

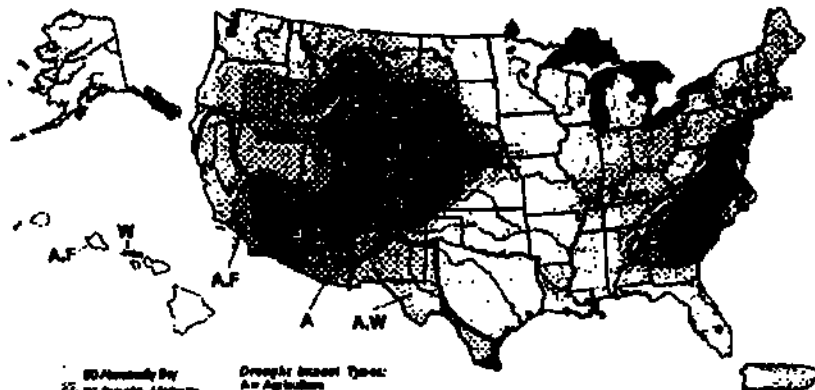
APPENDIX C
EMERGENCY DROUGHT MANAGEMENT PROTOCOL

**YADKIN-PEE DEE RIVER BASIN
EMERGENCY DROUGHT MANAGEMENT PROTOCOL
FOR POST-SEPTEMBER 15 OPERATIONS**

1. **Parties.** This protocol is entered into by Alcoa Power Generating Inc. ("APGI"), Carolina Power & Light Company ("CP&L"), North Carolina Department of the Environment and Natural Resources ("NCDENR"), South Carolina Department of Natural Resources ("SCDNR") and South Carolina Department of Health and Environmental Control ("SCDHCB")(collectively, "the Parties").

2. **Background.** The Parties are entering into this protocol because of the continuation of the drought of unprecedented severity in the region that contains the Yadkin-Pee Dee River basin. Some of the factors that have led to this protocol are the following:
 - North Carolina and South Carolina have experienced drought conditions since June 1998, the longest and most severe drought since hydrologic records have been kept. Groundwater levels in both North and South Carolina are declining at an accelerated rate and dry wells are occurring in both states. The Yadkin-Pee Dee River watershed is in the exceptional drought classification, the most serious category. The Yadkin River portion of the basin has been in the exceptional drought classification since June 18, 2002. The current forecast through November 2002 shows the drought in this region is likely to persist. Normal or above rainfall is forecast for most of South Carolina and coastal North Carolina in December 2002-February 2003 and possibly into the spring of 2003 due to the presence of a weak to moderate El Nino. This should bring some relief, but it may not end the drought.

U.S. Drought Monitor **AUGUST 20, 2002**
10:00 A.M. EDT



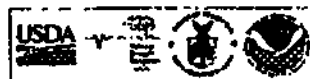
Legend:

Drought Severity:
 D4 Drought-Exceptional
 D3 Drought-Extreme
 D2 Drought-Severe
 D1 Drought-Moderate
 D0 Drought-Mild

Drought Impact Codes:
 A = Agriculture
 W = Water Shortage
 F = Fire Danger (Wildfire)
 H = Human Health Impact
 (No type = All impacts)

The Drought Monitor shows the broad-scale conditions. Local conditions may vary. See accompanying text commentary for recent information.

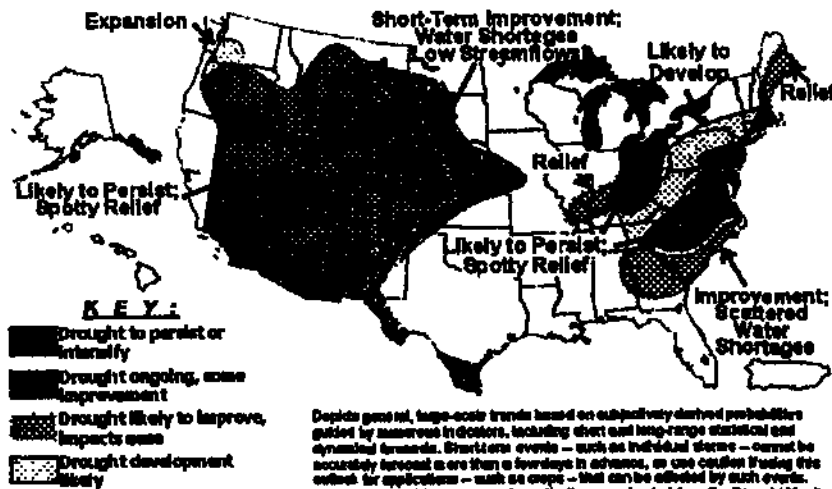
<http://drought.unl.edu/DM>



Released Thursday, August 22, 2002
 Author: Scott Stoeberl/NOAA and NWS, NCEP



U. S. Seasonal Drought Outlook Through November 2002 Released August 14, 2002



- The entire northern coast of South Carolina from Little River, near the State line, to the City of Georgetown depends on the Pee Dee River for their water supply. Included are the Cities of Myrtle Beach, North Myrtle Beach, Conway, Loris, Surfside Beach, and Georgetown, the towns and communities of Little River, Socastee, Aynor, Wampee, Garden City, Murrells Inlet, Litchfield Beach, Pawleys Island and Debidue Beach and unincorporated areas of Horry and Georgetown Counties. These areas are served by four water treatment plants: Myrtle Beach, Grand Strand Water and Sewer, City of Georgetown, and Georgetown County – Waccamaw Neck. Inland from the coast, the City of Cheraw draws its water from the Pee Dee River. Together these serve a year-round population of 275,000. With the Grand Strand area being a major tourist destination, the summer population easily exceeds half a million people.
- The Georgetown County plant has already experienced numerous occasions since last October when the saltwater intrusion elevated chloride levels beyond the EPA secondary standard of 250 mg/l, and it had to cease operations. Georgetown County has been relying on wells that are high in fluoride and sodium and is purchasing some treated water from the Grand Strand Water Plant in order to maintain its system during the shutdowns.
- Six North Carolina public water supply systems withdraw water from the hydroelectric reservoirs on the Yadkin-Pee Dee River in North Carolina. These public water systems are at risk as the prolonged drought has reduced inflows and put the reservoirs under stress as water is released to meet downstream flow requirements, which are substantially greater than inflows. The North Carolina water supply systems involved are:

