132 FERC ¶ 61,236
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Marc Spitzer, Philip D. Moeller,
John R. Norris, and Cheryl A. LaFleur.

Appalachian Power Company Project No. 2210-192

ORDER ON REHEARING AND CLARIFICATION

(Issued September 16, 2010)

(G) License Article 411, *Debris Management,* is revised to read as follows:

Article 411. *Debris Management.* Upon the effective date of this license, the licensee shall implement sections 3, 4, and 5 of the *Debris Management Plan*, filed July 15, 2008, with the following modifications. The licensee shall be responsible for removing, and properly disposing of, debris from the project reservoirs that creates safety hazards, interferes with public access to public recreation facilities, or results in adverse aesthetic impacts, The licensee must address, throughout the year, recreational hazards created by floating debris resulting from high flow events, including not only the removal of floating debris immediately after the high flow event, but also removal of floating hazards created by dislodged debris on an ongoing basis after the event has occurred.

The licensee shall consult with the Debris Technical Review Committee and develop a procedure and schedule for monitoring and controlling debris at public swimming beaches, the project recreation facilities (i.e., the public recreation areas maintained by the Virginia Department of Game and Inland Fisheries and Appalachian Power), and other areas (e.g., coves), as appropriate. This monitoring and control program shall be in effect, at a minimum, from Memorial Day to Labor Day for purposes of removing debris on an as-needed basis.

The schedule in section 3.1 of the *Debris Management Plan* for removing floating debris on a regular basis during the months of April through October may be modified in consultation with the specified entities to provide for more frequent removal or for a longer removal period.

The approved *Debris Management Plan* may not be amended without prior Commission approval.

UNITED STATES OF AMERICA 129 FERC ¶ 62,201
FEDERAL ENERGY REGULATORY COMMISSION

Appalachian Power Company Project No. 2210-169

ORDER ISSUING NEW LICENSE

(December 15, 2009)

Article 411. *Debris Management.* Upon the effective date of this license, the licensee shall implement sections 3, 4, and 5 of the *Debris Management Plan*, filed July 15, 2008, with the following modification. The licensee shall consult with the Debris Technical Review Committee and develop a procedure for monitoring and controlling debris at public swimming beaches, the project recreation facilities (*i.e.*, the public recreation areas maintained by the Virginia Department of Game and Inland Fisheries and Appalachian Power), and other areas (*e.g.*, coves), as appropriate. This monitoring and control program shall be in effect from Memorial Day to Labor Day for purpose of removing debris on an as-needed basis.

The approved *Debris Management Plan* may not be amended without prior Commission approval.

Appalachian Power Company
Smith Mountain Hydroelectric Project
FERC No. 2210

Debris Management Plan

July 2008

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SUMMARY

The Smith Mountain Project (No. 2210) is licensed to Appalachian Power Company (Appalachian) and is a pumped storage hydroelectric project located on the Roanoke River in Bedford, Campbell, Franklin and Pittsylvania counties in Virginia. The conventional hydroelectric development is identified as the Lower or Leesville Development while the pumped storage development is the identified as the Upper or Smith Mountain Development. The upper development (Smith Mountain Development) dam is located at river mile 314 while the dam for the lower development (Leesville Development) is located at approximately river mile 296. The project boundary for the Smith Mountain Development generally follows the 800 foot contour around the perimeter of the reservoir. For the Leesville Development, the project boundary generally follows the 620 foot contour. Both elevations are referred to National Geodetic Vertical Datum (NGVD).

The purpose of this Debris Management Plan is to identify debris removal and control measures within the project boundaries for the Smith Mountain and Leesville developments that maintain the aesthetic values, reduce access difficulties, and reduce boating hazards associated with floating debris while also benefiting the fishery and biological habitats for both lakes. This plan includes removal methods, identification of natural debris that should remain within the project boundaries, proposals for public education relative to debris, and possible avenues for stakeholder sharing of debris management for the Smith Mountain Project.

The Debris Management Plan has been prepared with consideration to the numerous meetings with stakeholders in the development and preparation of the related Debris Study for the relicensing of the Smith Mountain Project and is being filed with the Federal Energy Regulatory Commission (Commission) as part of the Application for New License for the Smith Mountain Project being filed by Appalachian. The measures proposed by Appalachian that it believes should be the responsibility of the Licensee as part of the new license are identified in the plan. However, it should be recognized that there are times that it makes sense to develop a cooperative agreement between Appalachian and one or more of the involved stakeholders in order to manage debris for both lakes in a mutually beneficial way. These types of agreements would be outside of the requirements of the project license and may reflect additional measures that are above those required by this plan. Where cooperative agreements already exist, they will be noted within this plan.

