License Renewal**

Grundy County, Illinois

February 2004

Docket Nos. 50-237 and 50-249

**U.S. Nuclear Regulatory Commission
Rockville, Maryland**

Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Enclosure

Biological Assessment of the Effects of License Renewal for the Dresden Nuclear Power Station, Units 2 and 3 Threatened or Endangered Species

Executive Summary

This Biological Assessment (BA) evaluates the potential impacts of the proposed license renewal for the Dresden Nuclear Power Station, Units 2 and 3 (Dresden) on Federally listed threatened or endangered species. There will be no major construction, refurbishment, or replacement activities associated with this action. A total of ten species, afforded protection under the Endangered Species Act of 1973, could potentially inhabit the Dresden site or transmission line rights-of-way (ROWs). The U.S. Nuclear Regulatory Commission (NRC) staff has conducted a BA of these ten species and has determined that for four of the species, the decurrent false aster (*Boltonia decurrens*), the leafy prairie-clover (*Dalea foliosa*), the lakeside daisy (*Hymenoxys herbacea*), and the Hine's emerald dragonfly (*Somatochlora hineana*), the renewal of the Dresden licenses for an additional 20 years will have "no effect." For the Mead's milkweed (*Asclepias meadii*), the prairie bush clover (*Lespedeza leptostachya*), the eastern prairie fringed orchid (*Platanthera leucophaea*), the eastern massasauga (*Sistrurus catenatus*), the Indiana bat (*Myotis sodalis*), and the bald eagle (*Haliaeetus leucocephalus*), the staff has determined that license renewal for Dresden may affect, but is not likely to adversely affect these six species.

Introduction

The NRC licenses the operation of domestic nuclear power plants in accordance with the Atomic Energy Act of 1954, as amended, and NRC implementing regulations. Exelon Generation Company, LLC (Exelon) operates Dresden pursuant to NRC Operating License Numbers DRP-19 and DRP-25, which expire on December 22, 2009, and January 12, 2011, respectively.

Exelon has prepared an environmental report in conjunction with its application for renewal of the Dresden operating licenses, as provided for by the following NRC regulations:

- Title 10, Energy, Code of Federal Regulations (CFR) Part 54, Requirements for Renewal of Operating Licenses for Nuclear Power Plants, Section 54.23, Contents of Application - Environmental Information (10 CFR 54.23).
- Title 10, Energy, CFR Part 51, Environmental Protection Requirements for Domestic Licensing and Related Regulatory Functions, Section 51.53, Postconstruction Environmental Reports, Subsection 51.53(c), Operating License Renewal Stage [10 CFR 51.53(c)].

The renewed operating license would allow up to 20 additional years of plant operation beyond the current licensed operating period.

No major refurbishment or replacement of important systems, structures, or components are expected during the Dresden license renewal period. In addition, no construction activities are expected to be associated with license renewal.

In a letter dated March 11, 2003, the NRC staff requested comments from the FWS on the operating license renewal application for Dresden (Kuo 2003a). Specifically, the NRC

requested a list of species and information on protected, proposed, and candidate species and critical habitat that may be in the vicinity of Dresden and its associated transmission line ROWs. The NRC also wrote the FWS on August 11, 2003, requesting information regarding the expanded scope of transmission lines being included in this review (Kuo 2003b). The FWS responded with a list of species and critical habitat that could occur on the Dresden site or along its associated transmission line ROWs (Nelson 2003).

This BA examines the effects of the Dresden operating license renewal on Federally listed species that occur in the counties where the Dresden site and associated transmission line ROWs are located. It has been prepared to support consultation regarding the effects of the proposed renewal of the operating licenses for Dresden on threatened and endangered species and designated critical habitat pursuant to Section 7(a)(2) of the Endangered Species Act (ESA). This consultation is between the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Fish and Wildlife Service (FWS). The BA examines the effects of the proposed action on the listed species that occur in counties where the Dresden site and associated transmission lines are located. The pallid sturgeon (*Scaphirhynchus albus*) is the only Federally listed fish species found in Illinois. This species occurs in the Mississippi River downstream of the confluence with the Missouri River and is unlikely to occur in the Upper Illinois River Basin where the Dresden site is located (FWS 1998). Pallid sturgeon have not been found in the vicinity of the Dresden site and are not considered in this BA.

The ten Federally listed species that could occur within the Dresden site or along its associated transmission line ROWs are listed in Table 1. In addition to the species in Table 1, a designated critical habitat exists for the Indiana bat in LaSalle County, far (40 mi [64 km]) from the nearest Dresden transmission line ROW.

Exelon has also corresponded with the FWS and the Illinois Department of Natural Resources (IDNR) regarding potential impacts of license renewal on threatened and endangered species (Jury 2002a, 2002b). The FWS indicated that it had no objection to the proposed license renewal action (Millar 2002).

Proposed Action

The proposed Federal action is renewal of the operating licenses for Dresden Units 2 and 3. The current operating license for Unit 2 expires on December 22, 2009, and for Unit 3 on January 12, 2011. Exelon submitted an application to the NRC (Exelon 2003) to renew these operating licenses for an additional 20 years of operation.

Dresden has two boiling water reactors designed by General Electric Company, each with a design rating for 912 megawatts electric (MW[e]). The cooling systems can operate in either of two modes. In the indirect open-cycle mode, once-through cooling water from the Kankakee River is used to remove heat from the main (turbine) condensers. The heated effluent is circulated through a cooling canal and pond before being discharged to the Illinois River. In the closed-cycle mode, heated effluent is circulated through mechanical draft cooling towers and then recycled through the condensers with limited make-up water withdrawn from the Kankakee River.

The proposed action would necessitate continued maintenance activities on ROWs for seven transmission lines that are used to connect Dresden to the electric power grid.

