

State and Federal Agency Consultation Letters and Responses

Peach Bottom Atomic Power Station Environmental Report – Operating License Renewal Stage

SPECIAL STATUS SPECIES



Exelon Generation

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September 26, 2017

U.S. Fish and Wildlife Service Pennsylvania Field Office
Endangered Species Section
110 Radnor Road, Suite 101
State College, PA 16801

Re: Peach Bottom Atomic Power Station, Units 2 and 3
Second Renewal of U.S. Nuclear Regulatory Commission Operating Licenses
Request for Information on Federally Protected Species

Dear Sir or Madam:

In the third quarter of 2018, Exelon Generation Company, LLC (Exelon Generation; a subsidiary of Exelon Corporation) plans to apply to the U.S. Nuclear Regulatory Commission (NRC) for the second renewal of the operating licenses for Peach Bottom Atomic Power Station (PBAPS) Units 2 and 3. Renewal by the NRC of the operating licenses would give Exelon Generation and the State of Pennsylvania the option of relying on PBAPS to meet future baseload power generating needs. Unit 2 began operating in 1973, and the existing license for Unit 2 will expire in August 2033. Unit 3 began operating in 1974, and the existing license for Unit 3 will expire in July 2034. The renewal term for each unit would be an additional twenty years beyond the existing license expiration date.

The NRC requires that license renewal applications include environmental reports assessing potential environmental impacts from license renewal activities. One such impact would be effects of license renewal activities on species that are listed or proposed for listing as threatened or endangered in accordance with the Endangered Species Act (ESA) (16 USC 1531, et seq.) and on important plant and animal habitats, including critical habitats as defined by the ESA as well as essential fish habitat as identified under the Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801, et seq.) (10 CFR 51.53(c)(3)(ii)(E)). Accordingly, we are contacting you to obtain input for use in addressing these effects in the PBAPS second license renewal environmental report. Later, NRC may also request an informal consultation with your office under Section 7 of the ESA (16 USC 1536(a)).

Activities during the License Renewal Terms

PBAPS second license renewal will involve no new construction, refurbishment, ground disturbing activities, changes to operations, or changes to existing land-use conditions. Operation and maintenance activities during the terms of the renewed PBAPS licenses are only expected to occur in previously disturbed areas or existing rights-of-way (ROWs). Hence, no new adverse impacts to threatened or endangered species, critical habitats, or essential fish habitat are anticipated from the second license renewal.

Project Features

PBAPS existing features that are relevant to the effects on special status species during the renewed license terms include the following:

1. The PBAPS plant site, which hosts the two generating units, is located on 620 acres of Exelon Generation-owned property located near Delta, Pennsylvania, primarily in Peach Bottom Township, York County, Pennsylvania on the west side of Conowingo Pond, which was created by the construction of the Conowingo dam on the Susquehanna River in 1928. The area within 6 miles of the site includes parts of York and Lancaster Counties in Pennsylvania and sections of Harford and Cecil Counties in Maryland.
2. PBAPS is approved by the Susquehanna River Basin Commission (SRBC) to withdraw water from the Conowingo Pond to cool the condensers in a once-through heat dissipation system. Second license renewal requires no change to this authorization. The principal components of the circulating water system are the outer intake structure, intake basins, inner intake structure, condensers, discharge basin, helper cooling towers, discharge canal, and discharge structure.
 - a. Cooling water is withdrawn at a 148-meter-long (487-foot-long) outer intake structure on the west bank of Conowingo Pond.
 - b. After passing through the outer intake structure and travelling screens, circulating water enters a system of intake basins, followed by screens, and pumps, which comprise the inner intake structure. From the inner intake structure, the circulating water is pumped through the two main condensers where steam exiting the plant's turbine generators is cooled.
 - c. Heated cooling water from both units is discharged from the condensers into a cooling water discharge pond that directs the cooling water to the helper cooling towers and/or into the 1,430 m-long (4,700 ft-long) discharge canal, which carries it back to Conowingo Pond.
3. Discharges to Conowingo Pond of heated cooling water and other wastewaters are authorized by NPDES Permit No. PA0009733. Among the discharge limitations specified in the NPDES permit are (1) a requirement to implement the PBAPS procedure for reducing the temperature of water in the discharge canal when such water reaches 110 degrees F and (2) a requirement to operate the cooling towers during specific times and conditions. Second license renewal requires no change to the NPDES Permit.
4. Existing PBAPS transmission system components that would be removed from service if the NRC did not approve second license renewal are relevant to the effects on special status species of second license renewal. Such components include the following:

- a. Two 500-kV generator tie lines, which traverse only onsite property used for industrial purposes and serve to connect the main power transformer of each unit to its onsite substation (south substation for Unit 2 and north substation for Unit 3).
- b. One 34.5-kV submarine cable, which supplies power to the PBAPS units for safe shutdown if all other offsite power supplies as well as power from onsite diesel generators is unavailable. This 34.5-kV submarine cable is powered from the 33 kV bus at Susquehanna Substation (adjacent to the Conowingo Dam) and is routed either underwater or underground for most of its length before connecting to the PBAPS Station Blackout substation located near Unit 1.
- c. Three sources of startup auxiliary power that connect to 13-kV startup switchgear at the station:
 - i. A 220-kV line that traverses only onsite property used for industrial purposes and connects to the plant from equipment located near the north substation.
 - ii. An onsite, underground, dedicated 13-kV line that connects to the plant from equipment located near the north substation.
 - iii. An onsite, mostly underground, dedicated 13-kV line that connects to the plant from equipment collocated with the north substation.

The enclosed Figure 1 shows the locations of the existing PBAPS project features relevant to the effects of second license renewal on federally protected species and habitats as well as the full extent of the project area for the second license renewal.

Identification of Threatened and Endangered Species Resources

Using the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Tool, a web-based application sponsored by the Pennsylvania Natural Heritage Program (PNHP), Exelon Generation has reviewed the potential for the PBAPS second license renewal to adversely affect known occurrences of species or natural communities of concern. The enclosed receipt for PNDI search ID PNDI-617811 contains a request from the USFWS for a Bog Turtle Habitat (Phase 1) Survey completed by a qualified bog turtle surveyor. In response, the completed survey forms and corresponding memorandum are also enclosed.

Although not identified in the PNDI receipt, bald eagles (*Haliaeetus leucocephalus*) are known to occur on the PBAPS site. Because the bald eagle is protected under the Bald and Golden Eagle Protection Act, a Bald Eagle Project Screening Form was completed, and it is enclosed as well.

Because the second license renewal involves no new construction, refurbishment, ground disturbing activities, changes to operation, or changes to existing land-use conditions, Exelon Generation does not expect PBAPS second license renewal to adversely affect ecologically significant habitats or any federally protected species located near the PBAPS site, circulating water supply system, or transmission facilities. Nevertheless, we are requesting your help to identify issues we may have overlooked that need to be addressed in the PBAPS second license renewal environmental report. We are also interested in learning of any information your

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staff believes could help expedite the NRC's review of the PBAPS second license renewal application. Hence, in closing, we would appreciate receiving a response from you detailing such issues and information for the PBAPS site. We would also welcome your confirmation of our conclusion that PBAPS second license renewal would not adversely affect ecologically significant habitats or any federally protected species.

Because we plan to incorporate a copy of your response, as well as this letter, into the PBAPS second license renewal environmental report that will be submitted to the NRC as part of the PBAPS second license renewal application, your response will be most helpful if we receive it by November 10, 2017.

Please call Nancy Ranek (610-765-5369) of my staff if there are questions or you require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael P. Gallagher", with a stylized flourish at the end.

Michael P. Gallagher

Enclosures:

1. Figure 1 Site Boundary
2. Receipt for PNDI Search ID PNDI-617811
3. Bog Turtle Habitat (Phase 1) Survey
4. Bald Eagle Project Screening Form

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USFWS – Enclosure 1

ENCLOSURE 1

Figure 1 Site Boundary

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USFWS – Enclosure 2

ENCLOSURE 2

Receipt for PNDI Search ID PNDI-617811

1. PROJECT INFORMATION

Project Name: **PBAPS_DraftER2016**

Date of Review: **9/21/2017 02:26:19 PM**

Project Category: **Energy Storage, Production, and Transfer, Energy Production (generation), Other**

Project Area: **774.51 acres**

County(s): **Lancaster; York**

Township/Municipality(s): **DRUMORE; FULTON; PEACH BOTTOM**

ZIP Code: **17314**

Quadrangle Name(s): **DELTA; HOLTWOOD**

Watersheds HUC 8: **Lower Susquehanna**

Watersheds HUC 12: **Fishing Creek-Susquehanna River**

Decimal Degrees: **39.756246, -76.270233**

Degrees Minutes Seconds: **39° 45' 22.4849" N, 76° 16' 12.8400" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	Potential Impact	MORE INFORMATION REQUIRED, See Agency Response

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

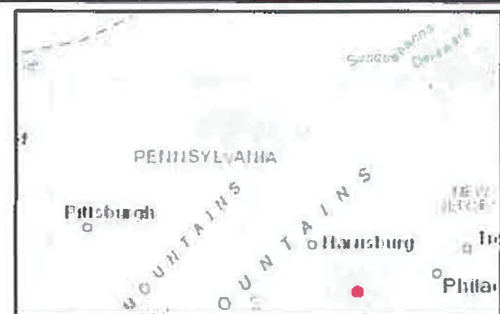
Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 must comply with the bog turtle habitat screening requirements of the PASPGP.

