

**Biological Assessment  
for Species Under the Jurisdiction of the  
U.S. Fish and Wildlife Service**

**James A. FitzPatrick Nuclear Power Plant  
License Renewal Review**

**May 2007**

**Docket Number  
50-333**

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

# **Biological Assessment of the Potential Effects on Endangered or Threatened Species from the Proposed License Renewal of the James A. FitzPatrick Nuclear Power Plant for Species Under the Jurisdiction of the U.S. Fish and Wildlife Service**

## **1.0 Introduction**

The U.S. Nuclear Regulatory Commission (NRC) licenses the operation of domestic nuclear power plants in accordance with the Atomic Energy Act of 1954, as amended, and NRC implementing regulations, codified in 10 CFR Parts 51 and 54. Entergy Nuclear FitzPatrick, LLC (Entergy), operates James A. FitzPatrick Nuclear Power Plant (JAFNPP) in northern New York under Operating License DPR-59. The license will expire October 17, 2014. Entergy has applied to renew the operating licenses for JAFNPP. If approved by the NRC, the renewed license would allow up to 20 additional years of plant operation beyond the current licensed operating term.

By letter dated September 19, 2006, the NRC requested that the U.S. Fish and Wildlife (FWS) provide a list of Federally endangered or threatened species that may be in the vicinity of JAFNPP and its associated transmission lines. The FWS, in response, provided a copy of a letter to Entergy dated May 19, 2006, which identified the Indiana bat (*Myotis sodalis*) and bog turtle (*Clemmys muhlenbergii*) as the only Federally listed or proposed threatened or endangered species which are known to occur in the project area. It also directed Entergy to the FWS New York Field Office website at <http://www.fws.gov/northeast/nyfo/es/section7.htm>, for the most recent list of Federally listed endangered or threatened species. The FWS website listed three Federally endangered, threatened, or candidate species as potentially occurring in Oswego and Oneida counties, which contain the JAFNPP site and transmission line rights-of-way. They are the threatened bog turtle, the endangered Indiana bat, and the candidate species massasauga rattlesnake (*Sistrurus catenatus catenatus*). No Federally listed species are known to be present in Lake Ontario, which serves as the source of cooling water for JAFNPP, or in the water bodies crossed by the in-scope transmission lines.

## **2.0 The Proposed Federal Action**

The proposed Federal action is renewal of the Operating License for JAFNPP. JAFNPP is located in Oswego County in northern New York, on the southern shore of Lake Ontario. Oswego, New York, is approximately 7 mi southwest of the JAFNPP site, and Syracuse, New York, is approximately 36 mi to the south-southeast. By letter dated July 31, 2006, Entergy submitted an application to the NRC to renew the Operating License for JAFNPP for an additional 20 years of operation (i.e., until October 2034). Figure 1 contains a map showing the location of JAFNPP.

No major construction, refurbishment, or system, structure, or component replacement activities associated with license renewal are expected. If the NRC approves the license renewal application, the reactors and support facilities, including the cooling system, would be expected to continue to be operated and maintained until the renewed license expires in 2034. Continued maintenance activities on the transmission line rights-of-way that are used to connect JAFNPP to the electric power grid also would be required if the proposed action is approved. Ongoing right-of-way surveillance and maintenance activities along JAFNPP transmission lines include routine aerial and ground inspections as well as activities associated with vegetation management, conducted by personnel from Entergy, Nine Mile Point Nuclear Station (NMPNS), and the New York Power Authority (NYPA).

Pursuant to 10 CFR 51.53(c) and 54.23, Entergy submitted an Environmental Report (ER) (Entergy 2006) in which Entergy analyzed the environmental impacts associated with the proposed license renewal action, considered alternatives to the proposed action, and evaluated mitigation measures for reducing adverse environmental effects. The NRC is using this ER, as well as its own analysis as the basis for a supplemental environmental impact statement, to prepare a site-specific supplement to NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants." This BA was prepared to evaluate the potential impacts to protected species due to the operation of JAFNPP for an additional 20 years beyond the current license term.

### **3.0 The Plant and Associated Transmission Line System**

#### **3.1 Reactor Systems and site facilities**

JAFNPP uses a boiling water reactor (BWR) and steam-driven turbine generator manufactured by General Electric. The JAFNPP unit has a design power rating of 2536 megawatts-thermal (MW(t)). The reactor's primary containment is a pressure suppression system consisting of a drywell, a pressure-suppression chamber storing a large volume of water, a connecting vent system between the drywell and the suppression pool, a vacuum relief system, isolation valves, containment cooling systems, and other service equipment.

Additionally, the site contains an independent spent fuel storage installation, an indoor shooting range, training and administrative buildings, wastewater treatment facility, a variety of storage, and maintenance buildings, and a large chimney that serves as the plant's elevated effluent release point. An outdoor rifle range and a wellness center were recently constructed at the site. JAFNPP shares a meteorological tower with NMPNS.

