

Catawba-Wateree Comprehensive Relicensing Agreement (CRA) Lake Level Modifications Briefing

Presented to the

Catawba-Wateree River Basin Advisory Commission

October 6, 2017

Catawba-Wateree Lake Level Modifications

Summary of Comprehensive Relicensing Agreement Revisions

- Previewed with Catawba-Wateree River Basin Advisory Commission (CWRBAC) February 5, 2016
- Presented to CRA Parties February 29, 2016
- All modifications unanimously approved by the 70 CRA Parties on August 6, 2016
- CWRBAC was updated via teleconference on October 26, 2016
- CWRBAC filed a supporting letter with both state WQC agencies on October 27, 2016

Modification	CRA Party Requesting (Reason)	Affected CRA Section(s)	Modification Implementation Date
Change 6,000 cfs recreation flow release at Wylie Hydro Station to 3,000 cfs	Carolina Canoe Club (Safety)	Appendix A, page A-6	After state water quality certification amendment and FERC license amendment approvals are received.
Repurpose East Wateree Access Area funding	Kershaw County, SC and SC Department of Natural Resources (Changed circumstances)	10.27.35.4	Immediately upon reissuance of this Revision incorporating Party approvals.
Additional option for funding for Upper Wylie Motorboat Launch Improvements	Belmont, NC, Mecklenburg County, NC and Duke Energy (Improve drought resiliency)	10.27.21.3	Immediately upon reissuance of this Revision incorporating Party approvals.
Technology flexibility for flood management at Lake Wateree	Duke Energy (Thorough consideration of options)	14.6.3	After FERC license amendment approval is received (Note: This is not a requirement of state water quality certifications).
Add six inches to James, Norman, and Wylie summer Normal Target Elevations (Catawba-Wateree Water Management Group's (CWWMG) Water Supply Master Plan)	Duke Energy and other CRA Parties that are also CWWMG Members (Improve drought resiliency)	Appendix A, pages A-1 and A-2	State water quality certification amendment and FERC license amendment approvals are required. If approvals are received, this modification would be implemented after Wateree Dam is modified to improve flood management or 12/31/2025 whichever is later.

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Background

Raising summer target operating levels during May through October each year was evaluated as part of the Catawba-Wateree Water Management Group's (CWWMG) Water Supply Master Plan (WSMP) development.

<https://drive.google.com/file/d/0Bxck3-wbAJTAWVk5R2JfdjVxdFE/view>

The work effort, results, and recommendations in the WSMP were developed by the CWWMG in consultation with state agencies from North and South Carolina and a Stakeholder Advisory Team (SAT).

Catawba Regional Council of Governments (COG)

Western Piedmont COG

Central Midlands COG

Lake Wylie Marine Commission

NC Wildlife Resources Commission

SC Department of Natural Resources

The NC Conservation Fund

Kershaw County, SC

International Paper

Centralina Regional COG

Isothermal Regional COG

Lake Norman Marine Commission

NC Division of Water Resources

SC Department of Health and Environmental Control

Catawba-Wateree Relicensing Coalition

Newton, NC

Resolute Forest Products

Siemens Westinghouse

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Benefits

- Increases the amount of stored water by 8 billion gallons during summer months
- This strategy alone could extend the water yield of the Catawba-Wateree lake system by one decade beyond the baseline conditions
- When coupled with other WSMP strategies, extends the system water yield by an additional 40 to 50 years beyond baseline conditions
- Additional water volume for water supply, recreational uses and environmental resources during periods of extreme drought
- Benefits the entire Catawba-Wateree Basin

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Risk Assessment

- The CWWMG modelled (via CHEOPS) all C-W reservoirs with and without increases to assess risk of high-water events.
- Both the number of spill events and the duration of spill events (days over local elevation 100.2 ft and days over local elevation 103 ft) are summarized below.
- Out of a base analysis period of record of 29,950 days (82 years), the modelling predicts the maximum change in the number of spill days at **any location without spill gates** (James) to not exceed 0.06% over the analysis period.
- This operational modification creates no significant increase in the risk of high-water events.

Period of Record 1929 to 2010 (29,950 days)	CHEOPS Model Results (Notes 1, 2)					
	Number of Spill Events		Days Over Elevation 100.2 ft		Days Over Elevation 103 ft	
Ungated Dam Locations	Baseline	6" Summer Target Increase at James, Norman, and Wylie	Baseline	6" Summer Target Increase at James, Norman, and Wylie	Baseline	6" Summer Target Increase at James, Norman, and Wylie
Lake James	63	70	160	177	6	7
Lake Rhodhiss	255	260	604	605	26	29
Lookout Shoals Lake	817	810	1,075	1,086	42	43
Mountain Island Lake	140	134	183	190	41	36
Great Falls Reservoir	209	213	2,952	2,904	828	837
Lake Wateree	280	282	266	267	26	25

Note 1 - Baseline Scenario uses New License requirements, projected water withdrawals.

Note 2 - Six-inch Summer Target Increase applies May 1 to October 1.

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Risk Assessment (cont'd)

- Modeling results actually were independently evaluated by a Lake Wateree resident
- Duke Energy would not implement the higher reservoir target elevations at any of the three reservoirs until after Wateree Dam is modified to improve flood management or 12/31/2025 whichever is later
- Even with the proposed reservoir target level increases, during normal conditions:
 - Lake James retains 1.5 ft. of storage available to capture rain events
 - Lake Norman retains 1.5 ft.
 - Lake Wylie retains 2.5 ft.
- Normal reservoir ranges are unchanged
 - Duke Energy retains the flexibility to position these three and all other reservoirs at any elevation within their normal ranges
 - Duke Energy can lower reservoir levels in anticipation of storm events and create storage space for incoming precipitation and runoff

Pending License Actions

Pending Action	When will pending action occur?*	Activities “unlocked” when pending action taken	Time frame for “unlocked” activities
FERC approval of license amendment application filed 5/5/2017 (includes two implementation plans)	2017 (est.)	Initiates compliance schedule for installing all flow release provisions and water quality monitors	Projects range from already complete to 55 months after pending action is complete.
FERC approval of Recreation Management Plan (RMP) filed 11/2016	2017 (est.)	Initiates compliance schedule for 55 new or expanded license-required recreation areas	28 - 1 st five years 16 - 2 nd five years 8 - 3 rd five years 3 - 4 th five years
Final resolution to 40-vs.-50 year license term challenge, currently before the United States Court of Appeals, District of Columbia Circuit	<ul style="list-style-type: none"> All court filings completed in March, 2017 Court has issued no schedule Next step is expected to be oral arguments Potential for further appeals 	<p>Initiates compliance schedule for completing additional flow release capacity on the Wateree spillway</p> <p><u>Assuming a 50-year license:</u></p> <ol style="list-style-type: none"> \$1.5M to NC to purchase recreation and conservation lands \$1.5M to SC to purchase recreation and conservation lands 	<p>Eight years after date of final resolution</p> <p><u>Assuming a 50-year license:</u></p> <ol style="list-style-type: none"> Within three years after date of final resolution Within three years after date of final resolution

*We do not know

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Discussion