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12/21/2011
76FR 79228

March 6, 2012

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Division of Administrative Services
Office of Administration
Mailstop TWB-05-B01M
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

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RULES AND DIRECTIVES

REFERENCE: NRC-2008-0170.
COMMENTS on Draft Environmental Impact Statement for Combined Licenses for Units 1 and 2 at the William States Lee III Nuclear Station Site, Cherokee County, South Carolina.

Staff of the South Carolina Department of Natural Resources (DNR) reviewed the Draft Environmental Impact Statement (DEIS) for Combined Licenses for Units 1 and 2 of the proposed William States Lee III Nuclear Station Site (Lee Nuclear Station) and submit the following comments.

The Lee Nuclear Station site is owned by Duke Energy (Licensee) and is located in eastern Cherokee County, South Carolina, on the Broad River, approximately 1,000 ft upstream from the Ninety-Nine Islands Hydroelectric Plant, which also is owned and licensed for operation through the Federal Energy Regulatory Commission (FERC) by Duke Energy. The Ninety-Nine Islands Reservoir is an impoundment of the Broad River and bounds the Lee Nuclear Station to the north and east. Makeup water for the proposed Lee Nuclear Station is proposed to be withdrawn from the Ninety-Nine Islands Reservoir. The Environmental Report Revision 1 (ER Rev. 1) indicates Make-Up Ponds A & B provide cooling water needs for the proposed nuclear facility during low instream-flow events. The Supplement to the ER Revision 1 (Supplement ER Rev. 1) indicates an additional make-up pond (Make-Up Pond C) would be required after hydrological data from the drought of record (2007-08) revealed that Make-Up Ponds A & B would be insufficient in providing cooling water during periods of extreme drought. DNR submitted comments on the ER Rev. 1 on May 20, 2008 and on the Supplement ER Rev. 1 on July 27, 2010.

In 1975, the Nuclear Regulatory Commission (NRC) granted a construction permit (NUREG-75/089) to Duke Energy for the construction of the Cherokee Nuclear Station. Construction for the Cherokee Nuclear Station was halted in 1982. The Lee Nuclear Station is proposed to be constructed within the large, open, contiguous area of land that was cleared during construction and subsequent demolition of the Cherokee Nuclear Station. During the 1970s, Duke Energy constructed dams to form the existing, onsite Make-Up Ponds A and B. Make-Up Pond C would be formed by impounding London Creek, a tributary of the Broad River, northwest of Make-Up Pond B. Make-Up Pond C is proposed to be used to provide supplemental water during drought and/or low flow affecting the Broad River. Make-Up Pond C

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would be filled using flow from London Creek, water pumped through Make-Up Pond A and Make-Up Pond B or pumped directly from the Broad River. The dam for the proposed Make-Up Pond C would be downstream of Lake Cherokee, a state-owned public fishing reservoir, which is upstream of the confluence of London and Little London creeks. The Make-Up Pond C dam crest elevation would be 660 ft mean sea level (msl), and the spillway crest elevation would be 650 ft msl. Make-Up Pond C would have a maximum depth of approximately 116 ft and a total storage volume of approximately 22,000 acre-ft. The surface area at the normal pond level of 650 ft msl would be approximately 620 acres. The usable storage capacity would be approximately 17,500 acre-ft. Normal water surface elevation for the proposed Make-Up Pond C would be 650 ft msl. At times when the natural stream flows to Make-Up Pond C are inadequate to maintain a full pool condition, the pond would receive supplemental inflows pumped from the Broad River.

NRC staff, its contractor staff at Pacific Northwest National Laboratory and Idaho National Laboratory, and United States Army Corps of Engineers (USACE) staff comprise a team of experts (Review Team) who examined the information contained within the ERs and characterized impact levels defined as follows:

1. SMALL (environmental effects are not detectable or so minor that they will neither destabilize nor noticeably alter any important attribute of the resource),
2. MODERATE (environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource) and
3. LARGE (environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource).