PBAPS_DraftER2016

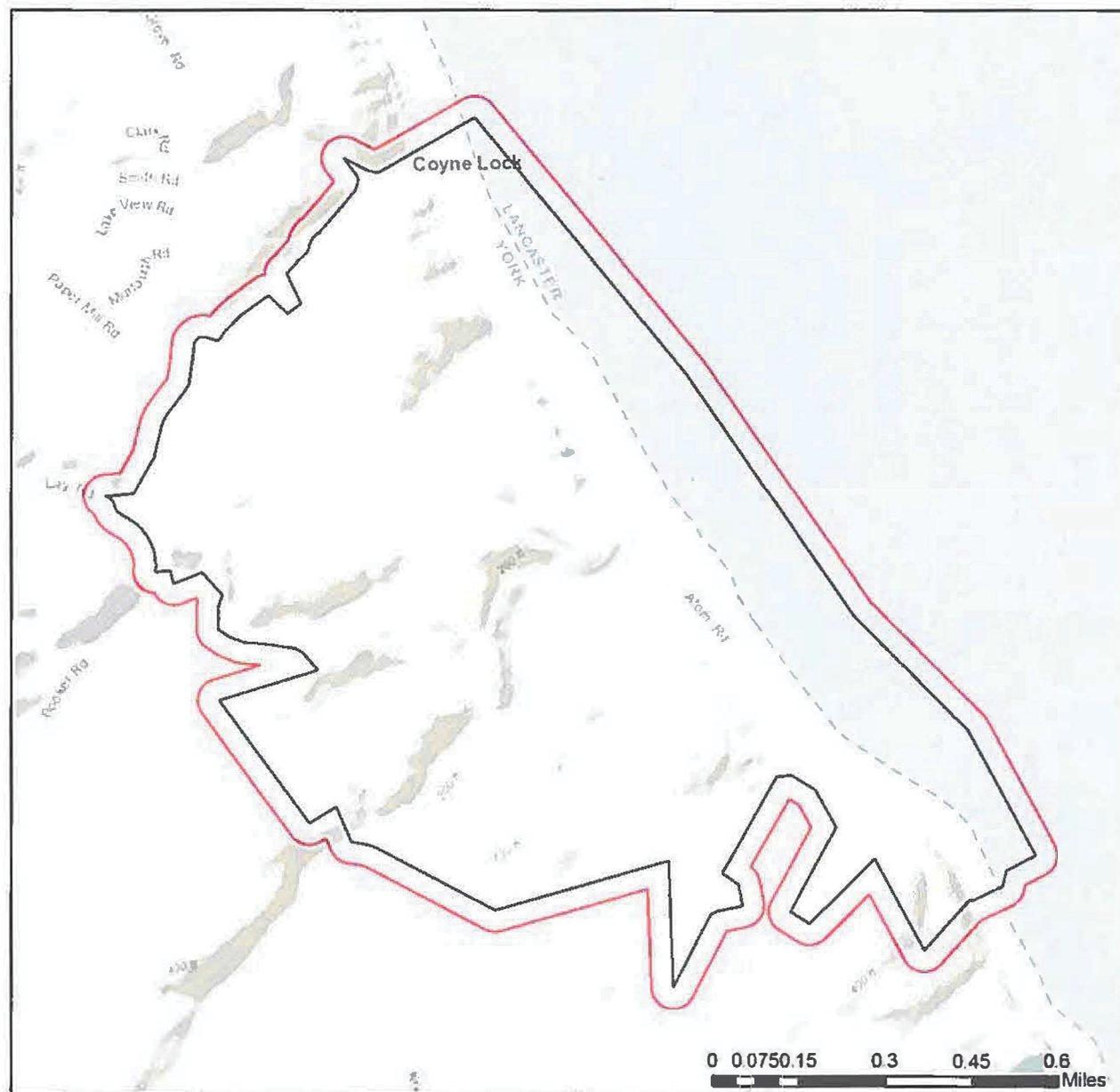


- ☐ Project Boundary
- ☐ Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user

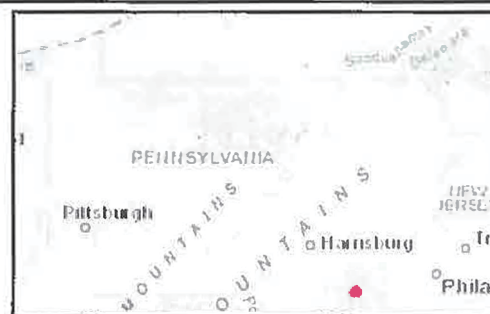


PBAPS_DraftER2016



- ☐ Project Boundary
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Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



RESPONSE TO QUESTION(S) ASKED

Q1: Which of the following closest describes the proposed project?

Your answer is: A well or other groundwater extraction (e.g., groundwater pumping to facilitate mining, pump-and-treat operation) is proposed as part of this project, or in order to support some aspect of the project, but less than 1000 gallons per day will be extracted.

Q2: Are there any perennial or intermittent waterways (rivers, streams, creeks, tributaries) in or near the project area, or on the land parcel?

Your answer is: Yes

Q3: Describe how wastewater (effluent) will be handled (select one). For the purpose of this question, wastewater/effluent does not include stormwater runoff. If the project involves solely the renewal or modification of an existing discharge permit (e.g., NPDES permit), select from options 3, 4, 5, or 6 below.

Your answer is: Some or all wastewater/effluent from this project/activity will be discharged to a waterway (river or stream), and the discharge (including the existing discharge, plus any additional discharge) will exceed 5000 gallons/day.

Q4: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected – either directly or indirectly – by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.

Your answer is: The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands.

Q5: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).

Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q6: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?

Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

DCNR Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here:

<https://conservationexplorer.dcnr.pa.gov/content/survey-protocols>)

Scientific Name	Common Name	Current Status	Proposed Status	Survey Window
Asplenium pinnatifidum	Lobed Spleenwort	Special Concern Species*	Special Concern Species*	Year-round (evergreen)
Erigenia bulbosa	Harbinger-of-spring	Threatened	Special Concern Species*	Flowers March - April
Ilex opaca	American Holly	Threatened	Threatened	Flowers May - early June, fruits October - winter; evergreen leaves
Sensitive Species**		Special Concern Species*	Threatened	

PA Fish and Boat Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Percina bimaculata	Chesapeake Logperch	Threatened

U.S. Fish and Wildlife Service

RESPONSE:

Information Request: Conduct a Bog Turtle Habitat (Phase 1) Survey in accordance with USFWS Guidelines for Bog Turtle Surveys (April 2006). Evaluate all wetlands within 300 feet of the project area, which includes all areas that will be impacted by earth disturbance or project features (e.g., roads, structures, utility lines, lawns, detention basins, staging areas, etc.). IF THE PHASE 1 SURVEY IS DONE BY A QUALIFIED BOG TURTLE SURVEYOR (see <https://www.fws.gov/northeast/pafo/endangered/surveys.html>): 1) Send positive results to USFWS for concurrence, along with a project description documenting how impacts will be avoided. OR, conduct a Phase 2 survey and send Phase 1 and 2 results to USFWS for concurrence. 2) Send a courtesy copy of negative results to USFWS (label as "Negative Phase 1 Survey Results by Qualified Bog Turtle Surveyor: USFWS Courtesy Copy"). USFWS approval of negative results is not necessary when a qualified surveyor does the survey in full accordance with USFWS guidelines. IF THE PHASE 1 SURVEY IS NOT DONE BY A QUALIFIED SURVEYOR: Send ALL Phase 1 results to USFWS for concurrence, and if potential habitat is found, also send a project description documenting how impacts will be avoided. As a qualified bog turtle surveyor, I _____ (name) certify that I conducted a Phase 1 survey of all wetlands in and within 300 feet of the project area on _____ (date) and determined that bog turtle habitat is absent.

_____ (Signature)

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).

*Note: U.S.Fish and Wildlife Service requires applicants to mail project materials to the USFWS PA field office (see AGENCY CONTACT INFORMATION). USFWS will not accept project materials submitted electronically (by upload or email).