Table 1. Threatened, Endangered, and Candidate Species that Occur in Counties that Contain Dresden Units 2 and 3 and Associated Transmission Lines.^(a)

Scientific Name	Common Name	Federal Status ^(b)	County ^(c)	Habitat
<i>Asclepias meadii</i>	Mead's milkweed	T	Will	Mesic prairies ^(d, e)
<i>Boltonia decurrens</i>	decurent false aster	T	LaSalle, Tazewell, Woodford	Alluvial prairie and marshlands of the Illinois River flood plain ^(d, e)
<i>Dalea foliosa</i>	leafy prairie-clover	E	Will	Dolomite prairie remnants ^(d, e)
<i>Hymenoxys herbacea</i>	lakeside daisy	T	Tazewell, Will	Dolomite prairies ^(d, e)
<i>Lespedeza leptostachya</i>	prairie bush clover	T	DuPage, Grundy, Kendall, LaSalle, Livingston, Tazewell, Woodford, Will	Dry gravel and sand prairies ^(d, e)
<i>Platanthera leucophaea</i>	eastern prairie fringed orchid	T	DuPage, Grundy, Kendall, LaSalle, Livingston, Tazewell, Woodford, Will	Mesic to wet prairies ^(d, e)
<i>Somatochlora hineana</i>	Hine's emerald dragonfly	E	DuPage, Will	Calcareous spring-fed marshes ^(e, f)
<i>Sistrurus catenatus</i>	eastern massasauga	C	Will	Shrubby wetlands ^(e, g)
<i>Haliaeetus leucocephalus</i>	bald eagle	T	Grundy, LaSalle, Tazewell, Woodford, Will	Known to occur in winter, possibly also breeding in area; occurs along large rivers and lakes ^(e, f)
<i>Myotis sodalis</i>	Indiana bat	E	DuPage, Grundy, Kendall, LaSalle, Livingston, Tazewell, Woodford, Will	Wooded, riparian corridors, floodplain forests and upland forests ^(e, f)

(a) Federally listed species in project area based on the FWS (2003a, b).

(b) E = endangered; T = threatened; C = candidate for listing. Source: FWS (2003a, b).

(c) County distributions for Federally listed species from the FWS (2003b).

(d) Herkert (1991).

(e) Nelson (2003).

(f) Herkert (1992).

(g) FWS (2003b).

Project Area Description

Dresden is owned and operated by Exelon, and it is located on the south bank of the Illinois River at the confluence of the Des Plaines and Kankakee Rivers in Goose Lake Township, Grundy County, Illinois (Figure 1). The plant consists of three units. Units 2 and 3 are operating nuclear reactors and the subject of this consultation. Unit 1 was retired in 1978 and decontaminated in 1984, including the removal of fuel from the reactor. Units 2 and 3 are boiling water reactors (BWRs) that produce steam that turns turbines to generate electricity. In addition to the nuclear reactors and their turbine buildings, the site features intake and discharge canals, a cooling pond and canals, auxiliary buildings, switch yards, an independent spent fuel storage installation, a training center, and river frontage leased from the State of Illinois. Approximately one-half of the cooling pond is in Wilmington Township, Will County; and the other half is in Goose Lake Township, Grundy County, Illinois.

The local terrain is level to gently undulating except for the Kankakee Bluffs just northeast of the Dresden site on the north bank of the Illinois River. The area around Dresden is largely rural, characterized by farmland, woodlands, and small residential communities. The Goose Lake Prairie State Natural Area is located approximately 1.6 km (1 mi) southwest of the Dresden site. This 1015-ha (2537-ac) preserve contains the largest remnant of prairie left in Illinois and includes open grasslands and prairie marshes (Exelon 2003). Directly across the Kankakee River from the Dresden site is the 200-ha (500-ac) Des Plaines Conservation Area, which offers a variety of recreational opportunities. To the east of the Des Plaines Conservation Area is the Midewin National Tallgrass Prairie, a 6400-ha (16,000-ac) site formerly used as the Joliet Army Ammunition Plant. This area was transferred to the U.S. Forest Service in 1997 and is now being managed to restore, maintain, and enhance prairie habitats (Exelon 2003).

Dresden is located at the headwaters of the Illinois River where the Des Plaines and the Kankakee Rivers join to form the Illinois River (Figure 2). There is a 7-m-high (22-ft-high) dam at Dresden Island, approximately 3 km (2 mi) downstream from the confluence of the Kankakee and the Des Plaines Rivers, a 10-m-high (34-ft-high) dam just south of Joliet at Brandon Road, and a 12-m-high (40-ft-high) dam on the Des Plaines River just south of Lockport. Construction of these dams has resulted in a series of reservoirs maintained principally to facilitate barge traffic. Pool elevations are controlled, eliminating natural, seasonal flushing events, and are manipulated frequently.

The Dresden site occupies approximately 1011 ha (2500 ac) (Exelon 2003). Undeveloped areas of the Dresden site are located mostly on the western half and support a mosaic of habitats, including old fields, wetlands, and woodland vegetation. Several small, intermittent streams drain the site. Some of this undeveloped area is leased for cattle grazing.

