

137 FERC ¶ 62,258  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Appalachian Power Company

Project No. 739-022

ORDER ISSUING NEW LICENSE

(December 27, 2011)

Article 408. Aquatic Vegetation Management. The Aquatic Vegetation Management Plan is approved and made part of this license and may not be amended without prior Commission approval. Upon license issuance, the licensee shall implement the Aquatic Vegetation Management Plan, filed June 29, 2009, with the following modification: section 8.1, Issuance of Permit by Appalachian Power to Control Aquatic Vegetation, shall be revised to include a provision that when applying for a treatment permit, each permittee must notify adjacent landowners that treatment is going to occur and when.

**APPALACHIAN POWER COMPANY  
CLAYTOR PROJECT (P-739)  
AQUATIC VEGETATION MANAGEMENT PLAN**

**June 2009**

## Summary

The Claytor Project (No. 739) is licensed to Appalachian Power Company (Appalachian) and is a conventional hydroelectric project located on the New River in Pulaski County, Virginia.

The purpose of the Aquatic Vegetation Management Plan is to identify measures for addressing aquatic vegetation issues at the Claytor Project over the term of the new license. The plan includes information pertaining to control methods and plan, monitoring requirements and permit program.

The Aquatic Vegetation Management Plan is being submitted to the FERC as part of the license application and reflects the measures that Appalachian will be responsible for as the licensee. However, there will be times when it makes sense to develop a cooperative agreement between Appalachian and other parties to manage an issue in a mutually beneficial way. These types of agreements will be outside of relicensing and may reflect additional measures that are above those required by this management plan.

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## **1.0 INTRODUCTION AND PROBLEM STATEMENT**

Claytor Lake is a conventional hydroelectric project encompassing 4360 acres and approximately 100 miles of shoreline. The Claytor Project is owned and operated by Appalachian Power Company (Appalachian). In 2007, Appalachian contracted with Normandeau Associates to complete a lake survey of submerged aquatic vegetation (SAV) as part of its relicensing efforts for the Claytor Project.

During the survey, 288.6 acres of submerged aquatic vegetation beds were mapped. This represents approximately 6.6% of the surface area the lake. Submerged aquatic vegetation was sampled in 149 plots positioned along 50 transects. This survey confirmed the existence of the non-native, invasive species hydrilla (*Hydrilla verticillata*), slender naiad (*Najas minor*), and curly pondweed (*Potamogeton crispus*) in Claytor Lake.

Slender naiad was the most abundant aquatic species. It occurred at 83 plots and was a dominant species in 71 of those plots. It was widespread as well, occurring on at least one plot on 37 of the 50 transects throughout the impoundment. The second most abundant was Hydrilla which occurred throughout Claytor Lake. It occurred on 25 transects in 56 plots and dominant in 29 plots. The other non-native, invasive species, Curly pondweed, occurred in 7 plots on 4 transects and never occurred as the dominant species.

Of the seven native species found on the lake, only two had significant distribution or percent cover: waterweed and water celery. Waterweed was confined to the southern end of the lake where it dominated the transects from Allision to Transect 39. Water celery was widespread on the lake. It was found in 13 plots on 8 transects and was dominant on 6 of those plots.

## **2.0 MANAGEMENT GOALS AND OBJECTIVES**

The management goals and objectives for the Aquatic Management Plan are:

1. Implement an ongoing methodology to identify and map aquatic vegetation in the lake.
2. Manage and control non-native invasive vegetation in the lake to minimize impacts to fish, wildlife, habitats, and recreation.
3. Identify and promote native, desirable aquatic vegetation.
4. Prioritize control sites and determine control options.
5. Establish a permitting process.
6. Educate the public.
7. Identify methods to prevent introduction of non-native vegetation and other non-native species to the lake and from the lake to other water bodies.