DNR Mission and Objectives

DNR is the state agency charged by law (Titles 48 and 50, South Carolina Code of Laws 1976, as amended) with the management, protection, and enhancement of wildlife and fisheries resources in South Carolina. DNR is charged with regulating watercraft operation and associated recreation, including establishing boating safety standards. Title 49, South Carolina Code of Laws, authorizes DNR as the state agency responsible for considering water supply (domestic, municipal, agricultural and industrial) issues, water quality facilities and controls, navigation facilities, hydroelectric power generation, outdoor recreation and fish and wildlife opportunities, as well as other water and land resource interests. This title also charges DNR with aquatic plant management, comprehensive drought response planning, management of State Scenic Rivers and coordination, and the conservation, protection and use of floodplain lands.

DNR thus is the steward of the state's natural resources and is responsible for the protection and management of these resources for use and enjoyment by the public. Natural resources within DNR purview include the full range of land, water, mineral and biological resources. Public and private uses of natural resources are varied, sometimes conflicting and can result in significant impacts to the resources being used. DNR, in carrying out its protection and management responsibilities, must balance its objectives and actions in order to most appropriately protect and sustain the natural resources of South Carolina.

DNR's objective in reference to the proposed action is to protect the natural resources of the Broad River and its basin and associated waters to ensure continued biological diversity, public recreation, navigation and water supply uses. The Broad River is a resource of state and regional significance and is important habitat for the priority conservation species robust redhorse (*Moxostoma robustum*) and American shad (*Alosa sapidissima*), a diversity of freshwater fish and mussel species and economically important recreational fisheries. Populations of the rare and sensitive plant species rocky shoals spider lily

(*Hymenocallis coronaria*) occur along its shoals and banks. The Broad River also is an important water supply resource for municipalities, hydropower and various industries. The Broad River provides recreational boating, fishing, hunting and appreciative uses to large numbers of the public in the midlands of South Carolina and beyond.

DNR submits these comments, opinions and recommendations as the position of the agency in accordance with the provisions of the Fish and Wildlife Coordination Act, as amended (16 U.S.C. §§ 661-667); the Federal Power Act (16 U.S.C. § 791 et seq.); the National Environmental Policy Act (42 U.S.C. § 4321 et seq.); and the Administrative Procedure Act (5 U.S.C. Chapters 5 through 8). The following comments address relevant sections within the DEIS in the order in which they appear in the document.

CHAPTER 2 – AFFECTED ENVIRONMENT

2.2.2. The Make-Up Pond C Site

The Licensee proposes a 300-ft buffer around Make-Up Pond C, 50 ft of which is proposed to be cleared, grubbed, grassed and maintained to prevent debris from washing into the reservoir. DNR concurs with the proposed 300-ft buffer but does not support maintaining a grassed 50-ft shoreline buffer. If a natural shoreline buffer is maintained, Make-Up Pond C likely would naturalize and support a greater variety of aquatic life and wildlife. Riparian zones perform numerous ecological functions including providing food, cover, and nesting sites for a variety of wildlife species as well as detritus and woody debris which are an important source of energy and cover for aquatic life. Canopy cover helps to maintain water quality by reducing surface water temperatures and evaporative loss. Riparian zones function as biofilters and remove nutrients and other pollutants from storm-water runoff before it enters rivers, lakes and streams. Maintenance of the 50-ft buffer likely will contribute to lowered water quality. DNR recommends the Licensee explore alternatives for preventing debris from entering intake structures in order to protect water quality, maximize wildlife habitat and reduce evaporative losses.

The DEIS indicates the Licensee is uncertain regarding other uses of the Make-Up Pond C site. DNR appreciates the sensitive nature of operation and protection of a nuclear generation station. However, London Creek constitutes Waters of the United States and any impacts to it for purposes of a reservoir the size of the one being proposed should include an examination of compatible public use opportunities. These compatible public use opportunities might include fishing and boating opportunities and other compatible appreciative uses along the northern boundary. DNR recommends continued discussion with the Licensee regarding potential, compatible public use opportunities on a portion of the proposed Make-Up Pond C.