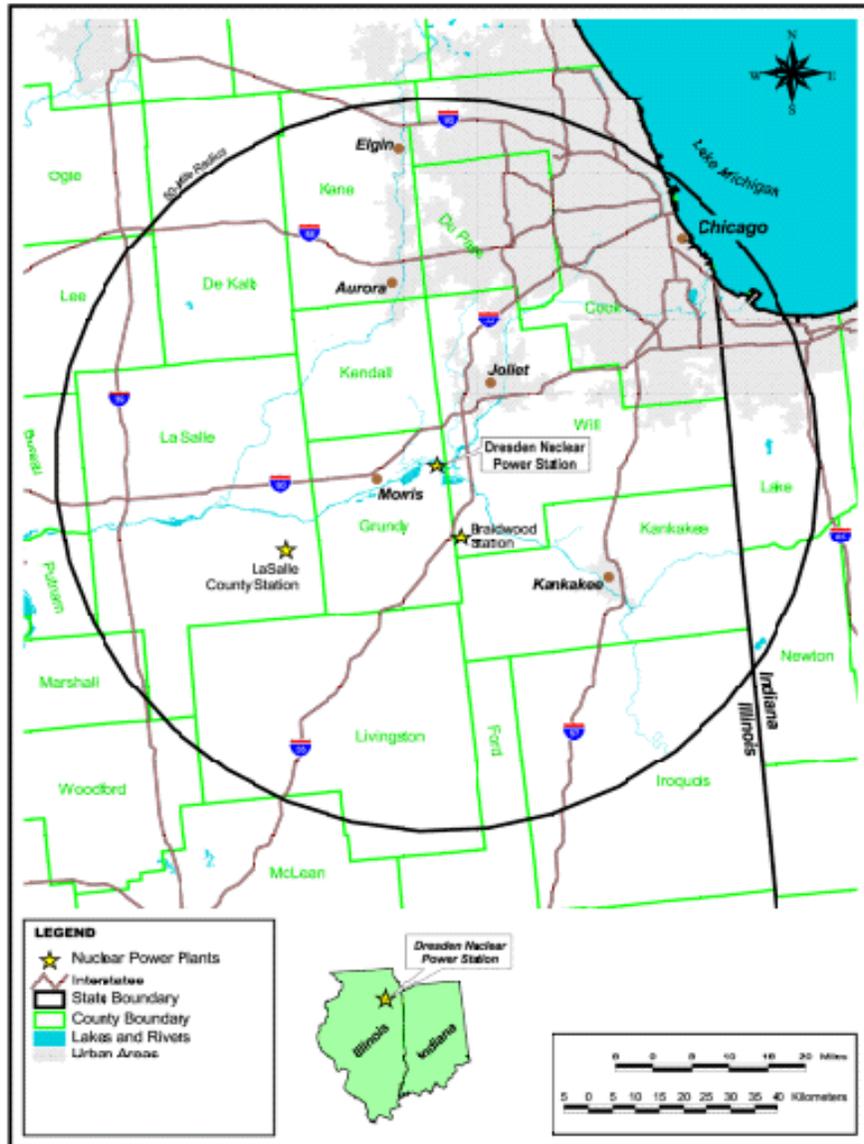


Figure 1. Location of Dresden Site with 80-km (50-mi) Radius.

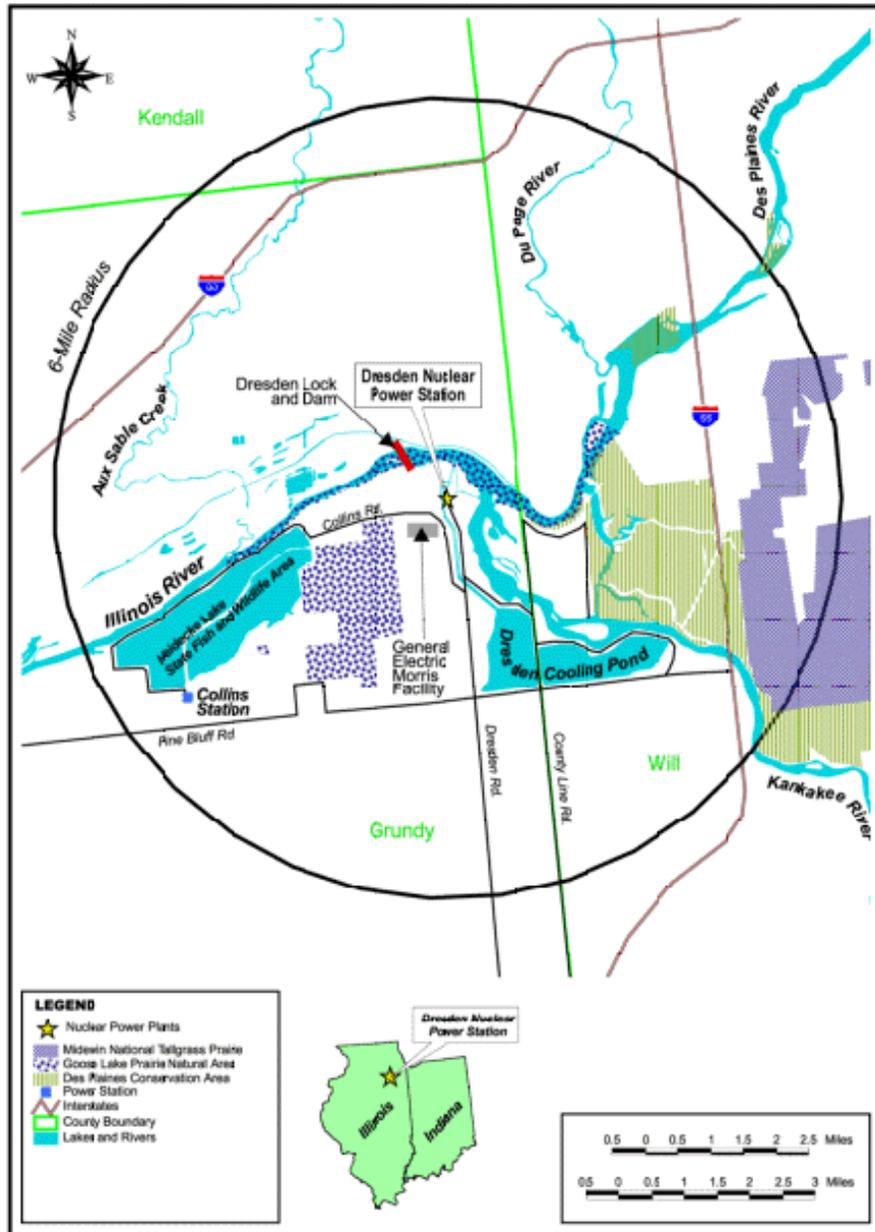


Figure 2. Dresden Site Detail with 10-km (6-mi) Radius.

Seven transmission lines connect Dresden to the electric grid (Exelon 2003). These lines occupy about 2440 ha (6030 ac) of land along 355 km (220 mi) of ROWs. These transmission line (ROWs) cross mostly agricultural land, but portions of the lines cross undeveloped habitats. Exelon maintains the ROWs by trimming and mowing, and through the application of approved herbicides (Cunningham 2003). Exelon participates in "Project Habitat," an industry program that emphasizes ROW management practices that are compatible with wildlife and improve habitat for native species. Exelon has converted some portions of the transmission line corridors to native prairie grass species (Exelon 2003). On those line ROWs associated with Dresden license renewal, prairie has been established on a 4-km (2.5-mi) segment on the northern portion of the Electric Junction transmission line in DuPage County.