### 3.0 BENEFICIAL USE AREAS

The following areas have been identified as beneficial use areas of interest to the licensee under this Management Plan:

- Public access ramps (VDGIF ramps at Allisonia, Dublin, and Harry DeHaven Park)
- Claytor Lake State Park
- Water withdrawals for public use (Pulaski County PSA Intake)
- Harry Dehaven Park
- Sites designated for future recreational use as part of Appalachian’s Recreation Plan or sites to be developed by local or state government for public access to the Project
- Sensitive habitat areas for wildlife and fish
- Designated bank fishing and fishing pier areas (State Park and Harry DeHaven Park)

### 4.0 PLANT MANAGEMENT HISTORY

The following is a list of known areas where aquatic vegetation control treatments have occurred to date:

<u>Location</u>	<u>Acreage</u>	<u>Vegetation Treated</u>
Brown’s Hollow	4-5	Hydrilla
Claytor Lake State Park	6-7	Hydrilla and slender naiad

## 5.0 AQUATIC PLANT COMMUNITY CHARACTERISTICS

Based on SAV surveys conducted on behalf of Appalachian in 2007, Table 1 below presents a list of SAV known to occur within Claytor Lake.

Submerged aquatic vegetation is grouped into two separate categories. They are:

- Non-Native Invasive;
- Native

Table 1. List of Non-Native Invasive and Native SAV Species known to occur in Claytor Lake

Non-Native, Invasive Species:	<ul style="list-style-type: none"> <li>• Hydrilla (<i>Hydrilla verticillata</i>)</li> <li>• Curlyleaf pondweed (<i>Potamogeton crispus</i>)</li> <li>• Slender naiad (<i>Najas minor</i>)</li> </ul>
Native Species:	<ul style="list-style-type: none"> <li>• Water weed (<i>Elodea canadensis</i>)</li> <li>• Water celery (<i>Valisneria americana</i>)</li> <li>• Long-leaf pondweed (<i>Potamogeton nodosus</i>)</li> <li>• Water-thread pondweed (<i>Potamogeton diversifolisu</i>)</li> <li>• Leafy pondweed (<i>Potamogeton foliosus</i>)</li> <li>• Small pondweed (<i>Potamogeton pusillus</i>)</li> <li>• Muskgrass (<i>Chara sp.</i>)</li> </ul>

## 6.0 AQUATIC VEGETATION MANAGEMENT ALTERNATIVES

A variety of techniques are available for managing undesirable SAV, including physical, mechanical, biological and chemical control methods. An integrated approach to undesirable SAV management that produces the desired outcome and minimizes the possibility of unintended consequences requires consideration of the problem species, management goals and objectives, and the possible impacts of management activities.

The use of herbicides in or near surface waters under the Virginia Department of Environmental Quality's (VDEQ) jurisdiction may require prior approval from one or more VDEQ programs. Any methods that require the disturbance of aquatic bottoms and/or sediments may require permits from the VWP Permit Program. Use of machinery in waters should not be conducted without the proper permit determination. Caution should be used with any method that eliminates submerged aquatic vegetation in whole, as native species may be mixed with non-native and invasive species.

A list of appropriate weed control methods will be developed and maintained by the Technical Review Committee described in Section 7.3 of this plan. The list of methods will be reviewed and updated as appropriate to include new products or methods. This review will include consultation with appropriate local, state and federal agencies and other experts in the field of aquatic vegetation control. A copy of the list of methods will be made available upon request.

## **7.0 MONITORING AND PLAN UPDATE PROCEDURES**

### **7.1. Full Lake Survey:**

Appalachian will conduct a “full lake” survey on Claytor Lake once every five (5) years starting in the year following the issuance of a new FERC license. The purpose of this survey will be to assess changes in the composition and distribution of SAV in the lake over time.

The 5-year survey will be accomplished by utilizing a combination of methods until the most economical and agreeable method is determined for use in Claytor Lake. For the first 5-year survey, remote sensing along with on-water visual inspections, use of hydroacoustics, underwater videography or other scientifically valid technique as appropriate will be utilized. For the remote sensing, an airplane or helicopter may be used to survey the entire lake. Since remote sensing requires ideal surface conditions (e.g. smooth water surface, high water clarity, appropriate angle of sunlight, low cloud cover, etc.) and cannot always be effectively used, on-water visual inspections, hydroacoustics and underwater videography or other scientifically valid technique will be used to supplement the remote sensing. Included in the 5-year survey will be an on-the-water survey of identified SAV beds to determine species composition. This will also include the resampling of the 50-transects identified during the 2007 Normandeau survey. A shift in species composition could indicate the severity and aggressiveness of the non-native, invasive species. Following each 5-year survey, a report presenting the findings and condition of Claytor Lake will be generated. Upon completion of the first 5-year survey, the 5-year survey methodology will be modified as appropriate.