2.3.1.1. Surface Water Hydrology

Impoundments

This section provides a discussion of the seasonal required minimum flows and drought contingency flow for the Ninety-Nine Islands Hydroelectric Project (Ninety-Nine Islands Project). The Review Team indicates that they are awaiting clarification from the FERC whether each of the seasonal minimum flows or only the drought contingency flow is the appropriate criteria to curtail withdrawals. For the Review Team's reference, Article 402 of the FERC license for the Ninety-Nine Islands Project, as amended on November 15, 2011, is as follows:

Article 402. Within 60 days from the date the Commission approves the gaging plan required in Article 403, except when *inflow* is less than the required minimum flow for a

specific month, the licensee shall release from the Ninety-Nine Islands Project into the Broad River a *continuous* minimum flow of 966 cubic feet per second (cfs) (January through April), 725 cfs (May, June, and December), and 483 cfs (July through November) as measured below the project for the protection of fish resources below the project in the Broad River. During the December through June period, when *inflow* is less than the above required minimum flows, a *continuous* flow of 483 cfs shall be released as a drought contingency flow. If *inflow* is less than 483 cfs during any period, the licensee shall shut down all units when the pond elevation drops to the seasonal maximum drawdown limit required by Article 401 and shall operate one unit at its minimum hydraulic output for that portion of every hour which is necessary to discharge the approximate accumulated inflow. Alternatively, during low flow periods, the licensee may elect to open the trash gate or, otherwise spill water to release inflow. These minimum flow requirements may be temporarily modified if required by operational emergencies beyond the control of the licensee, and for short periods upon agreement between the licensee, the South Carolina Department of Natural Resources, and the U.S. Fish and Wildlife Service. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident (emphasis added).

There should be no misunderstanding regarding the provision of seasonal minimum flows, triggers for releasing the lowest minimum flow and reservoir fluctuation limits for the Ninety-Nine Islands Project. Article 402 clearly states that the continuous seasonal minimum flow, or a drought contingency flow, when inflow is less than the seasonal minimum flow, are appropriate criteria for curtailment of withdrawals from the Broad River. DNR guards against any interpretation that reductions in releases down to or below 483 cfs could be based on reservoir levels rather than inflow. Reductions based on reservoir levels are not consistent with Article 402 of the FERC license, which stipulates that seasonal minimum releases and drought contingency releases are based on inflow. DNR will oppose any proposal to modify seasonal flows for the Ninety-Nine Islands Project.

2.4.1.2. Terrestrial Resources-Make-Up Pond C Site

Wetlands

This section briefly describes jurisdictional wetlands and Waters of the United States that would be impacted for construction of the Lee Nuclear Station and Make-Up Pond C and therefore subject to Section 404 permitting requirements. Section 404(b)(1) of the Clean Water Act requires the Licensee, through any permitting application, to demonstrate that impacts to Waters of the United States have been avoided and minimized to the greatest practicable extent, and that compensation for unavoidable impacts is provided. DNR will submit comments and recommendations on the Section 404 permit application for Lee Nuclear Station to the USACE, Charleston District. DNR looks forward to productive communication with the USACE and Licensee on appropriate mitigation that is commensurate with the London Creek site and which will replace the suite of functions that will be lost should Make-up Pond C be constructed.

Significant Natural Areas

The presence of the many rare plant communities described in this section attest to the integrity of the London Creek site.

Noteworthy Natural Community Types and Rare Plant Species

The presence of noteworthy community types, such as mountain coves and bluffs, and rare plant species further points to the resource value and relative integrity of the London Creek site.

Wildlife

As observed by DNR during its December 2009 site assessment and as revealed in the surveys conducted by the Licensee's agents, the London Creek site is a relatively undisturbed Piedmont bottomland hardwood system comprised of quality micro habitats hosting a number of rare and sensitive species. Many of these habitat types are becoming increasingly rare in the upstate and are under increasing pressure from development. The proposed Make-up Pond C would remove a significant amount of bottomland hardwood habitat and the transitional areas adjacent to it. Riparian corridors such as that along London Creek are important for connectivity at the landscape scale and serve as migration corridors for wildlife and neotropical migrating birds.

Amphibian and Reptiles

The diverse amphibian assemblage documented at the London Creek site is an indication of the relatively high environmental integrity of this site. Amphibians, as a group, represent tangible linkages between aquatic, wetland and terrestrial habitats and are dependent upon some type of aquatic habitat for all or a part of their lifecycle. Therefore, the diversity of aquatic habitat such as that located at the London Creek site (e.g., stream channel, small tributaries, seepage wetlands, isolated wetlands, floodplain, rocky outcrops and bluffs) is important in maintaining high amphibian diversity.