#### **3.2 Cooling and Auxiliary Water Systems**

Cooling water for JAFNPP is drawn from Lake Ontario by way of a submerged intake structure, approximately 900 feet offshore. After passing through the plant's cooling condensers, the heated water is discharged into Lake Ontario via a diffuser structure, located approximately 1400 feet offshore.

#### **3.3 Electrical Transmission System**

The three transmission lines constructed to connect the JAFNPP to the transmission system were described in the Final Environmental Statement (FES) for operation of JAFNPP (AEC 1973). These lines included one 345 kV line to the Edic substation near Utica, NY, and two lines (345 and 115 kV) to NMPNS Unit 1, located on the property to the west of the JAFNPP site. In addition, 26 mi of new 115 kV transmission line was constructed after initial licensing to connect JAFNPP to the Lighthouse Hill Hydroelectric Station located near Altmar, NY. This line is outside of the scope for the NRC's environmental review.

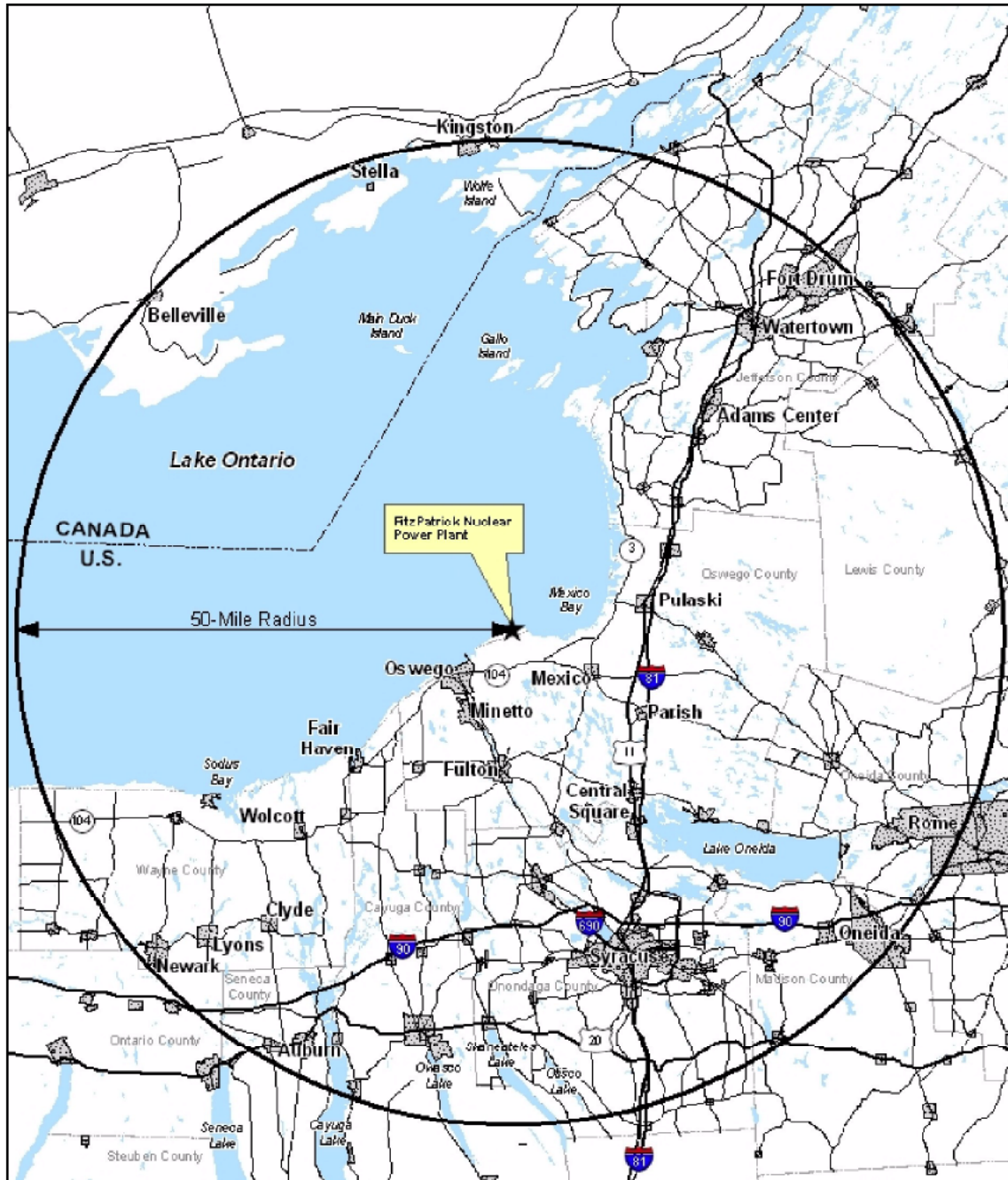


Figure 1. Location of JAFNPP (Entergy 2006)

