

The following excerpts are from the June 1993 approved water control manual for W. Kerr Scott project.

VII. WATER CONTROL PLAN

7-01. General Objectives. The operation of the reservoir will be governed primarily by flow in the lower Yadkin River. The objectives of the regulation plan for W. Kerr Scott involve consideration of the project purposes, which are to provide for flood control, water supply, recreation, and fish and wildlife.

7-02. Overall Plan for Water Control. The plan of operation for W. Kerr Scott Dam and Reservoir provides for maintaining a normal pool elevation of 1030 feet above mean sea level (feet, msl). Normally, outflow will be maintained equal to inflow at this pool elevation. Flood control storage space is reserved between elevations 1030 and 1075 feet, msl and surcharge storage space is provided in the reservoir above the free-overflow spillway crest elevation of 1075 feet, msl. Flood control releases will be determined primarily by the stage at Wilkesboro, located about 6 miles downstream of the dam. Generally, discharges will be released in such a way as to not contribute to peak stages (due to runoff from uncontrolled drainage areas) at Wilkesboro, Elkin, Enon, and Yadkin College, except that low flow releases will continue to be made. For water conservation purposes, storage space between elevations 1000 and 1030 feet, msl is reserved for water supply and low flow. A minimum instantaneous flow of 125 c. f. s. will be maintained immediately below the dam. Operation for fish propagation involving water level fluctuations will be undertaken as needed.

7-03. Flood Control. The primary objective of the project is the control of floods on the Yadkin River. A storage of 112,000 acre-feet between elevations 1030 and 1075 feet, msl is reserved exclusively for the detention storage of floodwaters. An additional 153,000 acre-feet of surcharge storage exists above the free-overflow spillway crest between elevations 1075 and 1102.5 feet, msl. The plan of operation provides for maintaining the normal pool elevation at Scott Reservoir of 1030 feet, msl by releasing up to nondamage stage flows in the downstream reaches of the river. The flood control objective is to store water in the flood control space in W. Kerr Scott whenever the Wilkesboro river gage exceeds bankfull (damage) stage of 12 feet. Discharges through the conduit at W. Kerr Scott (except for 125 c. f. s.) will not normally be made when the river at Wilkesboro exceeds damage stage. Because of the distance from the dam to Wilkesboro and the amount of uncontrolled drainage area above Wilkesboro, releases from W. Kerr Scott will sometimes be terminated at the beginning of a storm to prevent discharges from contributing substantially to the uncontrolled floodwaters at Wilkesboro. Therefore, discharges from the conduit will be halted (except for a minimum release of 125 cfs) whenever the reservoir level is below elevation 1075 and it is forecast that runoff from a storm may cause damaging flows in the lower Yadkin River Basin. Afterwards, the flood control space in the reservoir will be evacuated at a rate that will cause a nondamage stage of below 12 feet on the Wilkesboro gage. The channel capacity below W. Kerr Scott is 5,400 cfs. During flood emergencies, the Wilkesboro gage will be monitored as necessary to allow the maximum release from the reservoir without causing damaging stages downstream. Operational criteria for various flood situations are outlined below.

a. Reservoir Near Normal Pool Elevation 1030 feet, msl. Reservoir releases will be equal to inflow up to limits described in paragraph b, below.

b. Reservoir Elevation Between 1030 and 1075. During typical flood conditions, if the stage at Wilkesboro is or is forecast to be equal to or greater than 12 feet, the reservoir outflow will be 125 cfs (minimum release). If the stage is or is forecast to be less than 12 feet, the maximum outflow will be equal to approximately 5,400 cfs, or the difference between the flow from the uncontrolled drainage area above Wilkesboro, and 9,700 cfs, whichever is least. The discharge for a stage of 12 feet at Wilkesboro with releases from W. Kerr Scott is approximately 9,700 cfs.

c. Reservoir Above Spillway Crest Elevation 1075. The release will be the full capacity of the outlet works.

d. Rate of Release Change. Increases in discharge rates should not exceed 500 cfs in the first hour of flood release and 1,000 cfs per hour thereafter. Conversely, the transition from high flow releases should be made by reducing discharges from the dam in 500 to 1,000 cfs increments for each 0.5 foot decrease below elevation 1033 feet, msl.

e. Flood Emergency. Whenever W. Kerr Scott Reservoir is in a flood situation and communication with the Reservoir Regulation Section is not possible, the required release from the reservoir will be made by the damtender in accordance with instructions found in the "Standing Operating Instructions to Damtender", exhibit A.