1.0 INTRODUCTION

The purpose of this Debris Management Plan (Plan) is to outline how Appalachian, in cooperation with a number of stakeholders, intends to control the accumulation of natural and man-made debris floating on the surface of both Smith Mountain Lake and Leesville Lake over the term of the next license for the Smith Mountain Project (Project). The goal of this Plan is to provide a means to maintain the aesthetic value, reduce access difficulties, and reduce boating hazards related to floating debris for both lakes.

1.1 Project Lands and Waters

The Smith Mountain Project is a pumped storage project consisting of two developments, both located on the Roanoke River in Bedford, Campbell, Pittsylvania, and Franklin counties in the Commonwealth of Virginia. The upper development of the Project is the Smith Mountain Development and the lower development is the Leesville Development. The Smith Mountain Development has five generating units, with a combined generating capacity of 586 MW. Three of the five units have the capability of pumping water collected in the reservoir for the downstream Leesville Development back into Smith Mountain Lake. The reservoir formed by Smith Mountain dam has a surface area of 20,260 acres at an operating pool elevation of 795 feet NGVD and approximately 500 miles of shoreline. The primary tributaries to Smith Mountain Lake are the Roanoke River and the Blackwater River.

The Leesville Development has two generating units with a combined rated capacity of 50 MW. The reservoir formed by Leesville dam has a surface area of 3,260 acres and 100 miles of shoreline at an operating level of 613 feet NGVD. Flow into the reservoir for the Leesville Development emanates from the upstream Smith Mountain Development and the Pigg River. Flow that is not returned to the Smith Mountain Development as part of its generation/pumping cycle is passed downstream to the Roanoke River.

Smith Mountain and Leesville lakes have large drainage areas, 1,029 square miles and 1,505 square miles, respectively. The majority of the drainage area is rural in nature. However, along the Roanoke River and just upstream of the upper end of Smith Mountain Reservoir is the City or Roanoke, Virginia which is part of a large urban area having a total population in excess of 250,000 people. For the most part, debris has been characterized as being primarily natural such as logs, trees, and branches. However, during high inflow events for the Project, large amounts of man-made debris are observed primarily along the Roanoke River arm of Smith Mountain Lake.

1.2 Debris Study Objectives and Conclusions

In 2007, Appalachian retained Kleinschmidt Associates, Inc. (Kleinschmidt) to conduct a study of debris that floats on the surface of both lakes. The study, titled "Smith Mountain Project Debris Study" and dated January 2008 is included in the group of

studies made a part of Appalachian's application for new license for the Smith Mountain Hydroelectric Project. The objectives of that study were as follows:

1. Determine the amount and types of debris that accumulate on the surfaces of Smith Mountain and Leesville lakes including characterization of natural and man-made debris.

2. Identify the sources of debris on the lakes and where the highest concentrations occur.

3. Determine the need to continue the removal of debris on the surface of both lakes, based in part upon the potential for it to be a boating hazard.

4. Assess various methods and/or programs for reducing debris accumulation on the lakes.

5. Determine what is considered to be beneficial fish habitat that should not be removed from the surfaces of the lakes.

The referenced study, as well as this Plan, was developed in consultation with a number of stakeholders representing Federal and State agencies, non-governmental organizations (NGO's) both local and national, and local governments. These consultations occurred in public meetings addressing debris issues as well as other concerns related to the relicensing of the Smith Mountain Project, work group meetings addressing debris concerns directly, and individual contact during which information and opinions were requested.

The conclusions of the study are as follows:

1. The vast majority of debris at the Smith Mountain Project consists of natural materials.

2. Amounts of debris can be substantial. During some years, work crews remove thousands of tons of debris. After major storm events, debris rafts covering large areas are present.

3. Primary sources of debris are the Roanoke, Blackwater, and Pigg rivers upstream of the Project reservoirs.

4. Data indicates that the Roanoke River provides more man-made debris relative to the Blackwater River.

5. Debris inputs are positively correlated to flow.

6. Debris does represent a boating hazard at the Smith Mountain Project.

7. Debris diversion and collection methods are viable on a large scale basis if the appropriate conditions exist.

8. Debris can provide beneficial fish habitat and as such should not be removed when not representing a potential boating hazard.