Check-list of Minimum Materials to be submitted:

___ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

___ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

___ SIGNED copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

___ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

___ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Emily Phelan
Company/Business Name: AECOM
Address: 625 W. Ridge Pike, Suite E-100
City, State, Zip: Conshohocken, PA 19428
Phone: (610)832-3651 Fax: (610)832-3501
Email: emily.phelan@aecom.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Phelan,
Emily
applic project proponent signature

Digitally signed by
Phelan, Emily
Date: 2017.09.21
15:00:36 -04'00'

9/21/2017
date

September 26, 2017
USFWS – Enclosure 3

ENCLOSURE 3

Bog Turtle Habitat (Phase 1) Survey

Memorandum

To	Nancy Ranek, License Renewal Environmental Lead, Exelon Generation LLC
CC	Deborah Poppel, Carrie Cunnane
Subject	Peach Bottom Atomic Power Station: Phase I Bog Turtle Habitat Evaluation (AECOM Project No. 60509072)
From	Gavin McBrien
Date	September 20, 2017

On August 30, 2017, AECOM biologists Deborah Poppel and Gavin McBrien visited the Peach Bottom Atomic Power Station (PBAPS) located in Peach Bottom Township, York County, Pennsylvania to conduct a Phase I bog turtle habitat evaluation. Investigations were conducted to support the PBAPS Second License Renewal Environmental Report. The project study area consisted mainly of streamside wetlands along an unnamed tributary to the Susquehanna River, and vegetated basins located within developed portions of the facility associated with the discharge canal and water impoundments for the site's operations (Project Study Area).

Five wetlands were identified within the Project Study Area, however, none of the wetlands contained suitable bog turtle habitat. The following sections describe the methods used, present the results of the Phase I bog turtle habitat assessment, and provide a brief summary and conclusion. A figure depicting the identified wetlands is provided; a photographic log is included in Attachment A; and copies of the bog turtle habitat evaluation forms are included in Attachment B.

METHODS

Prior to the field delineation, a desktop data review of existing information was conducted to assess the potential presence of waterways, wetlands, and/or wetland indicators within the PBAPS property boundary. Information reviewed included:

- United States Geological Survey (USGS) topographic maps;
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soil survey maps at <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> (USDA/NRCS; Accessed September 2017); and
- United States Fish and Wildlife Services' (USFWS) National Wetland Inventory (NWI) Wetland Mapper at <http://www.fws.gov/wetlands/Data/Mapper.html> (USFWS, Accessed September 2017).

Based on the desktop review, NWI mapping identified the potential for wetlands to occur near the discharge canal located on the southeast portion of the site adjacent to the Susquehanna River. Field survey efforts were focused on areas identified during the desktop review to likely contain wetlands. A full wetland delineation was not conducted onsite; however, additional reconnaissance level surveys were conducted within the grass hillsides outside of the existing electric transmission line rights-of-way to the west and upslope of the facility and no wetlands were identified.

Following the desktop review, AECOM biologists conducted a visual presence/absence survey to determine if any areas satisfied the three wetland criteria, i.e., wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation. These were limited to the basins located on site in the locations of former cooling towers and streamside wetlands. In these specific areas, a Phase I bog turtle survey was conducted in accordance with the USFWS *Guidelines for Bog Turtle Surveys*

AECOM

Memorandum

(2006). Bog turtle habitat is recognized by three criteria: suitable hydrology (including spring seeps, shallow surface water, persistently saturated soils, subsurface flow, and rivulets), suitable soils (including bottom substrate of soft muck, a critical criterion), and suitable vegetative structure (including dominant vegetation of low grasses and sedges such as reed canary grass, cattail, rice cut grass, *Phragmites*, or skunk cabbage), and possibly a scrub-shrub wetland component with a relatively open canopy. Information for the habitat assessment for each wetland is presented on the USFWS/PFBC Bog Turtle Habitat Evaluation Field Form; copies of these assessments are located in Attachment B.

RESULTS

AECOM biologists Deborah Poppel and Gavin McBrien conducted a Phase I bog turtle habitat assessment within the Project Study Area on August 30, 2017. The Project Study Area consisted largely of roadways or paved areas surrounding buildings for the site's operations, and areas of open water associated with the discharge canal or basins for the cooling towers. Weather conditions at the time of survey were sunny and 75 °F, with precipitation in the previous 24 hours.

Five wetlands were identified within the study area and investigated for potential bog turtle habitat (Wetlands A through E) (Figure 1). Wetland A is a wetland complex containing palustrine emergent wetland (PEM) and palustrine forested wetland (PFO) components, however, the majority of the wetland consists of palustrine open water (POW) habitat. Wetland B and C are PEM wetlands located within the floodplain of an unnamed tributary to the Susquehanna River, and wetlands D and E are PEM and PEM/PFO wetland complexes, respectively, located in abandoned concrete basins that were previously associated with cooling towers and have since become abandoned and filled with silt.

No wetlands were determined to contain the conditions required to be considered potential bog turtle habitat within the study limits. None of the wetlands are associated with spring fed hydrology, the wetlands substrate is not mucky, and the vegetative structures are not consistent with the conditions typical of potential bog turtle habitat. In addition, the wetlands are all located within the floodplain of the Susquehanna River and are susceptible to flooding and inundation.

SUMMARY AND CONCLUSIONS

On August 30, 2017, AECOM biologists Deborah Poppel and Gavin McBrien visited the Peach Bottom Atomic Power Station (PBAPS) located in Peach Bottom Township, York County, Pennsylvania to conduct a Phase I bog turtle habitat evaluation to support the PBAPS Second License Renewal Environmental Report. Five wetlands were identified within the Project Study Area; however, none of the wetlands contain suitable bog turtle habitat.

AECOM

Memorandum

REFERENCES

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetland and deepwater habitats of the United States. United States Department of the Interior, Fish and Wildlife Service. 131 pp.
- Environmental Laboratory. 1987. *Corps of Engineers, Wetlands Delineation Manual*. Wetland Research Program Technical Report Y-87-1. 117 pp.
- United States Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0, ed. J. F. Berkowitz, J. S. Wakeley, R. W. Lichvar, C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- United States Department of Agriculture (USDA) and Natural Resources Conservation Service (NRCS). 2013. Web Soil Survey Maps.
<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>. Accessed August, 2017.
- United States Fish and Wildlife Service (USFWS). 2016. National Wetland Inventory (NWI) Maps.
<http://www.fws.gov/wetlands/Data/Mapper.html>. Accessed August, 2017.
- USFWS. 2006. Guidelines for Bog Turtle Surveys. Appendix A-Bog Turtle (Northern Population) Recovery Plan



AECOM

625 West Ridge Pike, Suite E-100
Conshohocken, PA 19428
Phone: (610) 832-3500 Fax: (610) 832-3501

Job: 60509072

Prepared by: CS

Checked by: GM

Date: 9/19/2017

Figure 1
Phase 1 Bog Turtle Habitat Survey

Peach Bottom Atomic Power Station
Peach Bottom, PA

AECOM
Memorandum

Appendix A
Photographic Log



PHOTOGRAPHIC LOG



Client Name: Exelon Generation Company, LLC		Site Location: Peach Bottom Atomic Power Station, York County, PA	Project No. 60509072
Photo No. 1	Date: 8/30/17		
Direction Photo Taken: South			
General Description: Wetland A			

Photo No. 2	Date: 8/30/17	
Direction Photo Taken: West		
Description: Wetland B		



PHOTOGRAPHIC LOG



Client Name: Exelon Generation Company, LLC		Site Location: Peach Bottom Atomic Power Station, York County, PA	Project No. 60509072
Photo No. 3	Date: 8/30/17		
Direction Photo Taken: East			
General Description: Wetland C			

Photo No. 4	Date: 8/30/17	
Direction Photo Taken: North		
Description: Wetland D		



PHOTOGRAPHIC LOG


Client Name: Exelon Generation Company, LLC		Site Location: Peach Bottom Atomic Power Station, York County, PA	Project No. 60509072
Photo No. 5	Date: 8/30/17		
Direction Photo Taken: North			
General Description: Wetland E			

Photo No. 6	Date: 8/30/17	
Direction Photo Taken: South		
Description: Open water in discharge canal.		

AECOM
Memorandum

Appendix B
Wetland Data Sheets

USFWS / PFBC Bog Turtle Habitat Evaluation Field Form¹
(revised 06/01/2006)

Project/Property Name: Exelon - Peach Bo Home Atomic Power
Project type: Power Plant Station
Applicant/Landowner Name: Exelon Power
County: York Quad: _____ Township/Municipality: Delta
PNDI # _____ Potential conflict with USFWS species? ☒ Y ☐ N

ACTION AREA²

Action area size: _____ Does the Phase 1 survey include all wetlands in the action area? ☒ Y ☐ N³

WETLAND ID: A PHOTOS TAKEN: ☒ Yes ☐ No WETLAND SIZE: _____ acres

Wetland size estimation - If actual acreage is not known at time of investigation, check one:

☐ < 0.1 acre ☐ 0.1-0.5 acre ☒ 0.5 to < 1 acre ☐ 1-2 acres ☐ 2-4 acres ☐ 5+ acres ☐ 10+ acres

WETLAND LOCATION: Lat _____ Long _____
(approximate center of wetland) GPS Datum (check one): ☐ NAD 27 ☐ NAD 83 ☐ WGS 84

(see figure)

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/30/17 Time In: 10:30 am Time Out: 10:45 am
Last precipitation: ☒ < 24 hours ☐ 1-7 days ☐ > 1 week ☐ unknown Drought conditions? ☐ Y ☒ N ☐ Unknown

How much of this wetland is located off-site (i.e., outside the property boundaries or right-of-way)?