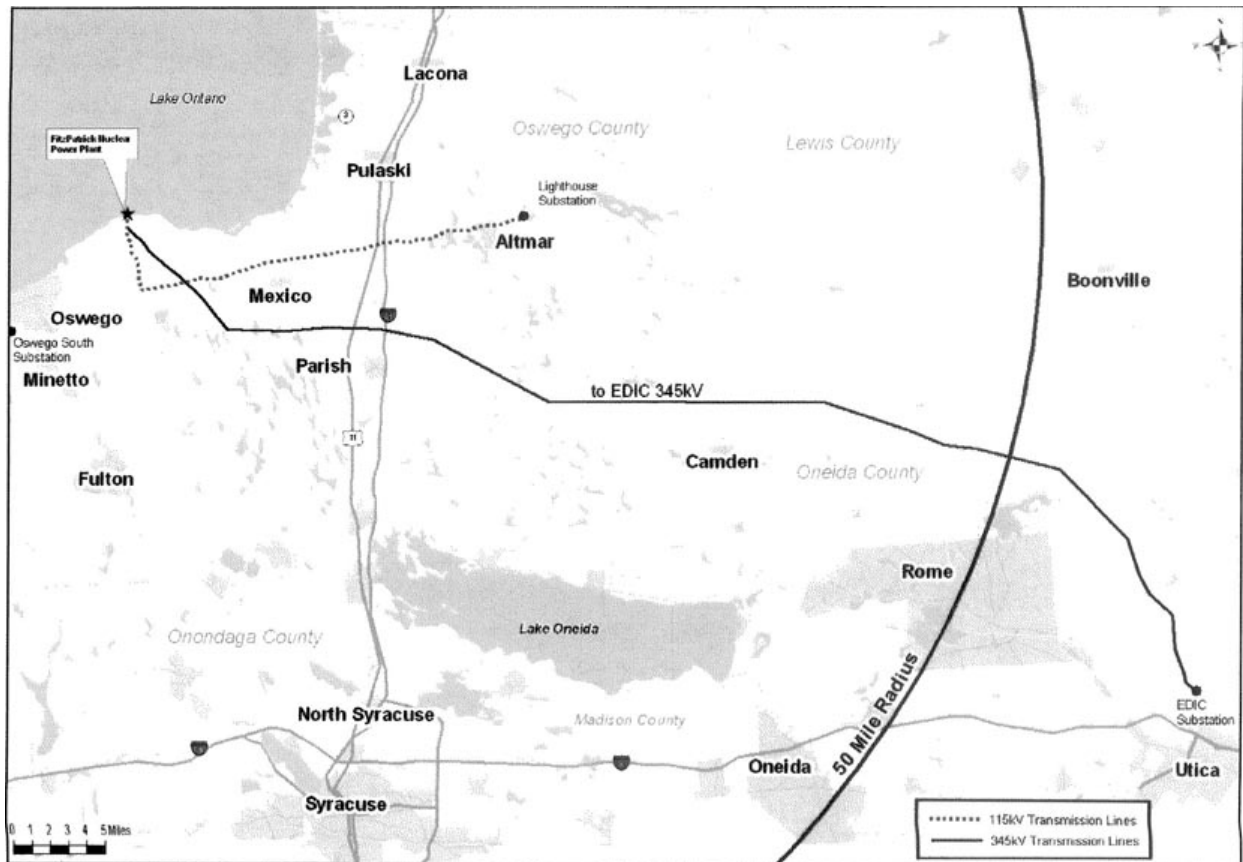


Figure 2. Map of JAFNPP Transmission Lines (Entergy 2006)

The transmission lines are shown in Figure 2. In total, about 98 mi of transmission lines are considered in this BA. The rights-of-way cover more than 1270 ac. The length of each line and the area covered by the rights-of-way associated with the line are listed in Table 1 (see next page).

Maintenance of the Edic and Scriba transmission lines is performed by NYPA. NYPA employs an integrated vegetation management approach that includes both mechanical and chemical control methods. This allows them to design the maintenance practices to fit the different kinds of terrain and soils that are crossed by the transmission lines. Mechanical methods include pruning, felling, mowing, and hand trimming. Chemical methods include the use of U.S. Environmental Protection Agency (EPA)-approved herbicides to control undesirable woody vegetation that may grow into the transmission lines. Over time, the combination of mowing and herbicides results in a community dominated by low-growing, shrubby and herbaceous plants that require less maintenance (NYPA 1998).