The Pontiac-Midpoint transmission line ROW (69.7 km [43.3 mi] long) crosses the Goose Lake Prairie State Natural Area, which is located approximately 1.6 km (1 mi) southwest of the Dresden site (Exelon 2003). Habitats within the Goose Lake Prairie State Natural Area include tallgrass prairie and marshes (IDNR 2003).

The Powerton and the Goodings Grove transmission line ROWs (168.2 km [104.5 mi] and 20.0 km [12.4 mi], respectively) cross the Des Plaines Conservation Area, which is located across the Kankakee and the Des Plaines Rivers approximately 3.2 km (2 mi) east of the Dresden site. Natural habitats within the Des Plaines Conservation Area include river shorelines, lakes, swamps, marshes, and prairie (Exelon 2003). The Midwin National Tallgrass Prairie is immediately east of the Des Plaines Conservation Area and is crossed by a short segment of the Goodings Grove transmission line corridor. All ROW maintenance activities on the Midwin National Tallgrass Prairie must be reviewed and approved by U.S. Forest Service staff before implementation.

A portion of the Collins transmission line ROW (19.0 km [11.8 mi]) is located along Heidecke Lake State Fish and Wildlife Area, approximately 8 km (5 mi) southwest of the Dresden site. Most of the area is occupied by a cooling lake which is leased to the IDNR for hunting and fishing. The Electric Junction transmission line ROW (50.1 km [31.1 mi]) does not cross any designated natural areas. Both of these transmission lines cross the Illinois River.

Exelon maintains its transmission corridors by trimming and mowing and through the use of approved herbicides. Unless otherwise needed, vegetation management follows a five-year cycle. The preferred method of vegetation management is the use of low-volume foliar herbicides. This allows the elimination of undesirable species while preserving grasses, herbs, forbs, shrubs, and other low-growing vegetation. Herbicide application is performed according to label specifications by certified applicators. Special attention is given to stream crossings, riparian and wetland areas (NRC 2003).

Current Exelon ROW management practices reduce the probability of impacts to habitats and the species that are dependent on them. All activities in Goose Lake Prairie State Natural Area, Des Plaines Conservation Area, and Midwin National Tallgrass Prairie are planned in consultation with staff at those sites and must be approved prior to implementation. In general, ROWs across prairie habitat require little, if any, maintenance because of the absence of trees. Disturbance to wetland habitats and stream crossings are avoided and would be limited to occasional tree trimming or removal to prevent contact with transmission lines. Current

transmission line ROW maintenance practices favor native species and reduce the likelihood of adverse impacts to sensitive habitats (e.g., wetlands, streams) and any listed species that could be present within the ROWs (NRC 2003).

A variety of terrestrial wildlife species occurs in the project area. Terrestrial mammals of the area include white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), red fox (*Vulpes fulva*), eastern cottontail (*Sylvilagus floridanus*), muskrat (*Ondatra zibethicus*), and beaver (*Castor canadensis*) (IDNR 2003). Birds include Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), killdeer (*Charadrius vociferus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), and red-winged blackbird (*Agelaius phoeniceus*).

Figures 3 and 4, and Table 2, provide information on the transmission line corridors included in the Dresden license renewal application environmental review.

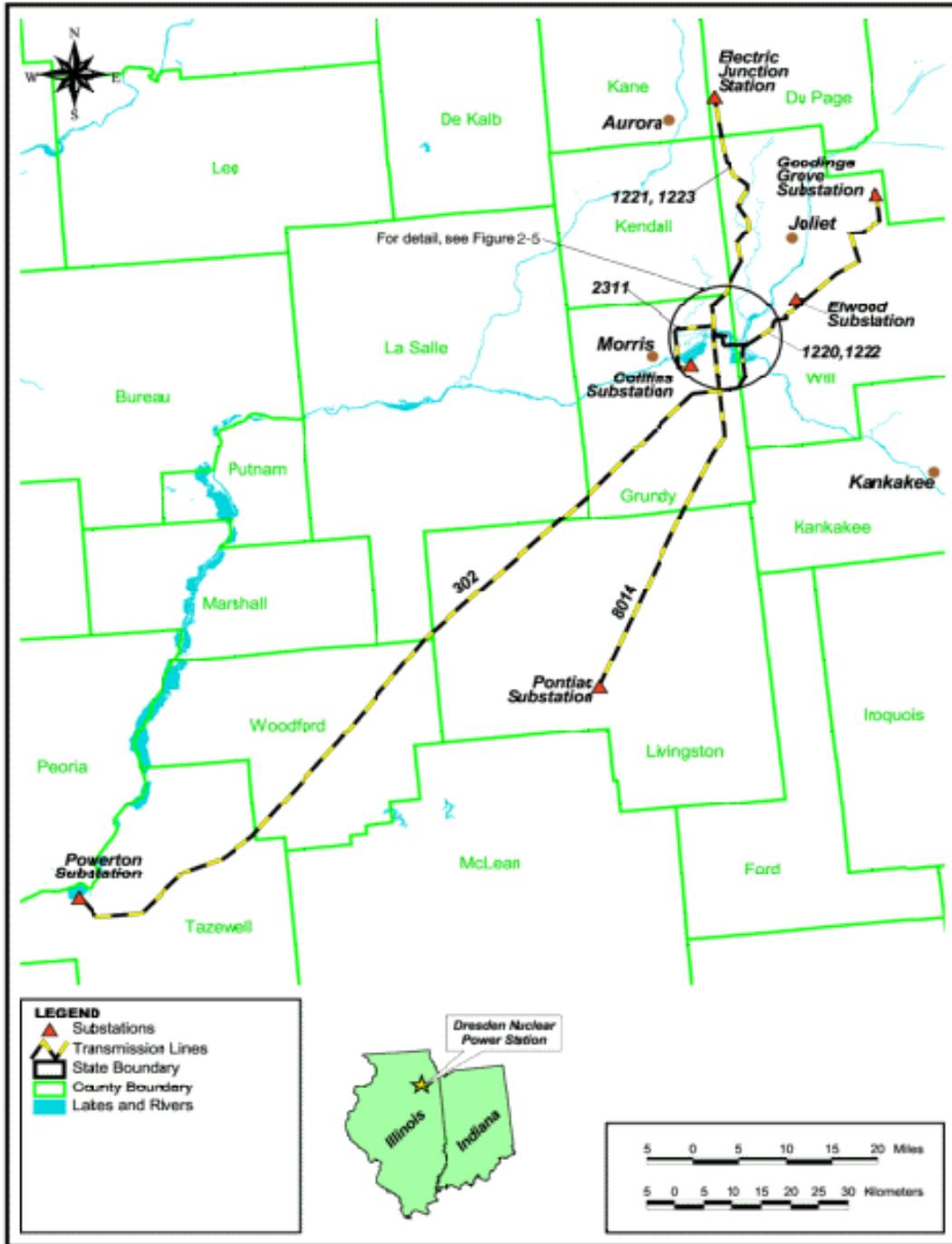
Description of Federally-Protected Species Occurring in the Project Area and Effects on These Species of the Proposed Action