Salamanders and Newts

DNR notes that the mud salamander (*Pseudotriton montanu*), four-toed salamander (*Hemidactylum scutatatum*) and three-lined salamander (*Eurycea guttolineatar*) are salamander species as-of-yet not documented at the site, posing a particular challenge to survey as they are highly fossorial, have specific habitat requirements and may be present on the surface only during breeding. These species are more likely to be documented through a longer duration survey or through use of a survey methodology such as drift fence arrays with pitfall traps. Salamanders are highly sensitive to changes in water quality and canopy structure, soil moisture regimes and oxygen content in water; changes in any one or a combination of these parameters may result in significant habitat degradation, rendering it unsuitable for many salamander species. This does not appear to be the case at London Creek, as the herpetological survey documented that 8 of the 11 potential salamander species (72%) that could potentially occur have been documented onsite. It is DNR's opinion that the salamander assemblage at London Creek is indicative of a healthy and functional system.

2.4.1.3 Transmission Line Corridors

The Licensee proposes to build 4 new transmission lines along Routes K and O to their respective tie-in locations on the existing 230-kV Pacolet Tie–Catawba line, located approximately 7 mi south of the site and the existing 525-kV Oconee–Newport line, located approximately 15 mi south of the site. Clearing impacts from the construction of the transmission line corridors will permanently remove wildlife habitat. Bottomland hardwood habitats support an array of wildlife species due to the abundance of fruiting and flowering plants and an abundance of natural cover for animals. Mast-producing hardwood tree species such as oaks and hickories provide an abundant and reliable food source, tree cavities characteristic of mature hardwood trees provide preferred nest and den sites, and snags and downed woody debris provide food sources and cover for a variety of wildlife including invertebrates, reptiles, amphibians, birds and mammals. Bottomland hardwood forests also provide travel corridors for mammals and nesting, migration and winter habitat for birds. Many birds use bottomland hardwood forests as nesting, foraging, migration and winter habitat. These birds include resident birds as well as Neotropical and Nearctic

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migrants. Resident and migratory waterfowl also utilize flooded bottomland hardwood habitats as nesting, brood-rearing, foraging or roosting areas.

Upland hardwood forests and mixed pine-hardwood forests support many of the same species as bottomland hardwood forests, with the exception of those species which are wetland obligates. Species of highest conservation priority in South Carolina which inhabit or utilize upland hardwood forest or bottomland hardwood forest include: Eastern wood pewee (*Contopus virens*), Kentucky warbler (*Oporornis formosus*), black-throated green warbler (*Setophaga virens*), little blue heron (*Egretta caerulea*), yellow-crowned night heron (*Nyctanassa violacea*), rusty blackbird (*Euphagus carolinus*), Swainson's warbler (*Limothlypis swainsonii*), swallow-tailed kite (*Elanoides forficatus*), wood thrush (*Hylocichla mustelina*), worm-eating warbler (*Helmitheros vermivorum*), black bear (*Ursus americanus*), and northern yellow bat (*Lasiurus intermedius*).

Grassland birds are among the most steeply declining of all bird populations in North America due to loss and degradation of grassland and shrub-scrub habitats. Transmission corridors can provide significant habitat for grassland birds, as well as raptors and small mammals, by functioning as linear grassland/shrublands. Excellent wildlife habitat, as well as safe and efficient power delivery, can be provided by managing these areas as a combination of native grasses, forbs, and small shrubs through direct seeding or natural regeneration. Any direct seeding of corridors should utilize only native plant materials. Sod-forming grasses like Bermuda grass and fescue and aggressive non-native forbs provide poor wildlife habitat along the right-of-way and can potentially escape to adjacent woodlands or fields resulting in additional habitat degradation. DNR recommends that where possible lands within transmission line corridors should be managed for the benefit of wildlife.

2.4.1.5 Important Terrestrial Species and Habitats

A number of state listed plant and animal species occur within the footprint of Make-Up Pond C and the transmission line and railroad corridors. Impacts to individuals and/or habitat of conservation priority species should be avoided to the greatest extent practicable. Where appropriate, the Licensee should consult with DNR on potential relocation of conservation priority plant species populations that may be impacted by construction.

2.4.2.1 Aquatic Resources – Site and Vicinity

Broad River and Ninety-Nine Islands Reservoir

This section of the DEIS discusses the provision for fish passage facilities at 7 hydroelectric projects on the Broad River under the Santee River Basin Accord for Diadromous Fish Protection, Restoration, and Enhancement of 2008. The Ninety-Nine Islands Project is fourth in line for the installation of fish passage facilities if efforts to pass anadromous fish species such as American shad and blueback herring (*Alosa aestivalis*) are successful. DNR recommends confirmation that the proposed intake and diffuser structures would not conflict with the footprint of a fish passage facility at the Ninety-Nine Islands Dam, should one be constructed in the future.

