

Appendix A - Item 32

PPL Bell Bend Nuclear Power Plant
Salem Township, Luzerne County, PA

ACOE Information Requirement:

“Describe invasive plant species monitoring and restoration in proposed work areas.”

Applicant Response:

Non-native and invasive plants (undesirable plants) occur to varying degrees across the upland and wetland habitats within the Bell Bend Nuclear Power Plant (BBNPP) Project Boundary. Native wildlife is adapted to habitats composed of indigenous vegetation, and most invasive, non-native plants have little or no value to native animals. Aggressive non-native plants, such as those identified below, are generally not supportive of native wildlife and can spread rapidly and form monocultures allowing them to out-compete native flora. For these reasons and in accordance with applicable regulatory policy, these species warrant eradication, control, and monitoring actions as described in this management plan.

The goals of PPL as related to undesirable plant species on the BBNPP site are to:

- Ensure that the type and extent of undesirable plants at BBNPP is known prior to construction activity,
- Plan for and appropriately execute eradication of undesirable vegetation during the pre-construction period,
- Plan for and manage future occurrences of undesirable species using appropriate suppression techniques, and
- Meet or exceed applicable regulatory requirements of the ACOE and Pennsylvania Noxious Weed Control Law for management and control of undesirable species.

It is important to note that not all undesirable species represent the same degree of negative impact to the environment. PPL is committed to work to eradicate undesirable plant species in areas within and immediately adjacent to the defined BBNPP Limit of Disturbance, to work to

control them during facility operation as required by permit conditions, and to consistently use safe but effective management methods accepted by regulatory agencies.

This invasive species control plan is designed to meet the requirements set forth in the *Mitigation and Monitoring Guidelines* (Baltimore District Regulatory Program, USACE, November 2004). Undesirable species control measures described herein will be incorporated as appropriate into the wetland mitigation plan, and will include at a minimum a description of areas within the BBNPP Limit of Disturbance affected by undesirable species, and recommended control methods for those locations. Long term monitoring and maintenance will be advanced in all restored areas and compensatory mitigation areas to prevent recurrence or colonization of undesirable species, and additional treatments made to treat missed plants or new growth as required by project permits.

Undesirable Species at BBNPP

Undesirable wetland species include the invasives reed canary grass (*Phalaris arundinacea*), purple loosestrife (*Lythrum salicaria*), and common reed (*Phragmites australis*), which are herbaceous plants that commonly colonize emergent wetland habitat.

Non-native invasive plants occurring within particular upland habitats in the BBNPP Project Boundary include garlic mustard (*Allaria petiolata*), stilt grass (*Eulalia viminea*), multiflora rose (*Rosa multiflora*), and bush honeysuckle (*Lonicera tartarica*). Recently, a patch of mile-a-minute weed (*Persicaria perfoliata*) has been observed along the Susquehanna River south of the proposed cooling water intake location.

Treatment and Monitoring

Regardless of the specific control method used, wetland and upland areas on the BBNPP project site which are affected by the undesirable species described herein will be monitored in accordance with permit conditions to ensure that no species under treatment will recruit (re-infest) from root or seed. Areas downstream from stream infestations and on all sides of wetland or open-water area infestation will be monitored for encroachment of invasive plant species, if such additional sources of infestation are discovered.

With regard to the use of chemicals, the timing of herbicidal control methods for invasive plant species on the BBNPP project site will be dependent on the type of herbicide and the target

plant species. Herbicide treatments will not be advanced without prior approval of pertinent regulatory agencies, or outside of guidelines for application as directed by the manufacturer.

The window for optimum results may be narrower for one species compared to another, and the "location" of the chemical application (i.e., stems, leaves, roots, etc.) may vary among species. These spatial and temporal factors will influence the implementation and duration of herbicide control operations.

BBNPP Invasive/Undesirable Species Management Matrix

Ref. #	Species	Location	Proposed Action	Control Method
1	Mile-a-minute weed (<i>Persicaria perfoliata</i>)	South of BBNPP Intake Structure and dredge material handling area	1) removal of all plant material from area to be disturbed (lands within LOD); 2) eradication of species from adjacent areas owned/controlled by PPL	1) within footprint of disturbance species will be removed via grading and glyphosate application on stockpiled soils containing plant materials ; 2) glyphosate application will be applied to species on adjacent lands
2	Common reed (<i>Phragmites communis</i>)	South and west of BBNPP Intake Structure and dredge material handling area	1) removal of all plant material from area to be disturbed (lands within LOD); 2) eradication of species from adjacent areas owned/controlled by PPL	1) within footprint of disturbance species will be removed via grading and glyphosate application on stockpiled soils containing plant materials; 2) glyphosate application will be applied to species on adjacent lands
3	Purple loosestrife (<i>Lythrum salicaria</i>)	small patches in various emergent wetlands	1) removal of all plant material from area to be disturbed (lands within LOD); 2) eradication of species from adjacent areas owned/controlled by PPL	1) within footprint of disturbance species will be removed via grading and glyphosate application on stockpiled soils containing plant materials; 2) glyphosate application will be applied to species on adjacent lands
4	Stilt grass (<i>Eulalia viminea</i>)	various forested uplands	1) removal of all plant material from area to be disturbed (lands within LOD); 2) eradication of species from adjacent areas owned/controlled by PPL	1) within footprint of disturbance species will be removed via grading and glyphosate application on stockpiled soils containing plant materials; 2) glyphosate application will be applied to species on adjacent lands
5	Reed canary grass (<i>Phalaris arundinacea</i>)	common in emergent and some shrub wetlands	1) removal of all plant material from area to be disturbed (lands within LOD); 2) limited eradication of species from adjacent areas owned/controlled by PPL	1) within footprint of disturbance species will be removed via grading and glyphosate application on stockpiled soils containing plant materials; 2) glyphosate application will be applied to species on adjacent lands
6	Multiflora rose (<i>Rosa multiflora</i>)	common in uplands, riparian areas, and some seasonally saturated wetlands	1) removal of all plant material from area to be disturbed (lands within LOD); 2) eradication of species from adjacent areas owned/controlled by PPL	1) within footprint of disturbance species will be removed via grading and glyphosate application on stockpiled soils containing plant materials; 2) hand/mechanical removal will be completed on adjacent lands

BBNPP Invasive/Undesirable Species Management Matrix

Ref. #	Species	Location	Proposed Action	Control Method
7	Garlic mustard (<i>Allaria petiolata</i>)	various forested uplands and disturbed areas	1) removal of all plant material from area to be disturbed (lands within LOD); 2) eradication of species from adjacent areas owned/controlled by PPL	1) within footprint of disturbance species will be removed via grading and glyphosate application on stockpiled soils containing plant materials; 2) glyphosate application will be applied to species on adjacent lands
8	Bush honeysuckle (<i>Lonicera tartatica</i>)	common in uplands, riparian areas, and some seasonally saturated wetlands	1) removal of all plant material from area to be disturbed (lands within LOD); 2) eradication of species from adjacent areas owned/controlled by PPL	1) within footprint of disturbance species will be removed via grading and glyphosate application on stockpiled soils containing plant materials; 2) hand/mechanical removal will be completed on adjacent lands