☒ none of it - the entire wetland is within the property boundaries (skip next 2 questions)
☐ some of it - _____ acres or _____ % of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the off-site portion was surveyed (on foot)?

☐ none of it ☐ all of it ☐ part of it (_____ % or _____ acres of the off-site portion)

How much of the off-site portion of this wetland is visible (e.g., from the subject property or from a public road)?

☐ all of it ☐ part of it (at least _____ acres) ☐ none of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐ Y ☒ N ☐ Unknown

If yes, could they be potential bog turtle habitat? ☐ Y ☐ N ☐ Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):

nuclear power plant, cooling tower basins, Susquehanna River

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒ PEM 30 ☐ PSS _____ ☒ PFO 10 ☒ POW 60

☒ Y ☐ N Are there any signs of disturbance to hydrology (ditching, filling, ponds, roads, etc.)? If yes, describe

logs

☐ Y ☒ N Are there any signs of disturbance to vegetation (mowing, pasturing, burning, etc.)? If yes, describe

Project Name Peach Bottom Wetland W (con't)

Hydrology

- ☐ Y ☒ N Springs or seeps ☐ visible or ☐ likely? Watercress present? ☐ Yes ☒ No
☐ Y ☒ N Spring houses in or adjacent to wetland?
☒ Y ☐ N Saturated soils present? If yes, year-round? ☐ Likely ☐ Unlikely ☐ Unknown
☒ Y ☐ N Water visible on surface? Check all that apply: ☐ small puddles/depressions (___" deep)
☐ rivulets (___" deep) ☒ larger pools/ponds (6" deep) → 24"
☒ Y ☐ N Evidence of flooding? If yes, describe indicators river flood bottom

Soils Mapping Unit (optional):

Field observations confirm mapped type? ☐ YES ☐ NO ☒ Unknown

Soils – PEM Portion of Wetland			
Mucky ⁴ ? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	How much of it (PEM) is mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input type="checkbox"/> >70%	Mucky soils range in depth from: ___ to ___"	Most of the mucky part(s) of the wetland can be probed ⁵ : <input type="checkbox"/> 3-5" <input type="checkbox"/> 6-8" <input type="checkbox"/> 9-11" <input type="checkbox"/> ≥12"
Non-mucky ⁶ ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	How much of it (PEM) is non-mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input checked="" type="checkbox"/> >70%		

Soils – PSS and PFO Portions of Wetland <u>sediment is soft/muddy</u>			
Mucky ⁴ ? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	How much of it is mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input type="checkbox"/> >70%	Mucky soils range in depth from: ___ to ___"	Most of the mucky part(s) of the wetland can be probed ⁵ : <input type="checkbox"/> 3-5" <input type="checkbox"/> 6-8" <input type="checkbox"/> 9-11" <input type="checkbox"/> ≥12"

Wetland Vegetation (characterize the wetland as a whole)

Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).

- ☐ sedges ☐ rushes ☐ skunk cabbage ☐ cattail ☐ sweet flag ☒ smartweed ☐ sphagnum moss
☐ sensitive fern ☐ rice cutgrass ☐ tearthumb ☐ reed canary grass ☒ Phragmites ☐ purple loosestrife
☐ alder ☐ dogwood ☐ red maple ☐ willow ☐ poison sumac ☐ multiflora rose ☒ box elder, spicebush
Additional dominant species: duckweed, water lily, arrowweed

Herptiles

Were any bog turtles observed? ☐ YES? ☒ NO If yes, how many? _____

Other herptiles ☐ observed ☐ previously observed: _____

Additional Comments/Observations: (use additional sheets if necessary)

INVESTIGATOR'S OPINION

- ☐ YES ☒ NO ☐ UNSURE The hydrology criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE The soils criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE The vegetation criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE This wetland is potential bog turtle habitat.

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Deborah Bepe
Investigator's Name (prin ,

Deborah Bepe
Investigator's Signature

8/30/17
Date

USFWS / PFBC Bog Turtle Habitat Evaluation Field Form¹
(revised 06/01/2006)

Project/Property Name: Exelon - Reach Bottom Atomic Power Sta.
Project type: Power Plant - Relicensing
Applicant/Landowner Name: Exelon
County: York Quad: _____ Township/Municipality: Delta
PNDI # _____ Potential conflict with USFWS species? ☒ Y ☐ N

ACTION AREA²

Action area size: _____ Does the Phase 1 survey include all wetlands in the action area? ☒ Y ☐ N³

WETLAND ID: B PHOTOS TAKEN: ☒ Yes ☐ No WETLAND SIZE: _____ acres

Wetland size estimation - If actual acreage is not known at time of investigation, check one:

☐ < 0.1 acre ☒ 0.1-0.5 acre ☐ > 0.5 to < 1 acre ☐ 1-2 acres ☐ 2-4 acres ☐ 5+ acres ☐ 10+ acres

WETLAND LOCATION: Lat _____ Long _____
(approximate center of wetland) GPS Datum (check one): ☐ NAD 27 ☐ NAD 83 ☐ WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/30/17 Time In: 10:50am Time Out: 11:05am
Last precipitation: ☒ < 24 hours ☐ 1-7 days ☐ > 1 week ☐ unknown Drought conditions? ☐ Y ☒ N ☐ Unknown

How much of this wetland is located *off-site* (i.e., outside the property boundaries or right-of-way)?

☒ none of it - the entire wetland is within the property boundaries (skip next 2 questions)
☐ some of it - _____ acres or _____ % of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐ none of it ☐ all of it ☐ part of it (_____ % or _____ acres of the off-site portion)

How much of the *off-site portion* of this wetland is visible (e.g., from the subject property or from a public road)?

☐ all of it ☐ part of it (at least _____ acres) ☐ none of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐ Y ☒ N ☐ Unknown

If yes, could they be potential bog turtle habitat? ☐ Y ☐ N ☐ Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):

power plant, river

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒ PEM 100 ☐ PSS _____ ☐ PFO _____ ☐ POW _____

☐ Y ☒ N Are there any signs of disturbance to hydrology (ditching, filling, ponds, roads, etc.)? If yes, describe

streamside wetland

☐ Y ☒ N Are there any signs of disturbance to vegetation (mowing, pasturing, burning, etc.)? If yes, describe

Project Name Peach BottomWetland B (con't)**Hydrology**

- ☐ Y ☒ N Springs or seeps ☐ visible or ☐ likely? Watercress present? ☐ Yes ☒ No
☐ Y ☒ N Spring houses in or adjacent to wetland?
☒ Y ☐ N Saturated soils present? If yes, year-round? ☒ Likely ☐ Unlikely ☐ Unknown
☒ Y ☐ N Water visible on surface? Check all that apply: ☐ small puddles/depressions (___" deep)
☐ rivulets (___" deep) ☒ larger pools/ponds (12" deep) - @ stream edge
☒ Y ☐ N Evidence of flooding? If yes, describe indicators floodplain

Soils Mapping Unit (optional):Field observations confirm mapped type? ☐ YES ☐ NO ☒ Unknown

Soils - PEM Portion of Wetland			
Mucky ⁴ ? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	How much of it (PEM) is mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input type="checkbox"/> >70%	Mucky soils range in depth from: ___ to ___"	Most of the mucky part(s) of the wetland can be probed ⁵ : <input type="checkbox"/> 3-5" <input type="checkbox"/> 6-8" <input type="checkbox"/> 9-11" <input type="checkbox"/> ≥12"
Non-mucky ⁶ ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	How much of it (PEM) is non-mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input checked="" type="checkbox"/> >70%	some soft sediment along edge of creek	

Soils - PSS and PFO Portions of Wetland <u>N/A</u>			
Mucky ⁴ ? <input type="checkbox"/> YES <input type="checkbox"/> NO	How much of it is mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input type="checkbox"/> >70%	Mucky soils range in depth from: ___ to ___"	Most of the mucky part(s) of the wetland can be probed ⁵ : <input type="checkbox"/> 3-5" <input type="checkbox"/> 6-8" <input type="checkbox"/> 9-11" <input type="checkbox"/> ≥12"

Wetland Vegetation (characterize the wetland as a whole)

Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).

- ☒ sedges ☐ rushes ☐ skunk cabbage ☒ cattail ☐ sweet flag ☐ jewelweed ☐ sphagnum moss
☐ sensitive fern ☒ rice cutgrass ☐ tearthumb ☐ reed canary grass ☐ *Phragmites* ☐ purple loosestrife
☐ alder ☐ dogwood ☐ red maple ☐ willow ☐ poison sumac ☐ multiflora rose aspen tree
Additional dominant species: _____

HerptilesWere any bog turtles observed? ☐ YES? ☒ NO If yes, how many? _____Other herptiles ☐ observed ☐ previously observed: _____**Additional Comments/Observations:** (use additional sheets if necessary)

This wetland is representative of potential
streamside wetlands not visible during
vis. r

INVESTIGATOR'S OPINION

- ☐ YES ☒ NO ☐ UNSURE The hydrology criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE The soils criterion⁸ for bog turtle habitat is met.
☒ YES ☐ NO ☐ UNSURE The vegetation criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE This wetland is potential bog turtle habitat.