### **7.2. Annual Surveys:**

In between the 5-year surveys, Appalachian will survey all Beneficial Use Areas identified in Section 3.0, commercial marinas, and all areas previously identified with non-native invasive aquatic vegetation from the 2007 Normandeau survey. These annual surveys will be conducted between mid-August and mid-September of each year. These surveys will target areas more likely to become infested by non-native invasive species such as public ramps and marinas. These surveys will be conducted by on-water visual inspections and use of hydroacoustics, videography, throw rakes or other scientifically valid technique. A physical survey will also be conducted at each survey area to monitor changes in species presence and composition. In addition to the active annual SAV monitoring, Appalachian will compile and analyze data on the permits that have been issued and resident reports of SAV to Friends of Claytor Lake (FOCL). This passive data collection will be an additional means of SAV monitoring at Claytor Lake. Following each survey, a report presenting the findings of the active and passive SAV monitoring will be generated. The annual surveys will not be completed during years of the 5-year survey.

### 7.3. Reporting and Consultation:

An Aquatic Vegetation / Debris / Habitat / Shoreline Management Plan Technical Review Committee (Technical Review Committee) will be established by Appalachian to review the annual survey information (including permits issued during the previous year) and report. The Committee will also provide input on the survey techniques used during the annual and the 5-year surveys. The Committee will provide input on recommendations and proposed treatments. The Committee will include representatives from Appalachian, FOCL, Virginia Department of Game and Inland Fisheries, Virginia Department of Conservation and Recreation, Virginia Department on Environmental Quality, Virginia Department of Agriculture and Consumer Services, Virginia Marine Resources Commission, Pulaski County, a representative from a fishing club/organization, and others with expertise in the field, as needed. The Committee will convene at least annually and on an as needed basis.

Following the 5-year survey, a report will also be forwarded to the Technical Review Committee. The Committee will have 30 days to review, provide recommendations on strategies, technologies, survey schedules, and comment on the report. The Committee will meet during the review period to discuss the report prior to finalization. This report will be filed with the Federal Energy Regulatory Commission along with documentation of consultation with the members of the Technical Review Committee.

The contents of the 5-year report will include: (a) the information and reports associated with the annual surveys preceding the 5-year survey; (b) information collected as part of the 5-year survey; (c) discussion of the coordination of efforts to control vegetation during the preceding 5-year survey as required by the license and efforts outside of the license; (d) recommendations and proposed methods for controlling aquatic vegetation at the project that require Commission review and approval; (e) the updated vegetation maps mentioned in Section 10.0 of the plan; (f) any education efforts, as outlined in Section 8.4 of the plan, undertaken by Appalachian during the reporting period; (g) consultation with the Technical Review Committee; and (h) any proposed modifications to the Management Plan.

## **8.0 INTEGRATED MANAGEMENT ACTION STRATEGY**

### 8.1. Issuance of Permit by Appalachian to Control Aquatic Vegetation

Appalachian will issue permits under the following guidelines provided that the requirements of Section 9.0 of this Management Plan are met. This permit will allow for the control of aquatic vegetation within the Claytor Project as specified in the terms of the permit. It does not however, eliminate the need to follow any additional applicable local, state and federal regulations in addition to the requirements of Section 9.0.

a.) Native Aquatic Vegetation:

Appalachian will only issue a permit to treat native vegetation if there is a significant impediment to navigation at the beneficial use areas listed in Section 3.0. Areas outside of beneficial use areas will be considered on a case-by-case basis.

b) Non-Native Invasive Aquatic Vegetation:

Appalachian will issue permits for non-native invasive aquatic vegetation provided the requirements of Section 9.0 of this management plan are met.