Fish

2000s

DNR staff sampled the upper portion of the Ninety-Nine Islands Reservoir and a site 4.5 km below the dam while completing the Broad River Aquatic Resources Inventory (Bettinger, Crane and Bulak, 2003). State conservation priority species collected include seagreen darter (*Etheostoma thalassinum*), piedmont darter (*Percina crassa*), quillback (*Carpionodes cyprinus*), greenfin shiner (*Cyprinella chloristia*),

fieryblack shiner (*Cyprinella pyrrhomelas*), notchlip redhorse (*Moxostoma collapsum*), V-lip redhorse (*Moxostoma pappilosum*), snail bullhead (*Ameiurus brunneus*) and flat bullhead (*Ameiurus platycephalus*). Important recreational fisheries include largemouth bass (*Micropterus salmoides*) smallmouth bass (*Micropterus dolomieu*) and black crappie (*Pomoxis nigromaculatus*). Although sampling results indicated that the condition of the largemouth bass population was good, largemouth bass condition near sites of industrial effluent were adversely affected. Carolina darter (*Etheostoma collis*), fantail darter (*Etheostoma flabellare*) and highback chub (*Hybopsis hypsinotus*) are known state conservation priority fish species from the Kings Creek system, which drains into the Broad River below Ninety-Nine Islands Reservoir and therefore could be affected by activities at the Lee Nuclear Station. The Broad River below Ninety-Nine Islands Reservoir also supports an excellent smallmouth bass fishery that is enjoyed by South Carolina anglers as well as anglers from surrounding states. The fishery is augmented with supplemental stockings, but the majority of fish are wild spawned. Smallmouth bass grow rapidly and reach large sizes in the Broad River giving anglers the opportunity to catch trophy fish.

London Creek

If permitted, Make-Up Pond C, at 632 acres, would be the largest reservoir permitted in the state of South Carolina since Lake Russell. The proposed flooding of more than 6 miles of stream will require mitigation for unavoidable impacts to Waters of the United States. In order to adequately mitigate all identified impacts, the Licensee will be required to develop a comprehensive mitigation plan. For impacts to the amount of wetlands and stream that will be involved to develop Make-Up Pond C, such a mitigation plan should encompass more than simple wetland and stream impact restoration and compensation. DNR requests continued discussion with the Licensee and resource agencies regarding appropriate compensatory mitigation to replace the lost functions of London Creek and its riparian corridor on a watershed scale.

2.4.2.4. Aquatic Ecology Monitoring

Of particular importance to DNR is the assurance that the aquatic ecology of Ninety-Nine Islands Reservoir and the Broad River downstream of Ninety-Nine Islands Dam will not be adversely impacted by operations at the Lee Nuclear Station, particularly the smallmouth bass fishery, which is more sensitive to potential thermal impacts. DNR has reviewed the Mixing Zone Request prepared by Geosyntec on behalf of the Licensee in support of their National Pollutant Discharge Elimination System (NPDES) permit application, which includes a summary of the model used to characterize the thermal and chemical plume. DNR notes that only the normal operations discharge of 18 cfs was considered in model scenarios. The maximum discharge of 64 cfs was not considered as a model scenario. During the interagency meeting held on February 17, 2012, DNR was assured by the Licensee that maximum discharge events would occur only during high flow periods. DNR requests additional information on the duration and magnitude of maximum blowdown discharge events. We are particularly interested in the extent of the thermal plume below the dam during maximum discharge. DNR urges due diligence by the South Carolina Department of Health and Environmental Control (DHEC) to ensure that the NPDES permit for the Lee Nuclear Station will be conditioned to require appropriate biological and chemical monitoring, to include fish community monitoring, before and after commencement of operations.

CHAPTER 4 – CONSTRUCTION RELATED IMPACTS

4.1.2 The Make-Up Pond C Site

See comments in sections 2.2.2 The Make-Up Pond C Site, 2.4.1.2 Terrestrial Resources-Make-Up Pond C Site, and 2.4.2.1 Aquatic Resources – Site and Vicinity.