**Table 1.** JAFNPP Transmission Lines and Substations

<b>Transmission Line</b>	<b>Number of Lines</b>	<b>kV</b>	<b>Approximate Distance in km (mi)</b>	<b>Substation</b>
Edic	1	345	113 (70)	Edic Substation
Scriba	1	345	1.5 (0.9)	National Grid Scriba Substation
Lighthouse Hill	1	115	42 (26)	Lighthouse Hill Hydroelectric Station
NMPNS	1	115	1.1 (0.7)	NMPNS Unit 1

Source: Entergy 2006

#### **4.0 Environmental Setting**

JAFNPP is located in Oswego County, in northern New York, on the southern shore of Lake Ontario. Oswego, is approximately 7 mi southwest of the JAFNPP site, and Syracuse, New York is approximately 50 mi to the south southeast. NMPNS is situated immediately west of the JAFNPP site. Figure 3 shows the boundaries of JAFNPP in relation to Lake Ontario, NMPNS, and local roads. It also illustrates areas which are heavily vegetated or classified as ponds or wetlands (see next page).

The JAFNPP site is located within Erie and Ontario Lake Plain ecoregion, an area shaped by glacial erosion and deposition processes (NYSDEC 2006). After the last glacial period, the area was colonized by vegetation which probably consisted of upland forest and wetland communities (NRC 2006).

##### **4.1 Terrestrial Resources**

Typical natural communities in this area vary depending upon the underlying geology and soils, but include beech-maple, maple-basswood, and hemlock-northern hardwood forests; grasslands; shrub lands; and wetland communities (SUNY 2006a). When the property was purchased by Entergy, it was partially forested and used for recreation and residential purposes (Entergy 2006). The area was once used as an artillery range (AEC 1973). Currently, the area immediately around the plant is maintained in a landscaped condition. The majority of the property (600 acres) is not landscaped, and is expected to develop to climax communities unless disturbed.

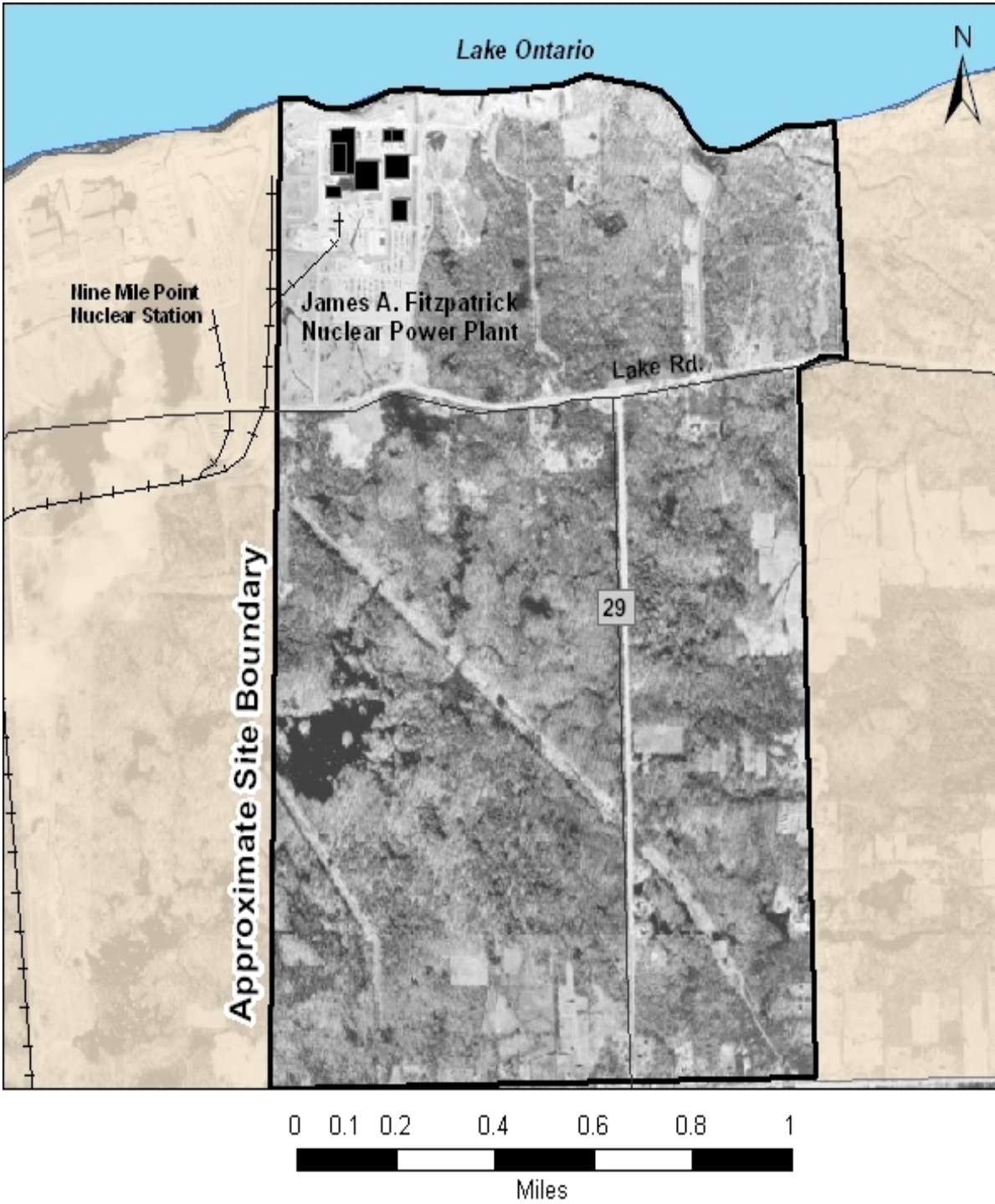


Figure 3. JAFNPP Approximate Site Boundary and Land Cover (Entergy 2006)