The study further concludes that debris on Smith Mountain and Leesville lakes is an issue that can affect all stakeholders due to the range of effects it can have on water based recreation, aesthetics, and perceptions regarding the beauty of and character of both lakes. However, the study also recognizes that debris issues are common to many lakes and rivers and is a natural occurring part of the ecosystem. As such, the study concludes that debris is an issue that all stakeholders should work together to resolve.

2.0 DEBRIS MANAGEMENT

2.1 Existing Efforts

Appalachian owns and operates a mechanical floating skimmer that is utilized to collect debris from the water surface and haul debris to various shoreline locations at both lakes. Typical operations occur from April through October each year. The actual number of days when the skimmer operates is determined by the amount of debris present, the number of recent high flow events and crew availability. Skimmer operation is the primary responsibility of the assigned work crew. However, there are times when that crew is needed to augment the staff at the plants for maintenance work. If during those times debris loading is high and removal is necessary, Appalachian will hire private contractors to support plant staff thus allowing the crew for the skimmer to perform its assigned work. While one person operates the skimmer and positions it into place, the other crew members utilize pike poles to direct floating debris into the conveyor located on the skimmer. The efficiency of the skimmer operations depends on the size and location of accumulated debris. The skimmer has a relatively low travel speed and if debris removal sites are dispersed over a large area and/or the areas are a substantial distance from the offload site, travel can consume a substantial portion of time. This then limits the number of skimmer loads that can be removed during a given period. Skimmer operations are split between Smith Mountain and Leesville lakes. During a typical year, approximately 80 percent of the operating days are directed toward efforts at Smith Mountain Lake and the remaining days at Leesville Lake. The annual cost to Appalachian for operation of the skimmer is approximately $250,000.

Under the current process, lake users at Smith Mountain contact the Tri-County Lake Administrative Authority (TLAC) with debris removal requests. A form providing the details of the request is completed and the request is communicated to Appalachian. Debris is removed when staff availability permits and transported to offload sites where it is hauled to a local landfill for disposal. Debris that is identified as possibly containing hazardous material found floating on the surface of the lake are reported to TLAC who in turn notifies the proper authorities who then remove and dispose the object accordingly. TLAC is also contacted regarding large man-made debris that may represent a hazard to boating or is considered to be a nuisance. The associated hauling and landfill costs for debris removed from Smith Mountain Lake are covered by TLAC. For Leesville Lake, natural debris is stacked on shore and allowed to dry. Once dry, the material is either burned on-site or taken off-site for appropriate disposal.

After periods of high inflows, the sudden influx of debris can be dramatic. During these conditions, additional debris removal efforts are utilized. In the past TLAC has hired local contractors with the necessary equipment to assist with removal efforts. In 2006, TLAC spent in excess of $100,000 for contracted assistance. In 2007 Appalachian, in addition to skimmer operation, provided $10,000 in funding to help defray costs incurred by TLAC.

The Leesville Lake Association (LLA) has also conducted additional debris removal efforts at Leesville Lake. Costs for those efforts have approached $25,000.

In addition to the efforts of Appalahian's debris removal crew and contractors hired to assist with debris removal efforts, organized volunteer clean-up events are conducted on Smith Mountain and Leesville lakes each spring. The "Take Pride in Smith Mountain Lake" annual clean-up celebrated its 20th year in 2007. The annual effort, organized by the Smith Mountain Lake Association (SMLA), TLAC and the Smith Mountain Lake Chamber of Commerce, uses approximately 1,000 volunteers to collect debris from around Smith Mountain Lake. Appalachian participates each year by contributing funds as a sponsor and providing the skimmer, the crew to operate the equipment, and volunteers.

The LLA organizes a "Beautification Day" where volunteers work to remove debris from Leesville Lake. This annual event completed its fourth year in 2007 and participation has been growing. As for the above described annual clean-up event for Smith Mountain Lake, Appalachian participates each year by contributing funds as a sponsor and providing the skimmer, the crew to operate equipment, and volunteers.

Recognizing that a significant amount of man-made debris that enters Smith Mountain Lake emanates from the City of Roanoke, volunteers from Appalachian also participate in the annual river clean-up events held along the Roanoke River upstream of the Smith Mountain Project. Appalachian also contributes funds as a sponsor for a number of these events.

2.2 Beneficial Debris

Smith Mountain and Leesville lakes support a substantial amount of water based recreation. Debris can affect these uses in different ways. For example, the presence of abundant, complex woody debris could benefit the fishery and improve angling success. However, this same debris, if dislodged and free floating, could represent a hazard to water skiers. Therefore, it is important to consider the diversity of activities that occur on the lakes when determining what debris should not be removed because of the associated benefits to the fish community.