4.1.3.1 Transmission Line Corridors

See comments in section 2.4.1.3 Transmission Line Corridors.

DNR staff met with representatives of the Licensee in August 2010 regarding DNR's concern about view-shed impacts from the transmission lines to the Scenic Broad River. During this meeting, Duke's representatives provided DNR staff a presentation depicting a simulation of the view-shed post construction as would be seen by recreationists utilizing the Broad River. Based on these depictions, DNR understands that the transmission lines will be minimally visible to the recreating public during winter leaf-off conditions. Furthermore, DNR understands that impacts can be further reduced through the employment of shorter towers along the Scenic Broad River corridor. DNR requested and was assured of continued consultation during the design phase of the transmission lines; however, as of this date, DNR has not received any such consultation. DNR urges the Licensee to avoid and minimize visual impacts to the greatest practicable extent through the careful design and placement of transmission lines (e.g., shorter towers and the use of wider buffer in those sections of the corridor along the Scenic Broad River).

4.3.1.1 Terrestrial Resources – Site and Vicinity

Wetlands and Streams

See comments in section 2.4.1.2. Terrestrial Resources-Make-Up Pond C Site

4.3.1.2 Terrestrial Resources – The Make-Up Pond C Site

See comments in sections 2.2.2. The Make-Up Pond C Site, 2.4.1.2 Terrestrial Resources-Make-Up Pond and 2.4.2.1 Aquatic Resources – Site and Vicinity.

Lake Cherokee

Construction of Make-Up Pond C would directly impact approximately 4.4 acres of land titled to DNR at Lake Cherokee. Make-Up Pond C would inundate forest land on the DNR site and directly affect the Lake Cherokee Dam. Lake Cherokee is public property titled to the State of South Carolina through its agency, DNR. Lake Cherokee provides recreational fishing opportunities to the public constituting the highest and best use of the property. DNR likely would oppose any attempt by Duke Energy to acquire Lake Cherokee and alter the use of these lands by way of condemnation. DNR can consider making some part of its land at Lake Cherokee available for use and/or modification. The DNR Board has adopted a policy for responding to requests for exclusive use of DNR owned land. A copy of DNR Board Policy 400.01 is attached. In the event DNR staff and Duke Energy reach an agreement on use of DNR land, the agreement would have to be approved by the DNR Board and the South Carolina Budget and Control Board. Sections 1-11-65, 10-1-130, and 10-1-135, SC Code Ann, govern this issue.

Based upon DNR Policy 400.01, the statutes cited above, and past action on requests to use DNR owned land, DNR is willing to negotiate an agreement to allow Duke Energy to use and/or modify some part of the Lake Cherokee tract. Among the considerations in any negotiation will be the following:

1. DNR must be fully compensated for the loss of use of any land,
2. The physical integrity of Lake Cherokee and its supporting infrastructure must not be compromised,
3. The future use of Lake Cherokee as a public recreational site must not be adversely effected, and
4. The most likely means of authorizing use of DNR land would be by way of a grant of an easement.

4.3.1.3 Terrestrial Resources – Transmission-Line Corridors

See comments in section 2.4.1.3 Transmission Line Corridors.

4.3.1.6 Terrestrial Mitigation and Monitoring

Waters of the United States and Upland Habitats

The DEIS indicates that the Licensee has consulted with the USACE Charleston District in the development of a compensatory mitigation plan in conformance with the 2002 Standard Operating Procedure for Compensatory Mitigation (SOP). The 2002 SOP has been superseded by the Guidelines for Preparing a Compensatory Mitigation Plan, October 2010 revision (2010 Guidelines). All compensatory mitigation should be developed in conformance with the 2010 Guidelines.

4.3.2.1 Aquatic Resources – Site and Vicinity

Make-Up Pond C

See comments in sections 2.2.2. The Make-Up Pond C Site, 2.4.1.2 Terrestrial Resources-Make-Up Pond and 2.4.2.1 Aquatic Resources – Site and Vicinity.

The Review Team indicated that it is unclear whether a minimum release from Make-Up Pond C downstream from the dam will be instituted or required. The provision of a seasonally-adjusted minimum flow is DNR policy and is embraced by the South Carolina Surface Water Withdrawal, Permitting, Use, and Reporting Act (SC Code 33 Ann. 49-4). DNR recommends that the Section 404 permit/Section 401 state water quality certification be conditioned to require a seasonal minimum flow release that is protective of downstream aquatic resources. The minimum flow should commence with the filling of Pond C to avoid and minimize adverse impacts to fish and the macrobenthic community downstream of the dam to the confluence of London Creek with the Broad River.