Dominant communities on the site include 66 percent forest, 21 percent open grasslands, and 10 percent wetlands and ponds (Entergy 2006). These areas are in various states of succession, ranging from early grassland/meadow communities in recently disturbed areas to secondary growth hardwood forests (Entergy 2006). Common tree species include sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), Canadian hemlock (*Tsuga canadensis*), white ash (*Fraxinus americana*), basswood/American linden (*Tilia americana*), black birch / sweet birch (*Betula lenta*), yellow poplar/tulip poplar (*Liriodendron tulipifera*), and oaks (*Quercus* spp.), including chestnut (*Q. prinus*), red (*Q. rubra*), black (*Q. velutina*), white (*Q. alba*), and bur oaks (*Q. macrocarpa*) (AEC 1973). Surveys for rare plants have not been performed at the site.

The U.S. Fish & Wildlife Service National Wetlands Inventory database indicates that there are wetland areas on site (FWS 2006b). While no formal wetland delineation activities have been performed, Entergy estimates that there are approximately 70 acres of wetlands and ponds on the property (Entergy 2006). Swamps and marshes containing arborvitae (*Thuja occidentalis*) and cattails (*Typha* spp.) are scattered throughout the area near the site (AEC 1973).

A variety of mammals, birds, reptiles, amphibians, and insects are commonly seen at the JAFNPP site and in the surrounding area. Reptiles including snakes, turtles, and tortoises may be found in the area, as well as amphibian species including frogs, toads, salamanders, and newts (SUNY 2006c). The area also hosts a wide variety of invertebrates, including a diversity of butterfly species (SUNY 2006a).

Migratory waterfowl frequent the site, including greater scaup (*Aythya marila*), golden eye (*Bucephala clangula*), merganser (*Mergus merganser*), canvasback, (*Aythya valisineria*), and oldsquaw (*Clangula hyemalis*), which congregate near the discharge area offshore (Entergy 2006). This area has been designated by the New York Natural Heritage Program as part of a waterfowl winter concentration area. Impingement of diving ducks has not been observed at JAFNPP, but has been an issue at NMPNS, which is adjacent to the facility (NRC 2006).

Other birds which may breed in the area include the red-shouldered hawk (*Buteo lineatus*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*A. cooperii*), common nighthawk (*Chordeiles minor*), red-headed woodpecker (*Melanerpes erthrocephalus*), horned lark (*Eremophila alpestris*), golden-winged warbler (*Vermivora chrysoptera*), cerulean warbler (*Dendroica cerulean*), vesper sparrow (*Pooecetes gramineus*), and grasshopper sparrow (*Ammodramus savannarum*) (NRC 2006).

Common small mammal species in the area include the white-footed mouse (*Peromyscus leucopus*), deer mouse (*P. maniculatus*), woodchuck (*Marmota monax*), meadow jumping mouse (*Zapus hudsonius*), meadow vole (*Microtus pennsylvanicus*), red squirrel (*Tamiasciurus hudsonicus*), raccoon (*Procyon lotor*), and cottontail rabbit (*Sylvilagus floridanus*) (NMPC 1985). Larger mammals include red and gray foxes (*Vulpes vulpes*, *Urocyon cinereoargenteus*), coyotes (*Canis latrans*), and white-tailed deer (*Odocoileus virginianus*) (SUNY 2006b).

There are four transmission lines that connect JAFNPP to other facilities and substations (Entergy 2006). See Table 2-1. The longest line, the Edic transmission line, is rated at 345 kV and runs approximately 70 mi southeast to the Edic Substation near Utica, New York. The corridor associated with this line is 150-ft wide and crosses Erie-Ontario Lake plain and fringe areas of Tug Hill plateau and the Mohawk Valley (AEC 1973). These areas are predominantly



forested, with some agricultural, low-density residential, and wetland areas (AEC 1973). Important resource areas crossed by this line include Catfish Creek, Butterfly Creek, the Little Salmon River, Mohawk River, Nine Mile Creek, numerous wetlands, and various state wildlife management areas. This corridor is 46 meters (150 ft) wide, and covers a total of more than 1270 ac.