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Deborah Boerl
Investigator's Name (print)D. Boerl
Investigator's Signature8/30/17
Date

USFWS / PFBC Bog Turtle Habitat Evaluation Field Form¹
(revised 06/01/2006)

Project/Property Name: Peach Bottom
Project type: Power plant
Applicant/Landowner Name: Exelon
County: York Quad: _____ Township/Municipality: Adeta
PNDI # _____ Potential conflict with USFWS species? ☒ Y ☐ N

ACTION AREA²

Action area size: _____ Does the Phase 1 survey include all wetlands in the action area? ☒ Y ☐ N³

WETLAND ID: C PHOTOS TAKEN: ☒ Yes ☐ No WETLAND SIZE: _____ acres
Wetland size estimation – If actual acreage is not known at time of investigation, check one:
☒ < 0.1 acre ☐ 0.1-0.5 acre ☐ > 0.5 to < 1 acre ☐ 1-2 acres ☐ 2-4 acres ☐ 5+ acres ☐ 10+ acres

WETLAND LOCATION: Lat _____ Long _____
(approximate center of wetland) GPS Datum (check one): ☐ NAD 27 ☐ NAD 83 ☐ WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/30/17 Time In: 11:05 am Time Out: 11:10 am
Last precipitation: ☒ < 24 hours ☐ 1-7 days ☐ > 1 week ☐ unknown Drought conditions? ☐ Y ☐ N ☐ Unknown

How much of this wetland is located *off-site* (i.e., outside the property boundaries or right-of-way)?
☒ none of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐ some of it – _____ acres or _____ % of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?
☐ none of it ☐ all of it ☐ part of it (_____ % or _____ acres of the off-site portion)

How much of the *off-site portion* of this wetland is visible (e.g., from the subject property or from a public road)?
☐ all of it ☐ part of it (at least _____ acres) ☐ none of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐ Y ☒ N ☐ Unknown
If yes, could they be potential bog turtle habitat? ☐ Y ☐ N ☐ Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):

river, power plant

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒ PEM 100% ☐ PSS _____ ☐ PFO _____ ☐ POW _____

☐ Y ☒ N Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, etc.)? If yes, describe

☐ Y ☒ N Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, etc.)? If yes, describe

Project Name Peach Bo HornWetland B (con't)**Hydrology**

- ☐ Y ☒ N Springs or seeps ☐ visible or ☐ likely? Watercress present? ☐ Yes ☒ No
☐ Y ☒ N Spring houses in or adjacent to wetland?
☒ Y ☐ N Saturated soils present? If yes, year-round? ☒ Likely ☐ Unlikely ☐ Unknown
☒ Y ☐ N Water visible on surface? Check all that apply: ☐ small puddles/depressions (___" deep)
☐ rivulets (___" deep) ☒ larger pools/ponds (12" deep)
☒ Y ☐ N Evidence of flooding? If yes, describe indicators streamside / mud flat

Soils Mapping Unit (optional):Field observations confirm mapped type? ☐ YES ☐ NO ☒ Unknown

Soils - PEM Portion of Wetland <u>silty / muddy in mud flat</u>			
Mucky ⁴ ? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	How much of it (PEM) is mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input type="checkbox"/> >70%	Mucky soils range in depth from: ___ to ___"	Most of the mucky part(s) of the wetland can be probed ⁵ : <input type="checkbox"/> 3-5" <input type="checkbox"/> 6-8" <input type="checkbox"/> 9-11" <input type="checkbox"/> ≥12"
Non-mucky ⁶ ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	How much of it (PEM) is non-mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input checked="" type="checkbox"/> >70%		

Soils - PSS and PFO Portions of Wetland <u>PIA</u>			
Mucky ⁴ ? <input type="checkbox"/> YES <input type="checkbox"/> NO	How much of it is mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input type="checkbox"/> >70%	Mucky soils range in depth from: ___ to ___"	Most of the mucky part(s) of the wetland can be probed ⁵ : <input type="checkbox"/> 3-5" <input type="checkbox"/> 6-8" <input type="checkbox"/> 9-11" <input type="checkbox"/> ≥12"

Wetland Vegetation (characterize the wetland as a whole)

Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).

- ☐ sedges ☐ rushes ☐ skunk cabbage ☐ cattail ☐ sweet flag ☐ jewelweed ☐ sphagnum moss
☐ sensitive fern ☐ rice cutgrass ☐ tearthumb ☐ reed canary grass ☒ Phragmites ☐ purple loosestrife
☐ alder ☐ dogwood ☐ red maple ☐ willow ☐ poison sumac ☐ multiflora rose

Additional dominant species: _____

HerptilesWere any bog turtles observed? ☐ YES ☒ NO If yes, how many? _____Other herptiles ☐ observed ☐ previously observed: _____

Additional Comments/Observations: (use additional sheets if necessary)

INVESTIGATOR'S OPINION

- ☐ YES ☒ NO ☐ UNSURE The hydrology criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE The soils criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE The vegetation criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE This wetland is potential bog turtle habitat.

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Iskora Kopper
 Investigator's Name (print)

D. Pappal
 Investigator's Signature

8/30/12
 Date

"Delta
basin"

USFWS / PFBC Bog Turtle Habitat Evaluation Field Form¹
(revised 06/01/2006)

Project/Property Name: Plack Bottom
Project type: Power Plant
Applicant/Landowner Name: Exelon
County: York Quad: _____ Township/Municipality: Delta
PNDI # _____ Potential conflict with USFWS species? ☒ Y ☐ N

ACTION AREA²

Action area size: _____ Does the Phase 1 survey include all wetlands in the action area? ☒ Y ☐ N³

WETLAND ID: D PHOTOS TAKEN: ☐ Yes ☐ No WETLAND SIZE: _____ acres
Wetland size estimation – If actual acreage is not known at time of investigation, check one:
☐ < 0.1 acre ☐ 0.1-0.5 acre ☒ 0.5 to < 1 acre ☐ 1-2 acres ☐ 2-4 acres ☐ 5+ acres ☐ 10+ acres

WETLAND LOCATION: Lat _____ Long _____
(approximate center of wetland) GPS Datum (check one): ☐ NAD 27 ☐ NAD 83 ☐ WGS 84
see

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/30/17 Time In: 11:30am Time Out: 11:45am
Last precipitation: ☒ < 24 hours ☐ 1-7 days ☐ > 1 week ☐ unknown Drought conditions? ☐ Y ☐ N ☐ Unknown

How much of this wetland is located *off-site* (i.e., outside the property boundaries or right-of-way)?
☒ none of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐ some of it – _____ acres or _____ % of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?
☐ none of it ☐ all of it ☐ part of it (_____ % or _____ acres of the off-site portion)

How much of the *off-site portion* of this wetland is visible (e.g., from the subject property or from a public road)?
☐ all of it ☐ part of it (at least _____ acres) ☐ none of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐ Y ☒ N ☐ Unknown
If yes, could they be potential bog turtle habitat? ☐ Y ☐ N ☐ Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):

river, power plant

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒ PEM 50 ☐ PSS _____ ☐ PFO _____ ☒ POW 50

☒ Y ☐ N Are there any signs of disturbance to hydrology (ditching, filling, ponds, roads, etc.)? If yes, describe

concrete-lined basin

☐ Y ☒ N

Are there any signs of disturbance to vegetation (mowing, pasturing, burning, etc.)? If yes, describe

Project Name Peach Bottom Wetland D (con't)

Hydrology

- ☐ Y ☒ N Springs or seeps ☐ visible or ☐ likely? Watercress present? ☐ Yes ☒ No
☐ Y ☒ N Spring houses in or adjacent to wetland?
☒ Y ☐ N Saturated soils present? If yes, year-round? ☒ Likely ☐ Unlikely ☐ Unknown
☒ Y ☐ N Water visible on surface? Check all that apply: ☐ small puddles/depressions (___" deep)
☐ rivulets (___" deep) ☒ larger pools/ponds (2" deep)
☒ Y ☐ N Evidence of flooding? If yes, describe indicators rainwater is main source

Soils Mapping Unit (optional):

Field observations confirm mapped type? ☐ YES ☐ NO ☒ Unknown

Soils - PEM Portion of Wetland			
Mucky⁴? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	How much of it (PEM) is mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input type="checkbox"/> >70%	Mucky soils range in depth from: ___ to ___"	Most of the mucky part(s) of the wetland can be probed ⁵ : <input type="checkbox"/> 3-5" <input type="checkbox"/> 6-8" <input type="checkbox"/> 9-11" <input type="checkbox"/> ≥12"
Non-mucky⁶? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	How much of it (PEM) is non-mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input checked="" type="checkbox"/> >70%		

Soils - PSS and PFO Portions of Wetland <u>N/A</u>			
Mucky⁴? <input type="checkbox"/> YES <input type="checkbox"/> NO	How much of it is mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input type="checkbox"/> >70%	Mucky soils range in depth from: ___ to ___"	Most of the mucky part(s) of the wetland can be probed ⁵ : <input type="checkbox"/> 3-5" <input type="checkbox"/> 6-8" <input type="checkbox"/> 9-11" <input type="checkbox"/> ≥12"

Wetland Vegetation (characterize the wetland as a whole)

Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).