CHAPTER 5 – OPERATIONAL IMPACTS AT THE LEE NUCLEAR STATION SITE

5.1.1 The Site and Vicinity

See comments in section 2.2.2. The Make-Up Pond C Site.

5.1.2 Transmission-Line Corridors and Offsite Areas

See comments in section 2.4.1.3. Transmission Line Corridors.

5.2.3.1 Surface-Water Quality

Solutes from the Broad River, such as heavy metals, and chemical contaminants will be concentrated as they pass through the closed cycle cooling system before their eventual discharge into the Ninety-Nine Islands Reservoir. The Review Team concluded:

the concentrations of the solutes would be diluted by the streamflow within a short distance below the dam, and any localized increase would be undetectable relative to background by the time the water reaches the City of Union, South Carolina public water supply intake 21 mi downstream of the discharge.

DNR notes that South Carolina R. 61-68, Water Classifications and Standards allows for the establishment of a mixing zone, under certain circumstances, where chemical and thermal effluent “mixes” with surface water and becomes assimilated, and where water quality criteria can be exceeded

(the Licensee has requested such a mixing zone in their NPDES permit application.) R. 61-68(c)(10) stipulates that the size of the mixing zone *shall be minimized*. DHEC typically interprets this such that the dimensions of the mixing zone, for chronic toxicity, shall be no more than 2 times the width of the river in length and 1/2 the width of the river in width, and for acute toxicity, no more than 1/3 the width of the river in length and 1/10 the width of the river in width. DNR has requested consultation with DHEC throughout the NPDES permitting process regarding appropriate biological and chemical compliance monitoring. DNR requests courtesy notification of water quality excursions, should they occur.

Low Flow Operations

DNR notes a discrepancy between the DEIS and the § 404 Application on the size of the thermocline needed for Make-Up Pond C. The DEIS indicates that the Licensee determined, based on examples from similar reservoirs in the region, that a thermocline of 20 ft would be needed as a zone of aquatic refuge. However, the § 404 Application indicates that there are “design constraints” to constructing the dam at the elevation needed to provide a 20-ft thermocline (653 ft msl). According to the § 404 Application, subsequent analysis showed that an upper volume of 17 ft would be sufficient to preserve the natural stratification and turnover pattern. DNR requests clarification on the size of the thermocline needed for aquatic refuge.

Chemical Impacts from Discharge

See comments in sections 2.4.2.4 Aquatic Ecology Monitoring and 5.2.3.1. Surface Water Quality.

5.3.2.4 Aquatic Monitoring

See comments in section 2.4.2.4. Aquatic Ecology Monitoring.

CHAPTER 7- CUMULATIVE IMPACTS

The secondary and cumulative impact potential of the proposed Lee Nuclear Station is significant and the zone of influence would extend beyond the direct footprint of the impact zone. The loss of approximately 1,500 acres of forest for the development of the Lee Nuclear Station would result in the loss of quality Piedmont plant communities that are becoming increasingly rare, such as seepage swamp, floodplain canebrake, Piedmont acidic mesic mixed hardwood forest and Piedmont beech/heath bluff. Also located within the footprint of Make-Up Pond C were 5 conservation priority plant species: drooping sedge (*Carex prasina*), southern enchanter’s nightshade (*Circaea lutetiana ssp. Canadensis*), southern adder’s-tongue fern (*Ophioglossum vulgatum*), Canada moonseed (*Menispermum canadense*), and single-flowered cancer root (*Orobancha uniflora*). Lee Nuclear Station operations may also impact sensitive and/or rare aquatic species. Nine state conservation priority fish species have been documented within the Ninety-Nine Islands Reservoir (see section 2.4.2.1 Aquatic Resources – Site and Vicinity). Nearly 7 miles of London Creek and associated riparian forest would be permanently lost, and there would be permanent conversion of terrestrial and aquatic habitat to a shrub, scrub community for the construction of 31 miles of new transmission line corridor. As noted by the Review Team, the construction of the Lee Nuclear Station would result in forest fragmentation, loss of connectivity for migrating wildlife and degradation and/or loss of aquatic and forested habitat, with a concomitant loss of plant and animal species dependent upon these habitats. Due to the magnitude of impacts associated with Make-Up Pond C and transmission line corridors, the Review Team has classified the impact to terrestrial and aquatic resources as MODERATE. However, the Review Team concludes even individual impacts classified as SMALL can be important if they contribute to or accelerate the overall resource decline. A thorough accounting of all impacts, including direct, secondary and cumulative impacts should be undertaken by the Licensee. In keeping with the Memorandum of Agreement between the Environmental Protection Agency and the USACE on The Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines, the Licensee must provide compensatory mitigation commensurate with the quality