The Edic line is owned and maintained by NYPA (Entergy 2006). The NRC staff met with NYPA personnel on December 4, 2006, to learn more about their transmission line maintenance program. NYPA maps land use and vegetative cover within the transmission corridor using a geographic information system. This information is used to develop a maintenance plan for each mapped parcel to remove only tall-growing species that may interfere with line operations, while allowing other species to grow. Dead trees that may fall into the lines are removed from the edges of the ROW by corridor maintenance personnel (NYPA 1998). Herbicides are applied to individual plants by licensed applicators only as needed to ensure that tall-growing vegetation does not interfere with line operations. Maintenance personnel follow the NYPA Systemwide Right-of-Way Management Plan (NYPA 1998).

The transmission line towers are constructed of weathering steel, which requires little maintenance and is less reflective than galvanized steel (AEC 1973). There is evidence that some portions of the transmission line corridor are used by off-road vehicles and hunters, but these activities appear to be limited in area and intensity. Two invasive exotic plant species, common reed (*Phragmites australis*) and Japanese knotweed (*Polygonum cuspidatum*), have been noted by NYPA personnel as occurring within the transmission corridor.

The second transmission line, rated at 115 kV, runs 26 mi east to the Lighthouse Hill Hydroelectric station, and is owned by National Grid (Entergy 2006). Because it was not constructed to initially connect the plant to the grid, it is not within the scope of the NRC's environmental review for license renewal.

Two lines run less than 1 mi west to the Scriba Substation and Nine Mile Point Nuclear Station. One line is rated at 115 kV and the other at 345 kV. The 115-kV line is owned by both the Nine Mile Point Nuclear Station and Entergy, while the 345-kV line is owned by NYPA (Entergy 2006). These lines cross landscaped areas between the two plants, which are maintained by periodic mowing.

## **5.0 Evaluation of Threatened and Endangered Species**

Three Federally listed species have been identified by the FWS website as potentially inhabiting Oswego and Oneida counties, which contain JAFNPP and the associated transmission line rights-of-way. Those Federally listed species are the bog turtle (*Clemmys muhlenbergii*), Indiana bat (*Myotis sodalis*), and piping plover (*Charadrius melodus*). Additionally, the applicant identified the bald eagle (*Haliaeetus leucocephalus*) and massasauga rattlesnake (*Sistrurus catenatus catenatus*) as potentially occurring near the site or transmission lines (Entergy 2006). The staff has prepared this BA to address the potential for impact to these species due to the continued operation of JAFNPP for an additional 20 years.

Habitat for some of the Federally listed species could potentially be found at JAFNPP or in the area traversed by JAFNPP transmission line rights-of-way; however, there are no known populations of any Federally listed species or critical habitat for any of the Federally listed

species on or near the proposed action area. Critical habitat for the piping plover is located approximately 11 mi to the east of the site, along the eastern shore of Lake Ontario, from the Salmon River in Oswego County to Stony Point in Jefferson County. No surveys specifically for endangered species have ever been conducted at JAFNPP or within the transmission corridors.

The NRC has reviewed life history information for the five species that potentially could occur in the vicinity of JAFNPP or the transmission line rights-of-way. The staff has also reviewed information provided by Entergy, FWS, and NYNHP regarding threatened and endangered species in the vicinity of the JAFNPP site and associated transmission line rights-of-way. The NRC has determined that the proposed action will have no effect upon the piping plover, and may affect, but is not likely to adversely affect the bog turtle, massasauga rattlesnake, Indiana bat, or bald eagle. Species listed as threatened or endangered by the FWS and have potential to occur in the vicinity of the JAFNPP site or along the transmission line rights-of-way are presented in Table 2. The basis for the determination for each species is provided.

**Table 2.** Federally Listed Terrestrial Species Reported From Counties Associated with JAFNPP and its Transmission Line Rights-of-Way

<b>Species</b>	<b>Common Name</b>	<b>Federal Status(a)</b>	<b>Counties</b>	<b>NRC Staff Determination</b>
<b>REPTILES</b>				
<i>Clemmys muhlenbergii</i>	bog turtle	T	Oswego, Oneida	May affect, not likely to adversely affect
<i>Sistrurus catenatus catenatus</i>	massasauga rattlesnake	C	Known in two unidentified locations in New York	May affect, not likely to adversely affect
<b>MAMMALS</b>				
<i>Myotis sodalis</i>	Indiana bat	E(S)	Oswego, Oneida (Only in Summer)	May affect, not likely to adversely affect
<b>BIRDS</b>				
<i>Charadrius melodus</i>	piping plover	T	Oswego; Critical Habitat - Eastern Lake Ontario shoreline from Salmon River (Oswego County) to Stony Point (Jefferson County)	No effect
<i>Haliaeetus leucocephalus</i>	bald eagle	T	Known in Jefferson and Cayuga counties, but not reported in Oswego or Oneida Counties.	May affect, not likely to adversely affect