- ☐ sedges ☐ rushes ☐ skunk cabbage ☐ cattail ☐ sweet flag ☐ jewelweed ☐ sphagnum moss
☐ sensitive fern ☐ rice cutgrass ☐ tearthumb ☐ reed canary grass ☒ Phragmites ☐ purple loosestrife
☐ alder ☐ dogwood ☐ red maple ☒ willow ☐ poison sumac ☐ multiflora rose ☐ _____
Additional dominant species: _____

Herptiles

Were any bog turtles observed? ☐ YES? ☒ NO If yes, how many? _____

Other herptiles ☐ observed ☐ previously observed: _____

Additional Comments/Observations: (use additional sheets if necessary)

INVESTIGATOR'S OPINION

- ☐ YES ☒ NO ☐ UNSURE The hydrology criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE The soils criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE The vegetation criterion⁸ for bog turtle habitat is met.
☐ YES ☒ NO ☐ UNSURE This wetland is potential bog turtle habitat.

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Deborah Pappal
Investigator's Name (print)

[Signature]
Investigator's Signature

8/30/17
Date

Echo
Basin

USFWS / PFBC Bog Turtle Habitat Evaluation Field Form¹
(revised 06/01/2006)

Project/Property Name: Peach Bottom Atomic Power Station
Project type: Power Plant
Applicant/Landowner Name: Exelon
County: York Quad: _____ Township/Municipality: Delta
PNDI # _____ Potential conflict with USFWS species? ☒ Y ☐ N

ACTION AREA²

Action area size: _____ Does the Phase 1 survey include all wetlands in the action area? ☒ Y ☐ N³

WETLAND ID: F PHOTOS TAKEN: ☐ Yes ☐ No WETLAND SIZE: _____ acres
Wetland size estimation - If actual acreage is not known at time of investigation, check one:
☐ < 0.1 acre ☐ 0.1-0.5 acre ☒ 0.5 to < 1 acre ☐ 1-2 acres ☐ 2-4 acres ☐ 5+ acres ☐ 10+ acres

WETLAND LOCATION: Lat _____ Long _____
(approximate center of wetland) GPS Datum (check one): ☐ NAD 27 ☐ NAD 83 ☐ WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/30/17 Time In: 11:15 am Time Out: 11:30 am
Last precipitation: ☒ < 24 hours ☐ 1-7 days ☐ > 1 week ☐ unknown Drought conditions? ☐ Y ☒ N ☐ Unknown

How much of this wetland is located off-site (i.e., outside the property boundaries or right-of-way)?
☒ none of it - the entire wetland is within the property boundaries (skip next 2 questions)
☐ some of it - _____ acres or _____ % of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the off-site portion was surveyed (on foot)?
☐ none of it ☐ all of it ☐ part of it (_____ % or _____ acres of the off-site portion)

How much of the off-site portion of this wetland is visible (e.g., from the subject property or from a public road)?
☐ all of it ☐ part of it (at least _____ acres) ☐ none of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐ Y ☒ N ☐ Unknown
If yes, could they be potential bog turtle habitat? ☐ Y ☐ N ☐ Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):

power plant, river

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒ PEM 20 ☐ PSS _____ ☐ PFO _____ ☒ POW 80

☒ Y ☒ N Are there any signs of disturbance to hydrology (ditching, filling, ponds, roads, etc.)? If yes, describe
concrete-lined basin
☐ Y ☒ N Are there any signs of disturbance to vegetation (mowing, pasturing, burning, etc.)? If yes, describe

Project Name Peach BottomWetland E (cont)**Hydrology**

- ☐ Y ☒ N Springs or seeps ☐ visible or ☐ likely? Watercress present? ☐ Yes ☐ No
- ☐ Y ☐ N Spring houses in or adjacent to wetland?
- ☒ Y ☐ N Saturated soils present? If yes, year-round? ☐ Likely ☐ Unlikely ☐ Unknown
- ☒ Y ☐ N Water visible on surface? Check all that apply: ☐ small puddles/depressions (" deep)
- ☐ rivulets (" deep) ☒ larger pools/ponds (24" deep)
- ☐ Y ☒ N Evidence of flooding? If yes, describe indicators concrete basin

Soils Mapping Unit (optional):Field observations confirm mapped type? ☐ YES ☐ NO ☒ Unknown

Soils - PEM Portion of Wetland <u>inundated</u>			
Mucky ⁴ ? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	How much of it (PEM) is mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input type="checkbox"/> >70%	Mucky soils range in depth from: _____ to _____"	Most of the mucky part(s) of the wetland can be probed ⁵ : <input type="checkbox"/> 3-5" <input type="checkbox"/> 6-8" <input type="checkbox"/> 9-11" <input type="checkbox"/> ≥12"
Non-mucky ⁶ ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	How much of it (PEM) is non-mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input checked="" type="checkbox"/> >70%		

Soils - PSS and PFO Portions of Wetland <u>N/A</u>			
Mucky ⁴ ? <input type="checkbox"/> YES <input type="checkbox"/> NO	How much of it is mucky? <input type="checkbox"/> <10% <input type="checkbox"/> 10-29% <input type="checkbox"/> 30-49% <input type="checkbox"/> 50-70% <input type="checkbox"/> >70%	Mucky soils range in depth from: _____ to _____"	Most of the mucky part(s) of the wetland can be probed ⁵ : <input type="checkbox"/> 3-5" <input type="checkbox"/> 6-8" <input type="checkbox"/> 9-11" <input type="checkbox"/> ≥12"

Wetland Vegetation (characterize the wetland as a whole)

Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).

- ☒ sedges ☒ rushes ☐ skunk cabbage ☐ cattail ☐ sweet flag ☐ jewelweed ☐ sphagnum moss
- ☐ sensitive fern ☐ rice cutgrass ☐ tearthumb ☐ reed canary grass ☒ Phragmites ☒ purple loosestrife
- ☐ alder ☐ dogwood ☐ red maple ☐ willow ☐ poison sumac ☐ multiflora rose ☐ _____

Additional dominant species: _____

HerptilesWere any bog turtles observed? ☐ YES⁷ ☒ NO If yes, how many? _____Other herptiles ☐ observed ☐ previously observed: _____

Additional Comments/Observations: (use additional sheets if necessary)

INVESTIGATOR'S OPINION

- ☐ YES ☒ NO ☐ UNSURE The hydrology criterion⁸ for bog turtle habitat is met.
- ☐ YES ☒ NO ☐ UNSURE The soils criterion⁸ for bog turtle habitat is met.
- ☐ YES ☒ NO ☐ UNSURE The vegetation criterion⁸ for bog turtle habitat is met.
- ☐ YES ☒ NO ☐ UNSURE This wetland is potential bog turtle habitat.

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Deborah Poppe
Investigator's Name (print)Deborah Poppe
Investigator's Signature8/30/17
Date

September 26, 2017
USFWS – Enclosure 4

ENCLOSURE 4

Bald Eagle Project Screening Form

Bald Eagle Project Screening Form

Bald eagles are unlikely to be disturbed by routine use of roads, homes or other facilities where such use occurred prior to or during the successful breeding of an eagle pair. This guidance is specific to new or intermittent activities in Pennsylvania, and is based on the **National Bald Eagle Management Guidelines**. The *Guidelines*, along with other eagle information, are available at <http://www.fws.gov/northeast/EcologicalServices/eagle.html>.

The *Guidelines* will help you determine which specific measures are needed to avoid disturbing breeding and nesting bald eagles, based on the type and scope of your proposed project or activity, and its distance from a bald eagle nest. Before you begin, determine exactly where your proposed project occurs with respect to known bald eagle breeding territories (see **Bald Eagle Nest Sites in Pennsylvania** (http://www.fws.gov/northeast/pafo/bald_eagle.html)). Note that this form does not address the potential for a project or activity to disturb foraging or roosting bald eagles, especially when foraging or roosting takes place outside of nesting territories.

PROJECT INFORMATION

State: Pennsylvania County: York and Lancaster PNDI # 617 81
Lat/long (decimal degrees): 39.758367 -76.268407 Size: 350 acres/miles
Project Name: PBAPS Environmental Review in Support of Operating License Renewal (Units 2 & 3)

PROJECT CONTACT INFORMATION

Name: Exelon Generation, LLC c/o Nancy L. Ranek Phone: 610-765-5369
Address: 200 Exelon Way, KSA/2-E
Kennett Square, PA 19348
Email: nancy.ranek@exeloncorp.com

PROJECT ACTIVITY CATEGORY(S)

Place a check next to all of the activities that are proposed. Activities are grouped based on the nature and magnitude of impacts to bald eagle nests.