1. Mead's Milkweed (*Asclepias meadii*)

Mead's milkweed (Federally listed as threatened) formerly occurred throughout the eastern tallgrass prairie region of the central United States including Kansas, Missouri, Illinois, Iowa, Wisconsin, and Indiana (FWS 2003c). There are four remaining populations in Illinois, and these are located in the Shawnee National Forest in Saline County in southern Illinois. Restoration projects have introduced the Mead's milkweed to a site in Will County (Nelson 2003; FWS 2003c). The primary habitat of Mead's milkweed is mesic to dry mesic, upland tallgrass prairie (Herkert 1991; FWS 2003c).

Although no populations of Mead's milkweed are known from the project area, it is possible that undeveloped portions of the Dresden site and associated transmission line ROWs could support this species, especially in those segments of the line that pass through natural areas, such as the Goose Lake Prairie State Natural Area, the Des Plaines Conservation Area, and the Midewin National Tallgrass Prairie. Undeveloped portions of the Dresden site that have the potential to support this species would not be affected by continued operations because no refurbishment activities that could result in habitat disturbance are planned (Exelon 2003). Current Exelon ROW management practices (Cunningham 2003) reduce the probability of impacts to these habitats and the species that are dependent on them. All activities in Goose Lake Prairie State Natural Area, Des Plaines Conservation Area, and Midewin National Tallgrass Prairie are planned in consultation with staff at these sites and must be approved prior to implementation. In general, transmission line ROWs across prairie habitat require little, if any, maintenance because of the absence of trees.

On the basis of the minimal anticipated impacts of ROW maintenance on potentially suitable habitat for the Mead's milkweed in the project area and the lack of habitat-disturbing activities on undeveloped portions of the Dresden site, the NRC staff concludes that continued operation of Dresden over the 20-year license renewal period is not likely to adversely affect the Mead's milkweed.



3. Transmission Lines Associated with the Dresden Site.

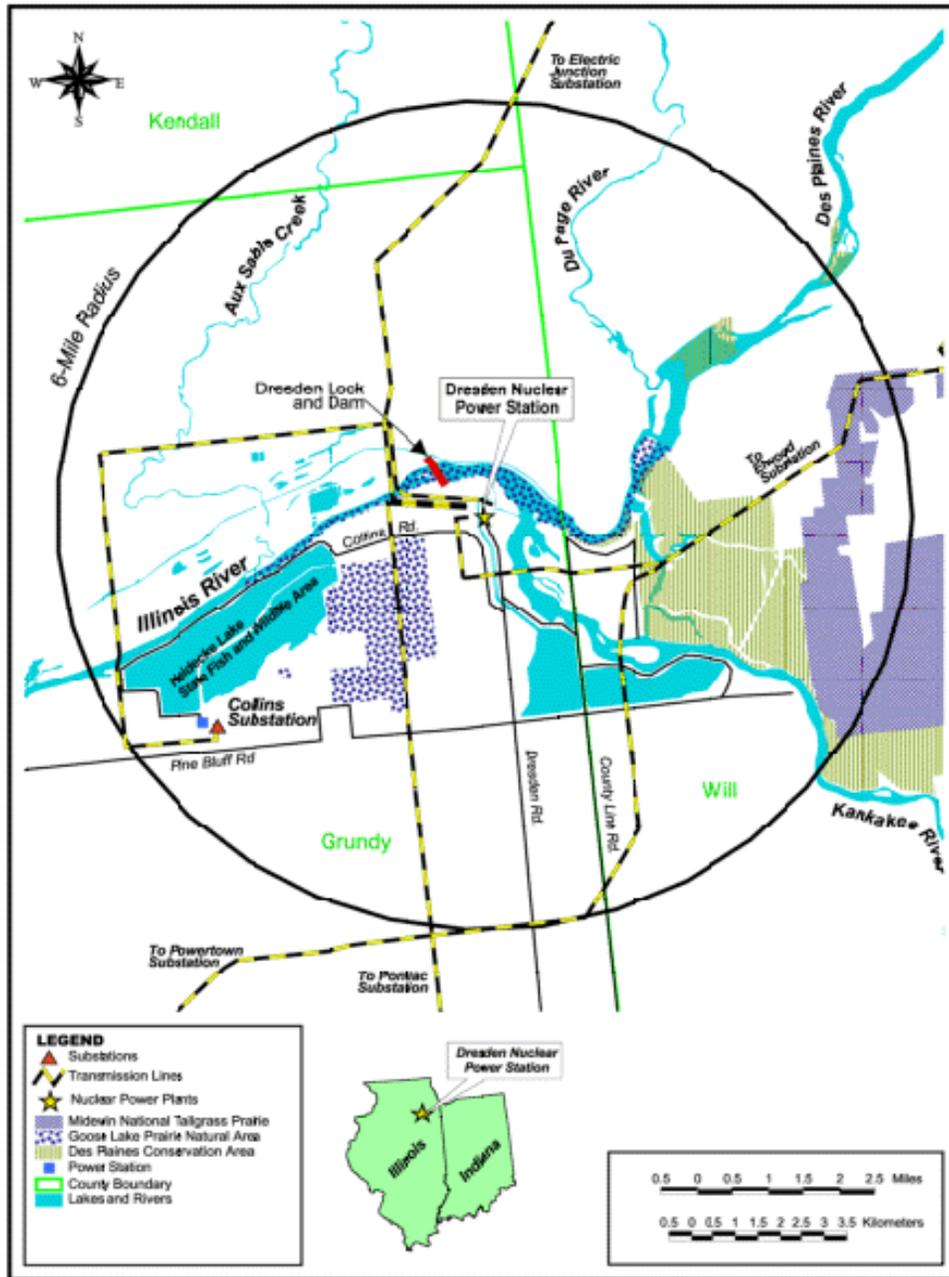


Figure 4. Transmission Line Detail for the Dresden Site.