Source: FWS 2007

## 5.1 Terrestrial Species

### ***Bog Turtle***

The northern population of the bog turtle (*Clemmys muhlenbergii*) was listed as a threatened species on November 4, 1997. The bog turtle is a small black turtle that lives in open sedge meadows and fens bordered by wooded areas (FWS 2001). The bog turtle's diet consists primarily of insects but also includes plants, frogs, and carrion (Bury 1979). The greatest threats to the bog turtle include the degradation and destruction of open wetland habitat and illegal collection (Groombridge 1982). The New York State Amphibian and Reptile Atlas (maps with 1990 to 1998 species occurrence data) notes an occurrence of the bog turtle in southwestern Oswego County (NYSDEC 2003b), and the NYSDEC notes that there are a series of bog turtle populations in the Lake Ontario basin (NYSDEC 2003a). The nearest known bog turtle site is approximately 12 miles from JAFNPP (Entergy 2006). There have been no sightings of the bog turtle at JAFNPP or along its associated in-scope transmission corridors (Entergy 2006). No surveys for the bog turtle have been performed within the transmission corridor or at the JAFNPP site.

One potential source of habitat loss within the transmission corridor is the colonization by common reed (*Phragmites australis*). The common reed establishes a dense monoculture that is unsuitable for many wetland species, including bog turtles (FWS 2001). In its discussions with NYPA, the NRC staff learned that common reed has been found within the FitzPatrick to Edic transmission line corridor.

Because the bog turtle depends on open wetlands, the removal of potentially tall-growing trees by the transmission corridor maintenance program might preserve potential bog turtle habitat. The proposed action of renewing the license for JAFNPP for an additional 20 years does not include any new construction activities within the corridor. NYPA personnel also take precautions near wetlands to avoid damage as a result of herbicide use (NYPA 1998). Therefore, direct impacts to the bog turtle from maintenance procedures are expected to be minimal.

The NRC staff visited the site and reviewed the life history of the bog turtle. Based on this information, the NRC staff determined that suitable habitat may be found within the transmission line rights-of-way. The NRC staff concludes that continued operation of JAFNPP over the 20-year license renewal term may affect, but is not likely to adversely affect the bog turtle.

### ***Massasauga rattlesnake***

The eastern massasauga rattlesnake is currently a candidate for Federal listing. Its range extends from Minnesota and Missouri to Ontario and New York, with the central New York region representing the eastern extent of its range in the United States. Massasauga rattlesnake habitat consists of shallow wetlands, including peatlands, marshes, sedge meadows, and swamp forest; and adjacent upland habitat, including open savannas, prairies, and old fields (FWS 2004b). The massasauga rattlesnake is not a forest-dwelling species, and forests impede their movements and dispersal. Woody vegetation removal is considered critical to maintaining suitable habitat for the massasauga rattlesnake (Ohio DNR 2004). Therefore, the removal of potentially tall-growing trees by the transmission corridor maintenance program might preserve potential habitat for the massasauga rattlesnake.

The New York State Amphibian and Reptile Atlas notes an occurrence of the eastern massasauga rattlesnake on the border of southeastern Oswego County and northeastern Onondaga County (NYSDEC 2003c). This location is not in or adjacent to JAFNPP or its transmission line rights-of-way. According to staff from Entergy, NYPA, and the New York Natural Heritage program, there have been no known occurrences of this species at JAFNPP nor along its transmission line rights-of-way.

The NRC staff visited the site and reviewed the life history of the massasauga rattlesnake. Based on this information, the NRC staff determined that suitable habitat may be found within the transmission line rights-of-way. Therefore, the NRC staff concludes that continued operation of JAFNPP over the 20-year license renewal term may affect, but is not likely to adversely affect the massasauga rattlesnake.

### ***Indiana Bat***

The endangered Indiana bat (*Myotis sodalis*) is a chestnut-brown, medium-sized bat that forages for insects near riparian and upland forests (FWS 1991). In the winter, these bats hibernate in caves or mines; in the summer, they form maternity colonies, roosting under the loose bark of recently dead trees. Females and juveniles forage in the summer in riparian and floodplain areas. Creeks are apparently not used if riparian trees have been removed. Males forage over floodplain ridges and hillside forests and usually roost in caves (FWS 1991).

Reasons for the decline of the Indiana bat include mortality due to natural hazards, human disturbance and destruction of hibernating bats, stream channelization, and deforestation, especially the removal of dead standing trees and trees near streams (FWS 1983). Forested wetland areas, including ponds and impoundments provide suitable foraging areas. Suitable summer roosting or maternal habitat consists of dead or living trees, with a diameter at breast height greater than or equal to 13 cm (5 in.), that have exfoliating or defoliating bark, cracks, crevices, or holes (NRC 2006).

The Indiana bat occurs in the Midwest and eastern U.S. from the western edge of the Ozark region in Oklahoma, to southern Wisconsin, east to Vermont, and as far south as northern Florida (FWS 1991). The Indiana bat is known to occur at hibernacula in Onondaga and Oswego counties, New York at distances of 29.8 km (18.5 mi) and 61.2 km (38 mi) from JAFNPP, respectively (NRC 2006). Because this distance is within the range that Indiana bats normally travel, it is possible that Indiana bats could reside at the facility or transmission line corridors, if suitable habitat is present and available. However, there have been no sightings of the Indiana bat at JAFNPP (Entergy 2006).