## 8.2. Control of Aquatic Vegetation by Appalachian

It is Appalachian's position that the control of non-native, invasive species is an issue that is beyond our responsibility as a licensee but Appalachian is willing to act as an equal partner with Pulaski County, the Commonwealth of Virginia and FOCL in dealing with the issue.

Appalachian will be consulting with the VDGIF following both annual and 5-yr aquatic vegetation surveys (see Section 7.0). If, at any time during the period of the license, the VDGIF determines that hydrilla or other non-native invasive aquatic vegetation is significantly affecting fish and wildlife populations in the project area, Appalachian will cooperate with VDGIF to identify and implement the appropriate actions.

Non-native invasive aquatic vegetation will similarly be controlled if it is significantly affecting recreation access at any of the following beneficial use areas:

- Public access ramps, fishing piers and designated bank fishing areas operated by the state or local governments.
- Claytor Lake State Park
- Harry DeHaven County Park
- Future public recreational use sites as developed under Appalachian's Recreation Management Plan and future public access sites developed by local or state government.

The determination of whether there are significant impacts to these areas will be done in consultation with the Technical Review Committee that is referenced in Section 7.3 of this plan, which includes VDGIF, VDEQ and VDCR.

## 8.3. Coordination with Other Management Plans

The aquatic vegetation reports as described above will be considered by the Technical Review Committee when planning enhancement projects proposed under the Habitat Management Plan.

## 8.4 Education

Appalachian will work with the Technical Review Committee to identify and implement measures to 1) educate the public concerning aquatic vegetation, 2) prevent introduction of non-native invasive vegetation to other areas of the lake, 3) prevent introduction of other non-native invasive species to the lake, and 4) prevent introduction of non-native invasive species to other water bodies.

Education can include the posting of signage at access areas, newsletters, articles in local newspapers, and information on websites.

## 9.0 PERMIT PROGRAM

A permit through Appalachian will be required for any treatment of SAV. A list of treatment options (see Section 6.0) will be provided upon request. Treatments by any other means will only be considered following a formal review process by the Technical Review Committee. There is no permit fee required by Appalachian at this time but may be considered in the future. Specific requirements and conditions of the permit program are as follows:

- Any landowner or organization requesting vegetation treatment will be required to obtain a Permit Application for Aquatic Vegetation Treatment in Claytor Lake from Appalachian or FOCL. The licensed application hired by the landowner or organization will be required to complete the application form. An example permit application is provided in Appendix A.
- Depending on the level of treatment proposed, a representative from Appalachian may require an inspection of the site prior issuing a permit.
- Only contractors licensed by the State of Virginia shall be authorized to treat vegetation using herbicides. No landowners are authorized to use herbicides or chemicals to remove vegetation, regardless of the size of the bed.
- Appalachian will periodically investigate vegetation treatment to ensure that proper techniques are being used.
- The contractor and landowner shall determine the best method for vegetation treatment at their discretion, but are only authorized to use a method approved by Appalachian (Section 6.0). All other methods will require a formal review by the Technical Review Committee. However, in all cases only herbicides registered by the U.S. Environmental Protection Agency may be used.
- After each vegetation treatment, the contractor is required to fill out a brief report and send it to Appalachian for a record of the treatment. An example report sheet is provided in Appendix B.
- Treatment permits for aesthetics will not be issued unless the vegetation is posing a barrier to navigation, recreation, angling, or it consists of non-native aggressive invasive vegetation.
- Each permit issued is valid for a period of 3 months, with an option to extend the life of the permit if the contractor was unable to access the bed within that time period.

A summary of the permits issued during the previous year will be provided in the annual report.

## **10.0 MAPS**

Maps showing the locations of Beneficial Use Areas, SAV monitoring results, citizen reported SAV (including information from FOCL, VDCR or VDGIF), treatment areas, and permit locations will be updated on an annual basis by Appalachian. These maps will be provided as part of the annual and five-year reports.