Table 2. Dresden Transmission Line Corridor Data

Substation	Number of Lines	kV	Approximate Corridor Length		Corridor (Right-of-way) Width		Estimated Corridor Area	
			km	(mi)	m	(ft)	ha	(ac)
Electric Junction (Lines 1221 and 1223)	2	345	50	31.1	40 to 116	130 to 380	~420	~1050
Goodings Grove (Lines 1220 and 1222)	2	345	48 (20 to Elwood)	29.8 (12.4 to Elwood)	76	250	370	900
Pontiac-Midpoint (Line 8014)	1	345	70	43.3	44	145	310	760
Powerton (Line 302)	1	345	168	104.5	64 to 76 (mostly 76)	210 to 250 (mostly 250)	~1250	~3100
Collins Station (Line 2311)	1	345	19	11.8	46	150	90	220
Total	7		355	220.5			~2440	~6030

2. Decurrent False Aster (*Boltonia decurrens*)

The decurrent false aster (Federally listed as threatened) was originally widespread in alluvial prairie and marshland of the Illinois River flood plain (Keevin et al. 1990; Herkert 1991). It is most common in lowland areas where it appears to require disturbance for survival (Keevin et al. 1990), but most suitable habitats have been destroyed or affected by siltation or altered flooding regimes (Herkert 1991). Fifteen populations in eleven counties (including LaSalle, Tazewell, and Woodford counties) remain along the Illinois River (Herkert 1991), but the species is considered to potentially occur in any county bordering the Illinois River (Nelson 2003). No critical habitat has been designated for this species (Nelson 2003).

No populations of decurrent false aster are known to occur in the project area. Of the counties where the species is known to occur, only LaSalle, Tazewell, and Woodford Counties contain transmission line ROWs associated with Dresden; however, none of these is near the Illinois River flood plain where the species is found. The Dresden site itself (Grundy County) is located on the Illinois River flood plain, but existing levees, channelization, and dams prevent the flooding disturbance that is thought to be needed for the species. No populations of decurrent false aster are known from Grundy County (Herkert 1991).

On the basis of this information, the NRC concludes that continued operation of Dresden over the 20-year license renewal period will have no effect on the decurrent false aster.

3. Leafy Prairie-Clover (*Dalea foliosa*)

The leafy prairie-clover (Federally listed as endangered) is found in two disjunct regions: the cedar glades of central Tennessee and northern Alabama, and in Illinois where it is now restricted to dolomite prairie on river terraces in seven counties in the northeastern portion of the State (DeMauro and Bowles 1996). Leafy prairie-clover is found only in open limestone cedar glades, limestone barrens, and dolomite prairies that have shallow soils over limestone or dolomite with frequent expanses of exposed bedrock (DeMauro and Bowles 1996). Historically, the species was widespread in Illinois but found only in mesic dolomite prairie habitat (Herkert 1991). It was thought to be extinct in Illinois until rediscovered in 1974 (Herkert 1991). There is no critical habitat designated for this species (Nelson 2003).

In the area potentially affected by the proposed action, the leafy prairie-clover is known to occur in Will County and potentially in LaSalle County (Nelson 2003). Known populations in Will County are found in dolomite prairie habitats in three county preserves along the western side of the Des Plaines River north of Joilet (DeMauro and Bowles 1996). These locations are at least 8 km (5 mi) from the nearest project-related transmission line ROW. The only project-related facility that occurs in LaSalle County is a portion of the Pontiac-Midpoint transmission line ROW that traverses the southeastern corner of the county. This portion of the transmission line ROW crosses agricultural land (row crops) exclusively.

On the basis of this information, the NRC concludes that continued operation of Dresden over the 20-year renewal period will have no effect on the leafy prairie-clover.

4. Lakeside Daisy (*Hymenoxys herbacea*)

The lakeside daisy is Federally listed as threatened. The species occurred historically in dry prairies, on outcrops of dolomite or limestone bedrock, and on sand and gravel terraces of major river valleys (DeMauro 1990; Nelson 2003). Lakeside daisy was known from a few dolomite prairies in Will County (along the Des Plaines River at Rockdale, Illinois) and a gravel bluff along the Illinois River in Tazewell County (Herkert 1991). The last known extant population in Illinois was destroyed in 1981, but the species has been reintroduced into Will and Tazewell Counties. Restored populations are threatened with vegetation encroachment,

off-road-vehicle disturbance, and high herbivory rates (DeMauro 1990). Only one natural population remains, and it is located in an abandoned quarry in northern Ohio (DeMauro 1990). There is no critical habitat listed for this species in Illinois (Nelson 2003).

In the area potentially affected by the proposed action, the lakeside daisy is known to occur in Will and Tazewell Counties (Herkert 1991; Nelson 2003). Populations in Will County have been restored in dolomite prairie habitats in two county preserves along the western side of the Des Plaines River north of Joilet (DeMauro 1990). The species has also been reintroduced to the Illinois River bluff site (a county nature preserve) in Tazewell County where it was found historically (DeMauro 1990). These locations are at least 5 mi (8 km) from the nearest project-related transmission line.

On the basis of this information, the NRC concludes that continued operation of Dresden over the 20-year renewal period will have no effect on the lakeside daisy.

5. Prairie Bush Clover (*Lespedeza leptostachya*)

The prairie bush clover (Federally listed as threatened) is known to occur in Lee County, Illinois, but could potentially occur anywhere in suitable prairie remnants within the State (Nelson 2003). The species occurs on dry gravel and sand prairies and is rare throughout its range (Herkert 1991; Nelson 2003). Critical habitat has not been designated for this species.