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impacted. DNR will endeavor to work with the Licensee and natural resource land regulatory agencies to assist the Licensee in identifying appropriate mitigation opportunities that adequately replace lost functions of London Creek and its watershed due to construction of the proposed Lee Nuclear Station.

CHAPTER 9 – ENVIRONMENTAL IMPACTS OF ALTERNATIVES

DNR has concluded the Licensee has conducted a thorough and exhaustive review of the need for obtaining additional water supply for safe operation of the proposed facility during periods of extreme drought. A number of the alternatives that have been put forward for additional water supply represent engineering solutions exceeding the capability for DNR analysis. DNR is satisfied the Licensee has identified the least damaging alternative to natural resources for provision of additional water supply based on comparison of alternative supplemental water supply options.

DNR appreciates the opportunity to comment on the DEIS. If your office should have any additional questions please contact Vivianne Vejdani at vejdani@dnr.sc.gov or 803.734.4199.

Sincerely,



Bob Perry
Director, Office of Environmental Programs

c: Kelly Laycock – USEPA
Pace Wilber – NMFS
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SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES

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**BOARD POLICY POLICY #: 400.01 Page 1 of 2 SUBJECT: Request to Use or Acquire Real Property Under the Jurisdiction of SCDNR
Revised July 1, 2004**

STATEMENT OF POLICY

Requests to use or acquire any real property or interest therein under the jurisdiction of SCDNR must be made in writing to the Director. The request must identify:

- I. The name(s) and address(es) of all persons or entities on whose behalf the request is made.
- II. The specific parcel of property which is the subject of the request and the specific area or acreage of the property which is the subject of the request.
- III. A brief description of the nature of the request; e.g., request to purchase; request for property exchange; request for a right-of-way, rental or temporary use, etc.
- IV. The duration of the requested use; e.g. permanent, thirty days, twelve months with renewal, etc.
- V. The type use and the expected frequency of use; e.g., light truck travel - weekly, heavy equipment travel for duration of project, etc.
- VI. What benefit will accrue to the public if the Department grants request.
- VII. Whether alternate route or locations not on state property have been investigated and why they cannot be used in lieu of state property.
- VIII. The anticipated impact on the environment; anticipated impact on Department programs; anticipated impact on current or future Department use of the property; and any anticipated impact on any surrounding property.
- IX. What mitigation or compensation is offered for the use of the property.
- X. Whether the requesting entity expects exclusive use of the property or whether the intended use will allow other members of the public to make a similar use of the property.
- XI. In evaluating requests for use or acquisition of real property or interest therein under the jurisdiction of SCDNR, the Department must first consider those requirements outlined in § 10-1-135, Code of Laws of South Carolina (1976), as amended. Those are:

- A. Is there an important public necessity for the encroachment.
- B. Are there alternate routes or locations not on state property which are either prudent or feasible.
- C. Is the proposed encroachment disruptive of the existing or planned uses of state property.
- D. Has the entity requesting the encroachment offered to make reasonable mitigation of the impacts of the proposed encroachment.

XII. Once a request is received the Director will contact the Division whose programs or operations is most directly affected and request that that Division undertake a study of the request and make a written response to the Director on the impacts to proposed use.

XIII. The written report must be transmitted to the Director within ninety (90) days after a completion of the investigation.

XVI. The Director will then make a determination as to whether or not the request should be granted and notify the requesting individual.

XV. If the Department concludes that the request should be granted, the Office of Chief Counsel will prepare the appropriate documents and transmit them to the Director of Administrative Services for submission to the Budget and Control Board with a letter recommending favorable action. Once the Budget and Control Board has taken action, the Office of Chief Counsel will notify the requesting party of that action.