## **11.0 SOURCE DOCUMENTS**

Guidance for Integrated Aquatic Vegetation Management Plans, July 2004, Washington State Department of Ecology, Publication No. 04-10-053

A Citizen's Manual for Developing Integrated Aquatic Vegetation Management Plans, January 1994, Washington State Department of Ecology, Gibbons, Maribeth V.; Gibbons, Harry L. Jr.; Sytsma, Mark D.

Pesticides and Aquatic Animals: A Guide to Reducing Impacts on Aquatic Systems, 1996, Publication 420-013, Helfrich, Louis A.; Weigmann, Diana L.; Hipkins, Patricia; and Stinson, Elizabeth R.

# **APPENDIX A**

## **PERMIT APPLICATION FOR AQUATIC VEGETATION TREATMENT**

**Permit Application for Aquatic Vegetation Treatment**  
**Appalachian Power Company**  
**Claytor Lake**

**APPLICANT INFORMATION:**

Landowner / Organization Name: _____	Applicator / Company: _____
Lake Address: _____ <i>(no P.O. Box)</i>	Address: _____
_____	_____
Phone: _____ (    )	Phone: _____ (    )
Tax Map and Parcel #: _____	License No. _____

**PERMIT INFORMATION:**

New Permit Application [  ]                      Extend Existing Permit [  ]  
*existing permit #* \_\_\_\_\_

**LOCATION:**

\_\_\_\_\_

**TREATMENT METHOD:**

[  ] Herbicide \_\_\_\_\_  
*(list type of herbicide to be used)*

If herbicide is being used, provide the number of anticipated applications during 3 month permit period. \_\_\_\_\_

**BED DESCRIPTION:**

Bed Size (square feet) \_\_\_\_\_  
Distance from Landowner's shoreline (in feet) \_\_\_\_\_  
Dominant Species \_\_\_\_\_ Subdominant species \_\_\_\_\_  
Other species in or around the bed \_\_\_\_\_  
Are there any native species within 100 ft of the bed to be removed? \_\_\_\_\_ If so, what species? \_\_\_\_\_

I certify that all information provided in this application is true and correct and a copy has been provided to the licensed applicator prior to treatment.

Signature: \_\_\_\_\_

- All application of herbicides must be performed by a licensed applicator.
- Permits are issued for a three month period.
- No vegetation treatment shall occur during fish spawning season (March 15-June 15).
- All vegetation treatment sites are subject to review by Appalachian prior to permit issuance.
- **The Licensed Applicator is required to submit the Report Following Treatment to Appalachian within 30 days of treatment.**

Return application to:  
Appalachian Power Company's Roanoke Office,  
P.O. Box 2021, Roanoke, VA 24022  
Telephone: (540) 985-2861 Fax: 540-985-2318

--FOR OFFICE USE ONLY--

Received Date:

Site Survey Date:

Received By:

Site Surveyed By:

Reviewed By:

Permit Issue Date:

Permit # \_\_\_\_\_

Shoreline Classification: \_\_\_\_\_

## **APPENDIX B**

### **REPORT FOLLOWING TREATMENT OF AQUATIC VEGETATION ON CLAYTOR LAKE**

**Report Following Treatment of Aquatic Vegetation**  
**Appalachian Power Company**  
**Claytor Lake**  
*To be completed by Licensed Applicator*

Permit # \_\_\_\_\_

Date of treatment \_\_\_\_\_

Today's date \_\_\_\_\_

Landowner /  
Organization  
Name: \_\_\_\_\_

Lake Address: \_\_\_\_\_  
\_\_\_\_\_  
(no P.O. Box)

Phone: (    ) \_\_\_\_\_

Tax Map and  
Parcel #: \_\_\_\_\_

Applicator /  
Company: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone: (    ) \_\_\_\_\_

License No. \_\_\_\_\_  
\_\_\_\_\_

List all species treated \_\_\_\_\_

Method / herbicide used for treatment \_\_\_\_\_

Total size (square feet) of vegetation bed treated \_\_\_\_\_

Please briefly describe the treatment process, including any additional information below:

- Statement of Effectiveness of Treatment by Applicator: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**This report is to be completed by the applicator and submitted to AEP's Roanoke office within 30 days of vegetation treatment. One report is to be submitted for each permit acquired.**