Although no populations of prairie bush clover are known to occur the project area, it is possible that undeveloped portions of the Dresden site and associated transmission line ROWs could support this species, especially in those segments of the line that pass through natural areas, such as the Goose Lake Prairie State Natural Area, the Des Plaines Conservation Area, and the Midewin National Tallgrass Prairie. Undeveloped portions of the Dresden site that have the potential to support the prairie bush clover would not be affected by continued operations because no refurbishment activities that could result in habitat disturbance are planned (Exelon 2003). Current Exelon ROW-management practices (Cunningham 2003) reduce the probability of impacts to these habitats and the species that are dependent on them. All activities in Goose Lake Prairie State Natural Area, Des Plaines Conservation Area, and Midewin National Tallgrass Prairie are planned in consultation with staff at these sites and must be approved prior to implementation. In general, ROWs through prairie habitat require little, if any, maintenance because of the absence of trees.

On the basis of the minimal anticipated impacts of ROW maintenance on potentially suitable habitat for the prairie bush clover in the project area and the lack of habitat-disturbing activities in undeveloped portions of the Dresden site, the NRC staff concludes that continued operation of Dresden over the 20-year renewal period is not likely to adversely affect the prairie bush clover. See the discussion above on Mead's milkweed regarding the potential for project impacts in these areas.

6. Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)

The eastern prairie fringed orchid (Federally listed as threatened) prefers mesic to wet prairie habitat and potentially occurs throughout Illinois (Nelson 2003). It occurs in tallgrass silt-loam or sand prairies, sedge meadows, fens, and occasionally sphagnum bogs (Bowles 1999). It appears to be adapted to disturbance and occasionally colonizes early succession habitats or recolonizes previously occupied areas (Bowles 1999). The eastern prairie fringed orchid formerly occurred from eastern Iowa, Missouri, and Oklahoma eastward across southern Wisconsin, northern and central Illinois, southern Michigan, northern Indiana and Ohio, and northwestern Pennsylvania to western New York and adjacent southern Ontario. Disjunct populations also occurred in New Jersey, Virginia, and Maine (Bowles 1999). In Illinois, the species has been eliminated from all but portions of the northeast by agriculture, drainage, and urban development (Herkert 1991; Bowles 1999). The eastern prairie fringed orchid is now known from only 22 populations in Illinois located in protected areas that include nature preserves, county forest preserves, and a State park (Herkert 1991).

Although no populations of eastern prairie fringed orchid are known from the project area, it is possible that undeveloped portions of the Dresden site and associated transmission line ROWs could support this species. On the basis of the minimal anticipated impacts of ROW maintenance on potentially suitable habitat for the eastern prairie fringed orchid in the project area and the lack of habitat-disturbing activities in undeveloped portions of the Dresden site, the NRC staff concludes that continued operation of Dresden over the 20-year renewal period is not likely to adversely affect the eastern prairie fringed orchid, especially in those segments of the line that pass through natural areas, such as the Goose Lake Prairie State Natural Area, the Des Plaines Conservation Area, and the Midewin National Tallgrass Prairie. Undeveloped portions of the Dresden site that have the potential to support the eastern prairie fringed orchid would not be affected by continued operations because no refurbishment activities that could result in habitat disturbance are planned (Exelon 2003). Current Exelon ROW-management practices (Cunningham 2003) reduce the probability of impacts to these habitats and the species that are dependent on them. All activities in Goose Lake Prairie State Natural Area, Des Plaines Conservation Area, and Midewin National Tallgrass Prairie are planned in consultation with staff at these sites and must be approved prior to implementation. In general, ROWs through prairie habitat require little, if any, maintenance because of the absence of trees.

On the basis of the minimal anticipated impacts of ROW maintenance on potentially suitable habitat for the eastern prairie fringed orchid in the project area and the lack of habitat-disturbing activities in undeveloped portions of the Dresden site, the NRC staff concludes that continued operation of Dresden over the 20-year renewal period is not likely to adversely affect the eastern prairie fringed orchid.

7. Hine's Emerald Dragonfly (*Somatochlora hineana*)

The endangered Hine's emerald dragonfly is the only Federally listed aquatic species that occurs in any of the counties that contain the Dresden site or associated transmission line

ROWs. This species occurs in nine sites in Will, Cook, and DuPage Counties (FWS 2001). Aquatic nymphs of this species are restricted to marsh, seep, and sedge-meadow habitats with slow-flowing water and thin soils over dolomite bedrock (FWS 2001). Adults are also found near these habitats. Populations of Hine's emerald dragonfly have been found in the lower Des Plaines River valley in northern Will County, but none has been found on or in the vicinity of the Dresden site (FWS 2001). Critical habitat has not been designated for this species.

The life history of the Hine's emerald dragonfly is similar to that of other dragonfly species and consists of two distinct phases: aquatic nymph and terrestrial aerial adult (FWS 2001). Both life stages are predaceous. Nymphs inhabit small streamlets for two to four years. After this period, nymphs begin to emerge as adults (late May in Illinois), and emergence continues for a population through the summer. Adults live for two to six weeks (FWS 2001).

In the area potentially affected by the proposed action, the Hine's emerald dragonfly is known from Will County. The species is known from six sites in Will County (four in nature preserves and two on privately owned land). These sites are along the Des Plaines River north of Joilet and are at least 8 km (5 mi) from the Dresden site and associated transmission line ROWs.

On the basis of this information, the NRC concludes that continued operation of Dresden over the 20-year renewal period will have no effect on the Hine's emerald dragonfly.

8. Eastern Massasauga (*Sistrurus catenatus*)

The eastern massasauga is a small rattlesnake that is declining throughout its range and is currently a candidate for Federal listing as threatened or endangered (Nelson 2003). The massasauga is usually found in or near wet areas including wetlands, wet prairie, and nearby woodland or shrub habitat (Nelson 2003). The species also uses dry old fields with goldenrod (*Solidago* spp.) and woody species, such as dogwood (*Cornus* spp.) or multiflora rose (*Rosa multiflora*). Dry upland areas up to 2.4 km (1.5 mi) away from wet habitat are utilized during the summer (Nelson 2003).

The massasauga once occurred in the northern four-fifths of Illinois, but intensive farming and destruction of wetlands has decreased its habitat. In recent years, it has been found in Washington County in southern Illinois, Piatt County in east central Illinois, Knox County in western Illinois, and DuPage, Cook, and Will counties in northeast Illinois (Illinois State Museum 2003). In the area potentially affected by the project, the massasauga is known to occur only in Will County.

