

Catawba-Wateree Hydro Project (FERC No. 2232)
Study Plan Scope Document

Study Plan Name: Reservoir Level Study

Study Plan Designation: Operations 02

Study Short Description: A study that will evaluate seasonal lake elevation targets and ranges (maximum and minimum) based on historical operational data and outcomes of other studies for selected reservoirs on the Catawba-Wateree Project (Project).

Applicable Hydro Projects/Developments: Limited to reservoirs with appreciable storage volume-Bridgewater (Lake James), Cowans Ford (Lake Norman), Wylie (Lake Wylie), Wateree (Lake Wateree) plus a review of minimum elevations at all other Project reservoirs

Prerequisite Study Designation: Operations 04

The purpose of this document is to describe the study scope, basic methodology and how results will be used. Study Teams and Resource Committees may develop supplemental study methodology details if and when they determine them to be necessary.

I. Study Objective

The objective of this study is to evaluate potential seasonal target elevations and maximum and minimum elevations based on historical operation. The study will provide data to assist in evaluating potential alternative target elevations for Bridgewater (Lake James), Cowans Ford (Lake Norman), Wylie (Lake Wylie), and Wateree (Lake Wateree) in order to balance the interests of lakeside homeowners, municipal and industrial water users, environmental interests, and power production capabilities. The study will also evaluate the application of target and minimum elevations at the other reservoirs: Rhodhiss (Lake Rhodhiss), Oxford (Lake Hickory), Lookout Shoals (Lookout Shoals Lake), Mountain Island (Mountain Island Lake), Fishing Creek (Fishing Creek Lake), Great Falls/Dearborn (Great Falls Lake), and Rocky Creek/Cedar Creek (Rocky Creek Lake).

II. Basis

The new license for the Project will contain requirements for target elevations that vary seasonally for the larger reservoirs and will contain minimum and maximum elevations for all of the reservoirs. The study team will need to review whether seasonally variable targets also need to be evaluated for some or all of the other reservoirs. An assessment of alternative seasonal reservoir levels is required to assess the impacts of changes in operations on environmental resources.

III. Geographic and Temporal Scope

The study area will be limited to reservoirs with appreciable storage volume-Bridgewater (Lake James), Cowans Ford (Lake Norman), Wylie (Lake Wylie), Wateree (Lake Wateree) plus a review of target and minimum elevations at all other Project reservoirs.

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IV. Summary of Existing Data

The Licensee has access to the following data for use in this study:

- Historical lake level information dating back to 1929.
- Current target elevations that are used as guidelines under current operations.
- Critical lake level data for steam power plants and some critical elevation information for municipal and industrial water intakes.
- Lake levels at which boat ramps become unusable.
- Limited aerial photographs of the lakes from the Shoreline Management Plan (SMP) development.

V. Methodology

The historical lake level data (daily mid-night to mid-night) will be assembled in an ACCESS database. The data will be analyzed to determine both the frequency and time duration that each lake level was within a particular lake level band. These bands and the frequency time duration results will be compared to the stakeholder criteria developed for lake levels.

VI. Schedules and Required Conditions

Since this study is dependent on input data from other studies, the schedule depends on completion of the prerequisite studies listed above. In any case, the development of the various lake level scenarios should be developed and ready for input into the CHEOPS™ model by September, 2005. The following is a high level outline of major activities:

Task	Completion
Compile historical data from Operations 04 study	March 31, 2004
Perform frequency and time duration analysis	August 27, 2004
Document current target elevations (BW, CF, WY, WA)	September 24, 2004
Document current practice for minimum elevations (other reservoirs)	September 24, 2004
 Present results to RC, AGs, And SRTs	 November 26, 2004

VII. Use of Study Results

The results of this study will be used to assist in balancing the often conflicting demands on water stored in the project reservoirs by providing insight into the historical ranges and frequency of reservoir level fluctuations. In addition, the study results will provide information that will help in making decisions regarding target and minimum seasonal lake level elevations for the project reservoirs for use in developing overall potential settlement conditions.

VIII. Study Participants

	<u>Name</u>	<u>Organization</u>	<u>Phone #</u>	<u>E-Mail</u>
Applicant Study Lead	Ed Bruce	Duke Power	704-382-5239	edbruce@duke-energy.com
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Other Participants				

IX. List of Attachments

N/A

X. List of References

N/A