Stakeholders from the work group formed to address the debris issues for both lakes toured portions of Smith Mountain and Leesville lakes. Those stakeholders

included representation from Appalachian, Virginia Department of Game and Inland Fisheries (VDGIF), SMLA, LLA, and TLAC amongst others. The consensus of the work group was that beneficial habitat that should not be removed include natural woody material located outside of defined waterway that is secured in place of otherwise unlikely to become a free floating boating hazard. Examples include fallen trees with roots still attached to the shore or wooded material imbedded in the substrate. Debris can also be secured in place by cables or other means intended to keep the material from washing away. Any man-made material can be removed. Likewise, natural material that is either free floating, or secured but near the surface in the defined waterway can also be removed.

3.0 MANAGEMENT MEASURES

Based upon the recommendations of the January 2008 Debris Study and giving consideration to the numerous consultations regarding the management of debris, the following debris management measures have been formulated by Appalachian for those activities that will be the responsibility of the licensee for the Smith Mountain Project.

3.1 Debris Removal

Debris removal efforts at Smith Mountain and Leesville developments will continue as currently being done with Appalachian utilizing their debris removal equipment supplemented with contractor removal efforts. Appalachian will continue to operate or provide for the operation of the existing skimmer and/or replacement equipment (debris removal equipment) as needed during the term of the license for the removal of floating debris during the months April through October on a regular schedule. This schedule may be modified based on actual debris loading observed on either lake in consultation with TLAC and LLA. Scheduling of the debris removal equipment will be coordinated with TLAC and the LLA in order to establish the most effective clean-up of debris for both lakes. The debris to be removed by the debris removal equipment will be restricted to floating debris that is considered to present a hazard to boating and not that debris considered to be beneficial fish habitat. Additionally, debris that is considered as being aesthetically unpleasant will be removed.

Appalachian working with TLAC and the LLA will annually establish a blanket contract with a contractor(s) to assist in debris removal efforts when it is determined, in consultation with TLAC and LLA, to be essential. That assistance will also include the removal of dead animals, large man-made items or debris that presents a boating hazard. The Virginia Department of Environmental Quality will be contacted regarding the removal of containers potentially containing hazardous materials.

3.2 Offload/Disposal Sites

One issue identified during the development of the Debris Study was the lack of permanent offloading sites at both lakes. Currently, businesses and homeowners associations in the areas of the heavier debris loading allow the use of their ramps for offloading the debris from the skimmer onto a conveyor and then into a dumpster. Several of these types of groups that have allowed the use of their facilities in the past, no longer participate in this effort due to the inaccessibility of the ramps for recreation purposes while the conveyor is in place. As part of this Plan, Appalachian will work with TLAC and the LLA in identifying dedicated sites and for obtaining the appropriate permission or ownership in order to assure their availability. Efforts will be made to ensure those sites selected will be as permanent as feasibly possible and agreements reached with the property owners to assure that they are available for the term of the Project license. The sites need to be located in the following areas to be the most effective: (a) one site each on the upper Blackwater and Roanoke arms of Smith Mountain Lake; and (b) one site each on the upstream and downstream portions of Leesville Lake. If the existing off-loading sites become unavailable and no other sites can be retained, then alternative methods for removing debris from the debris removal equipment for disposal will be identified in consultation with the Technical Review Committee described in Section 3.5 of this plan and those measures implemented. Appalachian will report on the status of the efforts to locate permanent off-loading sites as part of its annual report as detailed in Section 5.0.

Based upon the results of the studies related to Debris management, Appalachian does not believe that debris diversion or collection devices are justified. While Appalachian is not proposing the implementation of these devices as part of this management plan at this time, it is recognized that as conditions change, practices that may not be feasible today, may become feasible in the future. That is why Appalachian is including this ongoing evaluation in its plan so that these types of measures will continue to be evaluated during the term of the next license. As part of the evaluation of potential locations for dedicated debris offload/disposal sites, consideration will also be given to evaluating those sites for possible debris diversion and collection devices. The evaluation of the sites including the potential for providing debris diversion and collection devices will include an engineering and cost-benefit analysis, along with considerations for effects on surrounding property owners, navigation, safety concerns, permitting implications, environmental impacts, and access. Should it appear feasible to consider the installation of a debris diversion and collection device at a dedicated debris offload/disposal site after review of the above described environmental and engineering considerations, a joint pilot project supported by Appalachian, TLAC, LLA, and other stakeholders will be considered. Appalachian will report on the evaluation of any sites for possible debris diversion and collection devices in its annual report as detailed in Section 5.0.