Although the eastern massasauga is not known to occur in the project area, it is possible that undeveloped portions of the Dresden site and associated transmission line ROWs could support this species, especially in those segments of the line that pass through natural areas, such as the Goose Lake Prairie State Natural Area, the Des Plaines Conservation Area, and the Midewin National Tallgrass Prairie. Undeveloped portions of the Dresden site that have the potential to support the eastern massasauga would not be affected by continued operations

because no refurbishment activities that could result in habitat disturbance are planned (Exelon 2003). Current Exelon ROW-management practices (Cunningham 2003) reduce the probability of impacts to these habitats and the species that are dependent on them. All activities in Goose Lake Prairie State Natural Area, Des Plaines Conservation Area, and Midewin National Tallgrass Prairie are planned in consultation with staff at these sites and must be approved prior to implementation. In general, ROWs through prairie habitat require little, if any, maintenance because of the absence of trees.

On the basis of the minimal anticipated impacts of ROW maintenance on potentially suitable habitat for the eastern massasauga in the project area and the lack of habitat-disturbing activities in undeveloped portions of the Dresden site, the NRC staff concludes that continued operation of Dresden over the 20-year license renewal period is not likely to adversely affect the eastern massasauga.

9. Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is currently listed as threatened, but this species has been proposed for delisting. The species is listed as wintering and possibly breeding in Tazewell, Woodford, LaSalle, Grundy, and Will Counties, Illinois (Nelson 2003). Bald eagles nest in large trees near rivers and lakes. During the winter, eagles congregate near open water created by dam tailwaters, power plant effluent, and municipal and industrial discharge, or in power plant cooling ponds (Nelson 2003). The importance of these areas increases in colder winters when open water is not available elsewhere. Large trees near open water are favored for perching and night roosting. Critical habitat has not been designated for the bald eagle (Nelson 2003).

Exelon has not reported bald eagles on the Dresden site, but it is reasonable to assume that the species is an occasional winter visitor to open water bodies on and adjacent to the site. Bald eagles are not known to nest in the project area, and there are no known roosting concentrations in the area. In the winter, eagles may be attracted to open water areas in the vicinity of the Dresden site when other large water bodies are frozen. Water without ice cover provides foraging areas for the bald eagle, and the normal plant operations that maintain these open areas can be considered a benefit to eagles. Exelon does not anticipate refurbishment activities during the license renewal period that could result in any habitat disturbance or removal of potential roost trees. The NRC staff, therefore, concludes that continued operation of Dresden over the 20-year license renewal period is not likely to adversely affect the bald eagle.

10. Indiana Bat (*Myotis sodalis*)

The Indiana bat is known to occur in LaSalle County, Illinois, and could potentially occur statewide (Nelson 2003). The Blackball Mine, located in LaSalle County about 64 km (40 mi) west of the Dresden site and associated transmission line ROWs, is listed as critical habitat for the Indiana bat (FWS 1999; Nelson 2003). Indiana bats congregate for hibernation in only a

few caves or mines within their range, and impacts at these hibernacula have been a major cause of this species' decline (FWS 1999).

During the summer, Indiana bats use a variety of habitats for roosting and foraging but frequent the corridors of small streams with well developed riparian woods (FWS 1999; Nelson 2003). The species forages for insects in the stream corridor; within the canopy of flood plain and upland forests; over old-fields, ponds, and pastures; and along the borders of agricultural fields and wooded fence rows (Nelson 2003). Indiana bats roost and rear young in trees. Preferred roost trees have exfoliating bark with space for bats to roost between the bark and the bole of the tree; to a limited extent, tree cavities and crevices also are used for roosting (FWS 1999). Maternity colonies use multiple roosts. Each colony has at least one (but there may be more than one) "primary" roost that is used by a majority of the bats most of the summer. Indiana bats tend to return to the same roosting area year after year (Nelson 2003).

Although the Indiana bat is not known to occur in the project area, it is possible that undeveloped portions of the Dresden site and associated transmission line ROWs could support the habitat of this species. It is unlikely that ROW maintenance would result in the removal of an Indiana bat roost tree because these ROWs have been maintained for several decades, and large trees suitable as roosts would not have become established within the ROWs. The ROWs could be used by Indiana bats for foraging, but no adverse impacts to foraging bats would be anticipated. Indiana bats could potentially use undeveloped portions of the Dresden site for foraging and roosting. Continued operations would not impact this species, however, because no refurbishment activities that could result in habitat disturbance are planned (Exelon 2003).

On the basis of the minimal anticipated impacts of ROW maintenance on potentially suitable habitat for the Indiana bat in the project area and the lack of habitat-disturbing activities in undeveloped portions of the Dresden site, the NRC staff concludes that continued operation of Dresden over the 20-year license renewal period is not likely to adversely affect the Indiana bat.

Conclusion

The NRC staff has reviewed the information on endangered and threatened species that could be affected by continued operation and maintenance of Dresden and its associated transmission lines and transmission line ROWs. No refurbishment or replacement of important structures, systems or components is currently planned by the applicant. Therefore, disturbance of protected species or their habitats on the Dresden site is not anticipated. Current transmission line ROW maintenance practices favor native species and reduce the likelihood of adverse impacts to sensitive habitats (e.g., wetlands, streams) and any species that may be present within the ROWs. Based on its evaluation, the NRC staff concludes for four of Federally listed species, the decurrent false aster (*Boltonia decurrens*), the leafy prairie-clover (*Dalea foliosa*), the lakeside daisy (*Hymenoxys herbacea*), and the Hine's emerald dragonfly (*Somatochlora hineana*), the renewal of the Dresden licenses will have "no effect." Also, for the Mead's milkweed (*Asclepias meadii*), the prairie bush clover (*Lespedeza*

leptostachya), the eastern prairie fringed orchid (*Platanthera leucophaea*), the eastern massasauga (*Sistrurus catenatus*), the Indiana bat (*Myotis sodalis*), and the bald eagle (*Haliaeetus leucocephalus*), the NRC staff has determined that license renewal for Dresden may affect, but is not likely to adversely affect these six Federally listed species.

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