7-04. Low Flow Regulation. The operational plan for maintaining releases from Scott Reservoir which is shown in table 7-1 has been adopted for use during low flow and drought conditions.

7-05. Water Supply. The 33,000 acre-feet of storage space in Scott reservoir between elevations 1000 and 1030 feet, msl is allocated to water supply. A water supply contract was entered into on June 29, 1960 (Contract No. DA-38-081-CIVENG-60-17) between the Federal Government and the County of Wilkes, NC and the City of Winston-Salem, NC. The contract, allows for withdrawals from this storage space, as deemed necessary, provided that such releases, when combined with normal runoff below the dam, will not cause damaging floods. Normally there is no special reservoir operation required for water supply.

Table 7-1
Low Flow Operation Plan

Scott Pool Elevation (Ft., msl)	Minimum Flow and Stage at Wilkesboro, NC	
	Flow (cfs)	Stage* (ft)
1029.00 and above	400	2.11
1028.00 - 1028.99	350	2.01
1027.00 - 1027.99	300	1.90
1026.00 - 1026.99	250	1.78
1024.00 - 1025.99	200	1.66
1023.00 - 1023.99	150	1.53
1000.00 - 1022.99	**	**

Note: Minimum discharge from Scott should not be less than 125 cfs at any time, except during inspection and maintenance periods.

* These stage readings are from Rating Table 21 for the Yadkin River at Wilkesboro, NC, and are subject to change.

** In this range, outflow from the reservoir should be set at 125 cfs.

7-06. Recreation. The reservoir will be operated in the best interest of recreation to the maximum extent possible. The reservoir water level will be maintained near elevation 1030 feet, msl under normal conditions, thereby affording ideal recreation conditions. Only during abnormal periods will the reservoir rise or fall appreciably above or below elevation 1030 feet, msl during the prime recreation season.

7-07. Deviation from Normal Regulation.

a. General. The District is occasionally requested to deviate from normal regulation of W. Kerr Scott. Prior approval for a deviation should be obtained from the South Atlantic Division Office (SAD), except as noted in the emergencies and minor deviations discussed in the following paragraphs.

b. Emergencies. Some emergencies that can be expected are drownings and other accidents, failure of operation facilities, and flushing of pollution during fish kills. Necessary action under emergency conditions should be taken immediately unless such action would create equal or worse conditions. The water control manager for the District will make the decision to deviate, if time permits.

c. Minor Deviations. There are instances that create a temporary need for minor deviations from the normal regulation of the lake, although they are not considered emergencies. Construction downstream of the dam accounts for the major portion of incidents and includes utility stream crossing, bridge work, and major construction contracts. Changes in releases are sometimes necessary for maintenance and inspection. Requests for changes of release rates are generally for a few hours to a few days. Each request is analyzed on its own merits. Consideration is given to upstream watershed conditions, potential flood threat, condition of Scott Reservoir, and possible alternative measures. In the interest of maintaining good public relations, the requests should be complied with, providing there are no adverse effects on the overall regulation of the project for the authorized purposes. The Water Control Manager will approve these deviations as needed. South Atlantic Division will be notified of the deviation as appropriate.

d. Drought Contingency Plan. Existing project operating procedures may be altered during critical drought situations to provide water to both upstream and downstream towns and municipalities and to farmers. The Drought Contingency Plan for the Scott project and the Yadkin River is described in exhibit B.

7-08. Operating Instructions to Damtender. A summary of the reservoir regulation procedures including the responsibilities of the damtender, specific instructions for data collection, and normal and emergency operation procedures is located in exhibit A, "Standing Operating Instructions to Damtender."