Prior to implementation, any proposed plans for new off-loading sites, debris diversion devices or collection devices will be filed with the Commission for review and approval.

3.3 Volunteer Lake Clean-up Efforts

The current lake clean-up days are successful and will continue with support from Appalachian and the various stakeholder groups involved. Additional lake clean-up days will be considered as necessary. Potential benefits of these volunteer efforts are easier access to debris and less potential for disturbing critical biological activities near the shoreline. Appalachian will report on the results of any volunteer lake cleanup efforts in its annual report as detailed in Section 5.0.

3.4 Education

Appalachian will work with TLAC, the LLA, and stakeholders to educate the public regarding the impact debris has on recreation, the environment, and aesthetics for both lakes. These efforts may include and are not limited to the following:

- Posting information regarding boating hazards and debris at all public access areas and popular marinas.
- Developing informational material that describes the ecological benefits of certain types of debris and that those areas should not be disturbed.
- Utilizing local media outlets to inform lake users of extreme debris conditions and locations after high inflow events.
- Developing informational material regarding the adverse impacts of littering and the associated penalties and posting that information at public access areas and other sites where posting of such information would be considered most effective.
- Providing information to property owners on creating aquatic habitat enhancements utilizing debris recovered from the lakes.
- Increase awareness regarding the effects of littering and the storage of materials in the flood plane on the lake.

Appalachian will report on the education efforts in its annual report as detailed in Section 5.0.

3.5 Coordination

The coordination of the debris removal efforts for Smith Mountain and Leesville Lakes will continue as is currently being done through TLAC and the LLA, or any entity that replaces either or both. Appalachian will inspect both lakes once each month from April to October and following heavy inflow events to assess the debris load. A summary of the results will be provided to TLAC and LLA for review starting in April. An overall plan will be developed at that time for directing debris removal efforts for the upcoming months. Appalachian's debris removal equipment operations will be supplemented with contractor labor as necessary. The overall plan will be revised as necessary based on the monthly inspection reports, with input from TLAC and LLA.

Appalachian will establish a Debris Technical Review Committee with representatives from TLAC, LLA, Smith Mountain Lake Association, Virginia Department of Game and Inland Fisheries and Appalachian. This committee will review the annual report described in Section 5.0 below and provide recommendations and comments. This Committee will also receive a copy of the annual report of the Habitat Management Plan for review and comment. A copy of the Annual Debris Report will likewise be provided to the Habitat Technical Advisory Committee for review and comment.

3.6 Costs

Costs to Appalachian, TLAC, and the LLA for the items described in this Plan are estimated to be the same as those currently being incurred for periods of routine debris removal. Additional costs will be incurred with the items related to additional contractor labor, improvements to off-loading sites as they are developed and the construction of diversion devices if they are determined to be feasible. These costs can not be determined at this time or are dependent on the number of high flow events that occur and how often they occur. Additional costs will also be incurred as Appalachian's debris removal equipment has to be replaced.

3.7 Schedule

The activities described by this Plan will be implemented within six months of the date of approval of the Plan by the Commission. Any actions taken under the Plan involving construction activities within the Project boundaries will require the appropriate permits, consultation with Federal and State agencies having an interest, and consultation with the appropriate NGO's and local governments also having a direct interest. Those activities will also require the approval of the Commission.

4.0 Modifications to Plan

Any modifications to this Plan are to be filed by Appalachian and will require the approval of the Commission. Approval from the Commission will not be requested until after consultation by Appalachian with the appropriate Federal and State agencies, NGO's, and local governments. Those consultations will be documented as part of any filing by Appalachian to the Commission.

5.0 Report

An annual report documenting debris removal efforts will be filed with the Commission by January 30 for the preceding year. The first report will be filed January 30, 2011. The report will contain the following:

a. Summary of the amount of debris removed for each lake including details of the methods used.
b. Summary of debris removal efforts that take place outside of the license or by other parties
c. Summary of Volunteer Lake Cleanup Efforts
d. Summary of Education Efforts
e. Discussion of the off-load sites utilized to remove debris, an update on status of securing additional sites and alternative methods that are identified
f. Summary of evaluation of sites for possible debris diversion and collection devices
g. Details of any plans that require Commission approval including costs and implementation schedule
h. Proposed modifications to the plan.
i. Consultation documentation

References: *Guidelines for Public Safety at Hydropower Projects* (March 1992), Federal Energy Regulatory Commission.