- ☐ Construction and Development Activities → go to pages 2 and 3
- ☒ Maintenance and Restoration Activities → go to pages 4 and 5
- ☐ Timber Operation and Forestry Practices → go to page 6
- ☐ Use of Helicopters or Fixed-wing Aircraft → go to page 7
- ☐ Blasting or Other Loud, Intermittent Noises (including Fireworks) → go to page 8
- ☐ Recreational Activities → go to page 9

Construction and Development Activities

Which construction or development activities will be carried out? (check all that apply)

- ☐ Building construction
- ☐ Construction of roads, trails, canals, power lines, pipelines and other linear utilities
- ☐ Agriculture or aquaculture – new or expanded operations
- ☐ Alteration of shorelines or wetlands
- ☐ Installation of docks or moorings
- ☐ Water impoundment or withdrawal
- ☐ Mining
- ☐ Oil and natural gas drilling and refining
- ☐ Installation or expansion of marinas with a capacity of 6 or more boats

Are any bald eagle nests visible from the project or activity area? Before going on site to determine nest visibility with the naked eye and with 4X binoculars, determine the location of the breeding territory (see map of Bald Eagle Nest Sites in Pennsylvania). The breeding territory may include multiple eagle nests.

- ☐ Yes → Stop. Implement Avoidance Measures (AM) 2 and 5 (see page 3)
- ☐ No → Go to the next question

Which category(s) most closely fits your proposed project or activity? (check all that apply)

<ul style="list-style-type: none"><input type="radio"/> Building construction, 1 or 2 story, with a project footprint of ½ acre or less<input type="radio"/> Construction of roads, trails, canals, power lines, or other linear utilities<input type="radio"/> Agriculture or aquaculture – new or expanded operations<input type="radio"/> Alteration of shorelines or wetlands<input type="radio"/> Installation of docks or moorings<input type="radio"/> Water impoundment or withdrawal <p>→ Implement AM 3, 4 and 5 (p. 3)</p>
--

<ul style="list-style-type: none"><input type="radio"/> Building construction or expansion, 3 or more stories<input type="radio"/> Building construction or expansion, 1 or 2 story, with project footprint more than ½ acre<input type="radio"/> Mining<input type="radio"/> Oil and natural gas drilling and refining<input type="radio"/> Installation or expansion of marinas with a capacity of 6 or more boats <p>→ Go to the next question</p>

Is there a similar activity within 1 mile of the nest?

- ☐ Yes → Stop. Implement AM 3, 4 and 5 (see page 3)
- ☐ No → Implement AM 1 and 5 (see page 3)

AVOIDANCE MEASURES (AM) – Based on your responses to the questions posed for Construction and Development Activities, specific measures were recommended to avoid disturbing bald eagles and their young. **Place a check mark next each avoidance measure (AM) that was recommended above and will be implemented.**

- ☐ AM 1 – A distance buffer of at least 660 feet (200 meters) will be maintained between all project activities and the nest (including alternate¹ nests).
- ☐ AM 2 – A distance buffer of at least 660 feet (200 meters) will be maintained between all project activities and the nest (including alternate nests). If a similar activity (i.e., similar in kind and size) is closer than 660 feet and has been tolerated by eagles, 1) the distance buffer will be the same or greater than that of the existing tolerated activity, and 2) between the modified distance buffer and 660 feet, all activities that may disturb bald eagles will be avoided from January 1 to July 31. These activities include, but are not limited to: construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, and landscaping.
- ☐ AM 3 – A distance buffer of at least 330 feet (100 meters) will be maintained year-round between all project activities and the nest (including alternate nests). If a similar activity (i.e., similar in kind and size) is closer than 330 feet and has been tolerated by eagles, the distance buffer will be the same or greater than that of the existing tolerated activity.
- ☐ AM 4 – Within 660 feet of the nest², all activities that may disturb bald eagles will be avoided from January 1 to July 31. These activities include, but are not limited to: construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, and landscaping.
- ☐ AM 5 – Established landscape buffers that screen the activity from the nest will be maintained.

Will the proposed activity include ALL of the recommended measures to avoid disturbance of bald eagles and their young for a project of this type?

- ☐ YES – All recommended avoidance measures will be followed.

(signature)

(date)

U.S. Fish and Wildlife Service Determination: Disturbance of bald eagles is unlikely to occur. You may print pages 1-3, then sign and date it for your records. This will serve as documentation that you are following the U.S. Fish and Wildlife Service's recommendations for avoiding disturbance of bald eagles.

- ☐ NO – One or more recommended avoidance measures will not be followed.
U.S. Fish and Wildlife Service Determination: Your action may disturb bald eagles. If you would like further assistance in determining whether bald eagles may be disturbed, contact the Service's Northeast Regional Bald and Golden Eagle Coordinator at 413-253-8577 or Thomas_Wittig@fws.gov.

¹ An alternate nest is a nest that is built or maintained by eagles, but not used for nesting in a given year.

² This seasonal restriction applies to activities outside the distance buffer identified in AM 3 (e.g., in the zone from 330 feet to 660 feet from the nest).

Maintenance and Restoration Activities

This category includes outdoor maintenance of existing structures or infrastructure, where the maintenance activity is temporary and obtrusive (e.g., requires use of heavy equipment or loud machinery). It assumes maintenance activities will occur within the previously-disturbed footprint of the structure or infrastructure. If maintenance is proposed outside the previously-disturbed footprint, see **Construction and Development Activities** (pages 2 and 3). This category does not include routine, ongoing activities to which bald eagles have already exhibited a tolerance (e.g., lawn mowing; plowing, planting or harvesting of agricultural fields; etc.).

This category also includes the maintenance and restoration of natural habitats (e.g., wetlands, streams, rivers, non-forested uplands), as human activities associated with habitat restoration or maintenance may disturb eagles if carried out during the breeding season.

Which maintenance or restoration activities will be carried out? (check all that apply)


- ☒ Maintenance of linear utilities (e.g., power lines, pipelines, water and sewer lines)
- ☒ Road, bridge or culvert maintenance
- ☐ Trail, campground or recreational area maintenance
- ☐ Maintenance of oil and gas wells, well pads, and storage tanks
- ☒ Maintenance of dams, levees, berms, canals and other water-control structures
- ☒ Pond, lake or reservoir maintenance (draw downs, dredging)
- ☐ Stream or stream bank maintenance /restoration (e.g., stream bank fencing, stream bank stabilization, livestock crossings, in-stream habitat improvements, channel maintenance, dredging)
- ☐ Wetland maintenance / restoration (e.g., invasive plant control, restoration of hydrology)
- ☒ Upland habitat maintenance / restoration (e.g., planting or cutting of vegetation, invasive plant control, trash cleanup, abandoned mine lands restoration). This does not include activities in forests/woodlands (see **Timber Operation and Forestry Practices**) or in agricultural fields.


The following measures are necessary to avoid disturbing bald eagles and their young. Place a check mark next to each measure that will be implemented.

- ☒ From **January 1 to July 31** (the breeding season), all activities that may disturb bald eagles will be avoided within **660 feet (200 meters)** of the nest. This includes, but is not limited to the following: construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, landscaping, and habitat restoration activities.
- ☒ Established landscape buffers that screen the activity from the nest will be maintained.
- ☒ If prescribed burning is necessary during the breeding season (January 1 to July 31), burns will only be conducted when adult eagles and young are absent from the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is active or after the young have fledged from that nest). Leaves and woody debris will be raked from around the nest tree to prevent crown fire or fire climbing the nest tree.

Will the proposed activity include ALL of the avoidance measures listed above?

☒ YES – All recommended avoidance measures will be followed.


(signature)


(date)

U.S. Fish and Wildlife Service Determination: Disturbance of bald eagles is unlikely to occur. You may print pages 1, 4 and 5, then sign and date it for your records. This will serve as documentation that you are following the U.S. Fish and Wildlife Service's recommendations for avoiding disturbance of bald eagles.

☐ NO – One or more recommended avoidance measures will not be followed.

U.S. Fish and Wildlife Service Determination: Your action may disturb bald eagles. If you would like further assistance in determining whether bald eagles may be disturbed, contact the Service's Northeast Regional Bald and Golden Eagle Coordinator at 413-253-8577 or Thomas_Wittig@fws.gov.

Timber Operation and Forestry Practices

The following measures are necessary to avoid disturbing bald eagles and their young. Place a check mark next to each measure that will be implemented.

- ☐ No clear-cutting or overstory tree removal will occur within 330 feet (100 meters) of the nest at any time of the year.
- ☐ From January 1 to July 31 (the breeding season), no timber harvest operations, road construction, chain saw use or yarding operations will occur within 660 feet (200 meters) of the nest. Around alternate nests (including nests that were attended during the current breeding season but not used to raise young), this distance may be decreased to 330 feet, provided the eggs laid in another nest within the territory have hatched.
- ☐ Log transfer facilities and in-water log storage areas will not be constructed or operated within 330 feet (100 meters) of nests at any time of the year.
- ☐ Selective thinning and other silviculture management practices designed to conserve or enhance habitat, including prescribed burning close to the nest tree, will only be carried out from August 1 to December 31 (outside the breeding season).
- ☐ If prescribed burning is necessary during the breeding season (January 1 to July 31), burns will only be conducted when adult eagles and young are absent from the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is active or after the young have fledged from that nest). Leaves and woody debris will be raked from around the nest tree to prevent crown fire or fire climbing the nest tree.