The NRC staff visited the site and reviewed the life history of the Indiana bat. Based on this information, the staff determined that suitable foraging and roosting habitat could be found within the transmission line rights-of-way. Due to continued efforts to restrict the growth of trees in the transmission corridor, it is unlikely that any trees would be allowed to grow to a size that would be suitable for supporting maternity colonies. Trees adjacent to the corridor may be removed if they present a potential threat to the operation of the transmission line. Therefore, the NRC staff concludes that continued operation of JAFNPP over the 20-year license renewal term may affect, but is not likely to adversely affect the Indiana bat.

### ***Piping Plover***

The piping plover is listed by FWS as threatened. It is a small, stocky, sandy-colored bird with a white underside and orange legs. It feeds on insects, spiders, and crustaceans on wide, flat, open, sandy beaches. Major threats include habitat loss and degradation, predation, and nest disturbance. It is a migratory bird, breeding in northern United States and Canada in the spring and summer, and wintering along the coast of the Gulf of Mexico or in other southern locations. The piping plover nests on the shorelines of the Great Lakes, the shores of rivers and lakes in the Northern Great Plains, and along the Atlantic Coast (FWS 2000).

Critical habitat for the piping plover does not occur at JAFNPP or adjacent to associated transmission line rights-of-way, but does occur east of the site, on the shore of Lake Ontario from the Salmon River to Stony Point (Entergy 2006, 66 FR 22938). Suitable nesting or foraging habitat is not known to occur at the JAFNPP site or along the transmission line rights-of-way, but transient occurrences at the JAFNPP site are possible (Entergy 2006).

The NRC staff visited the site and reviewed the life history and critical habitat information of the piping plover. Based on this information, the NRC staff determined that suitable nesting and foraging habitat is not present at the JAFNPP site or along the transmission line rights-of-way. Therefore, the staff concludes that continued operation of JAFNPP over the 20-year license renewal term would have no effect on the piping plover.

### ***Bald Eagle***

The bald eagle, found throughout the United States, is listed by FWS as threatened. It is a large dark brown bird of prey with a white head and tail. The bald eagle's diet consists mainly of fish, but it will eat a great variety of mammals, amphibians, crustaceans, and birds, including waterfowl. Its breeding range is associated with aquatic habitats (coastal areas, river, lakes, and reservoirs) with forested shorelines or cliffs in North America. They select large, super-canopy roost trees that are open and accessible, usually conifers. They winter primarily in coastal estuaries and river systems of the lower 48 states and Alaska (FWS 2004a). The bald eagle is not found in the vicinity of JAFNPP or associated rights-of-way, but transient occurrences at the JAFNPP site are possible (Entergy 2006). It is possible that bald eagles could collide with structures and electrical lines associated with JAFNPP, but no such collisions have yet been reported.

The NRC staff visited the site and reviewed the life history information on the bald eagle. Based on this information, the NRC staff concludes that continued operation of JAFNPP over the 20-year license renewal term may affect, but is not likely to adversely affect, bald eagles.

## **5.2 Aquatic Species**

No Federally listed aquatic species have been identified as occurring in Lake Ontario or the State of New York.

## **6.0 Conclusions**

The staff has identified five Federally listed endangered, threatened, and candidate species that are under full or partial FWS jurisdiction that have a reasonable potential to occur in the vicinity of JAFNPP or along the transmission line rights-of-way, and therefore may be affected by

continued operations of JAFNPP and maintenance of the associated transmission line rights-of-way. Of these, three Federally listed species have been reported to occur in Oswego and Oneida counties, which contain JAFNPP and the associated transmission rights-of-way.

The NRC staff has analyzed the species that are likely to be in the vicinity of JAFNPP or the associated transmission lines; the known distributions and records of those species; the ecological impacts of the operation of JAFNPP and the operation and maintenance of the associated transmission rights-of-way; the effects of these practices on the species potentially present; and the mitigation measures that Entergy has already implemented. Based on this analysis, the staff has determined that continued operation of JAFNPP and its associated transmission lines for an additional 20 years would have no effect upon the piping plover, and may affect, but is not likely to adversely affect the bog turtle, massasauga rattlesnake, Indiana bat, or bald eagle.

## 7.0 References

10 CFR Part 51. Code of Federal Regulations, Title 10, Energy, Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

10 CFR Part 54. Code of Federal Regulations, Title 10, Energy, Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants."

66 FR 36038. July 9, 2001. "Endangered and Threatened Wildlife and Plants; Final Determinations of Critical Habitat for Wintering Piping Plovers; Final Rule." Federal Register, U.S. Fish and Wildlife Service.

66 FR 22938. May 7, 2001. "Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for the Great Lakes Breeding Population of the Piping Plover; Final Rule." Federal Register, U.S. Fish and Wildlife Service.

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