Will the proposed timber operation or forestry practice include ALL of the avoidance measures listed above?

- ☐ YES – All avoidance measures will be followed.

(signature)

(date)

U.S. Fish and Wildlife Service Determination: Disturbance of bald eagles is unlikely to occur. You may print page 1 and this page, then sign and date it for your records. This will serve as documentation that you are following the U.S. Fish and Wildlife Service's recommendations for avoiding disturbance of bald eagles.

- ☐ NO – One or more avoidance measures will not be followed.

U.S. Fish and Wildlife Service Determination: Your action may disturb bald eagles. If you would like further assistance in determining whether bald eagles may be disturbed, contact the Service's Northeast Regional Bald and Golden Eagle Coordinator at 413-253-8577 or Thomas_Wittig@fws.gov.

Use of a Helicopter or Fixed-wing Aircraft

The following measure is necessary to avoid disturbing bald eagles and their young. Place a check mark next to this measure if it will be implemented.

- ☐ From January 1 to July 31 (the breeding season), no aircraft will be flown within 1000 feet (305 meters) of bald eagle nests, except where eagles have demonstrated tolerance for such activity.

Will the proposed operation of a helicopter(s) or fixed-wing aircraft include the avoidance measure listed above?

- ☐ YES – This avoidance measure will be followed.

(signature)

(date)

U.S. Fish and Wildlife Service Determination: Disturbance of bald eagles is unlikely to occur. You may print page 1 and this page, then sign and date it for your records. This will serve as documentation that you are following the U.S. Fish and Wildlife Service's recommendations for avoiding disturbance of bald eagles.

- ☐ NO – This avoidance measure will not be followed.

U.S. Fish and Wildlife Service Determination: Your action may disturb bald eagles. If you would like further assistance in determining whether bald eagles may be disturbed, contact the Service's Northeast Regional Bald and Golden Eagle Coordinator at 413-253-8577 or Thomas_Wittig@fws.gov.

Blasting and Other Loud, Intermittent Noises (including Fireworks)

The following measure is necessary to avoid disturbing bald eagles and their young. Place a check mark next to this measure if it will be implemented.

- ☐ From January 1 to July 31 (the breeding season), blasting and other activities that produce extremely loud noises will not occur within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the breeding area. This measure also applies to the use of fireworks classified by the Federal Department of Transportation as Class B explosives, which includes the larger fireworks that are intended for licensed public display.

Will the proposed activity include the avoidance measure listed above?

- ☐ YES – This avoidance measure will be followed.

(signature)

(date)

U.S. Fish and Wildlife Service Determination: Disturbance of bald eagles is unlikely to occur. You may print page 1 and this page, then sign and date it for your records. This will serve as documentation that you are following the U.S. Fish and Wildlife Service's recommendations for avoiding disturbance of bald eagles.

- ☐ NO – This avoidance measure will not be followed.

U.S. Fish and Wildlife Service Determination: Your action may disturb bald eagles. If you would like further assistance in determining whether bald eagles may be disturbed, contact the Service's Northeast Regional Bald and Golden Eagle Coordinator at 413-253-8577 or Thomas_Wittig@fws.gov.

Recreational Activities

Recreational activities will not disturb eagles if conducted during the non-breeding season. The following avoidance measures only pertain to the breeding season (January 1 to July 31).

Non-motorized recreation and human entry (including hiking, camping, fishing, hunting, canoeing)

- ☐ Stay at least 330 feet (100 meters) from the nest if you walk, bike, canoe, camp, fish, or hunt near an eagle nest during the breeding season and your activity will be visible or can be heard from the nest.

Off-road vehicle use (including snowmobiles)

- ☐ Stay at least 330 feet (100 meters) from the nest. In open areas, where there is increased visibility and exposure to noise, stay at least 660 feet (200 meters) from the nest.

Motorized watercraft use (including jet skis/personal watercraft)

- ☐ Do not operate jet skis (personal watercraft) or airboats within 330 feet (100 meters) of the nest.
- ☐ Avoid concentrations of noisy vessels (e.g. commercial fishing boats and tour boats) within 330 feet (100 meters) of the nest, except where eagles have demonstrated tolerance for such activity.
- ☐ For all motorized boat traffic within 330 feet (100 meters) of the nest, minimize trips and avoid stopping in the area, particularly where eagles are unaccustomed to boat traffic.

Will the proposed activity(s) include the avoidance measures listed above?

- ☐ YES – These avoidance measures will be followed.

(signature)

(date)

U.S. Fish and Wildlife Service Determination: Disturbance of bald eagles is unlikely to occur. You may print this page for future reference.

- ☐ NO – One or more avoidance measures will not be followed.

U.S. Fish and Wildlife Service Determination: Your action may disturb bald eagles. If you would like further assistance in determining whether bald eagles may be disturbed, contact the Service's Northeast Regional Bald and Golden Eagle Coordinator at 413-253-8577 or Thomas_Wittig@fws.gov.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

November 2, 2017

Michael Gallagher
Exelon Generation
200 Exelon Way
Kennett Square, PA 19348

RE: USFWS Project #2017-0333
PNDI Receipt #617811

Dear Mr. Gallagher:

Thank you for your letter of September 26, 2017, which provided the Fish and Wildlife Service (Service) with information regarding the proposed Peach Bottom Atomic Power Station Units 2 and 3 license renewal located in Drumore, Fulton, and Peach Bottom Townships, Lancaster and York Counties, Pennsylvania. This project is in the range of the bog turtle (*Clemmys muhlenbergii*), a species that is federally listed as threatened. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species, the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755, as amended), and the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended; 16 U.S.C. 668-668d) to ensure the protection of migratory bird species.

This license renewal will involve no new construction, refurbishment, ground disturbing activities, changes to operation, or changes to existing land use conditions. Operation and maintenance activities during the term of the renewed licensing are only expected to occur in previously disturbed areas or existing rights-of-way.

Bald Eagle

In addition to protection under the MBTA, bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (Eagle Act). The Eagle Act protects eagles by prohibiting killing, selling, disturbing, or otherwise harming eagles, their nests or eggs. "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle; (2) a decrease in its productivity, by

substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

Bald eagles (*Haliaeetus leucocephalus*) are known to nest in the vicinity of the project area, with 3 nests being located within a half mile of the project site. You have provided us with a signed Bald Eagle Project Screening Form indicating that all recommended avoidance measures will be followed.

If you have additional questions regarding eagle permits, please contact Thomas Wittig, Northeast Regional Bald and Golden Eagle Coordinator at 413-253-8577 or Thomas_Wittig@fws.gov.

Bog Turtle

Bog turtles inhabit shallow, spring-fed fens, sphagnum bogs, swamps, marshy meadows, and pastures characterized by soft, muddy bottoms; clear, cool, slow-flowing water, often forming a network of rivulets; high humidity; and an open canopy. Bog turtles usually occur in small, discrete populations occupying suitable wetland habitat dispersed along a watershed. The occupied intermediate successional stage wetland habitat is usually a mosaic of micro-habitats ranging from dry pockets, to areas that are saturated with water, to areas that are periodically flooded. Some wetlands occupied by bog turtles are located in agricultural areas and are subject to grazing by livestock.

To determine the potential effects of the proposed project on bog turtles and their habitat, Deborah Poppel, conducted a Phase 1 bog turtle habitat assessment on August 30, 2017. According to the report, five wetlands were identified within the project boundaries. Following the methods described under “*Bog Turtle Habitat Survey*” (Phase 1 survey) of the *Guidelines for Bog Turtle Surveys* (revised April 2006), Ms. Poppel determined that the subject wetlands do not have the combination of soils, vegetation, and hydrology typical of habitat occupied by bog turtles. We concur with this habitat determination and conclude that implementation of the proposed project will not affect the bog turtle or any other federally threatened or endangered species under the Service’s jurisdiction.

This determination is valid for two years from the date of this letter. If the proposed project has not been fully implemented prior to this, an additional review by this office is recommended. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

If the Phase 1 habitat assessment did not include all wetlands in all areas that will be directly or indirectly affected by the proposed project and project-associated features (*e.g.*, roads, water and sewer lines, utility lines, stormwater and sedimentation basins, buildings and other structures, driveways, parking lots, yards/lawns, wells), expand the scope of the Phase 1 survey to include these areas. If any wetlands are located, submit the results of the expanded wetland and Phase 1 investigation to our office for review so that we can confirm whether the above determination is still valid.

This response relates only to endangered and threatened species under our jurisdiction, based on an office review of the proposed project's location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

Please contact Bonnie of this office at (814) 234-4090 if you have any questions or require further assistance regarding this matter.

Sincerely,

Lora Z. Lattanzi
Field Office Supervisor