Tuckertown	Albemarle Denton
Narrows (Badin)	Albemarle
Tillery	Montgomery County Norwood
Blewett Falls	Anson County Richmond County

In the Yadkin-Pee Dee River basin, there is one public water system in an emergency status, 15 under mandatory conservation and 19 under voluntary conservation. There are 70 public water systems in the basin and all but four of the systems have their water source in a threatened or highly vulnerable status.

- The best computer model and information available indicates that during this drought period a daily average flow of 900 cubic feet per second ("cfs") at the Rockingham, North Carolina, USGS gage, should maintain the saltwater front at a close but safe distance from the Grand Strand Water Plant's intake on Bull Creek, a water course connecting the Pee Dee River with the Waccamaw River. Since the Grand Strand Plant, in addition to supplying its own customer base, serves as the backup for Georgetown County, Myrtle Beach and North Myrtle Beach, shutting this intake down would cause hundreds of thousands of people to be out of water.
3. **Purpose.** The purpose of this protocol is to adopt special management measures for the Yadkin-Pee Dee River basin to respond to the unprecedented drought conditions for the protection of public health and safety. Temporary revisions in normal operating policies are needed to reduce the risk to public water supplies in North and South Carolina and to minimize environmental and economic damage being caused by the drought in the reservoirs and rivers of the Yadkin-Pee Dee watershed.
 4. **Term And Release Target.** After September 15, 2002, and until the Parties agree that the drought emergency has passed or March 6, 2003, whichever comes first, the dams and reservoirs of the Yadkin-Pee Dee River basin owned by APGI and CP&L will be operated so as to achieve sufficient flows in the Pee Dee River to prevent salt water intrusion into the water intakes of public water suppliers in South Carolina, subject to conditions described below. The initial target for such flows as measured at the Rockingham, North Carolina, USGS gage, subject to revision by a consensus among the Parties, shall be 900 cfs daily average. The target may be revised based on South Carolina's monitoring of the salt-water movement and other environmental indicators. If the flows in the Pee Dee River as measured at Pee Dee, South Carolina or some other

downstream USGS gage are sufficient as agreed upon by the Parties, then the 900 cfs target at Rockingham may be adjusted.

5. **Reservoir Drawdown Limits.** Subject to operational and environmental considerations, one goal will be a proportional drawdown of the APGI and CP&L reservoirs (High Rock, Tuckertown, Narrows (Badin), Falls, Tillery and Blewett Falls) to minimize drought impacts and equalize the burden on reservoir users and on fish and wildlife. Because of fish kills experienced during this summer, an interim objective will be to raise High Rock Reservoir to a level of 17 feet below normal full pool while other reservoirs on the basin are drawn down proportionately. To that end, Parties have agreed that, at a minimum, it is prudent to plan on having an initial (tier 1) drawdown limit for each of the reservoirs as set forth below:

<u>Reservoir</u>	<u>Down From Normal Full Pool, feet</u>
High Rock	17.0
Tuckertown	3.0
Narrows (Badin)	22.0
Falls	5.0
Tillery	4.0
Blewett Falls	2.0

If the drought continues as forecasts now predict, in order to fulfill the purpose of this protocol it may be necessary to consider further reservoir drawdowns. Before the reservoirs are drawn down below the levels shown in the above table, the Parties will have worked together constructively to arrive at a consensus regarding increased water conservation measures for water withdrawals and reduction of the Rockingham release target, giving due consideration to operating constraints and with the intent of minimizing the overall environmental and economic harm. The following table states a second tier of further drawdown limits:

<u>Reservoir</u>	<u>Down From Normal Full Pool, feet</u>
High Rock	24.0
Tuckertown	3.0
Narrows (Badin)	25.0
Falls	5.0

Tillery	10.0
Blewett Falls	6.0

In the event that the drought continues, the Parties will continue to work together collaboratively as described above to meet the public health emergency created by the drought.

6. **Reservoir Refill.** An explicit goal of this protocol will be to manage the storage in the APGI and CP&L reservoirs in a conservative manner, taking into account the possibility that the drought could extend past March 5, 2003. In recognition of that possibility, the Parties recognize that it is in their collective interest to refill the reservoirs as soon as reasonably possible, and that such reservoir refill will require that outflows are less than the total inflow into the six reservoirs during the refill period. During the refill period South Carolina may request a flow as measured at the Rockingham, North Carolina, USGS gage greater than 900 cfs or the current target, for the purpose of industrial wastewater assimilation, and, if all Parties agree, the target may be adjusted. The larger releases will depend upon current and projected river flows, inflows into the reservoirs, reservoir levels, and time of the year.
7. **Public Communications.** The Parties will cooperate with each other in communicating with the public regarding actions under this protocol. Such public communications will include periodic and as needed actual information and forecasts relating to operations of APGI and CP&L facilities, reservoir levels, streamflows and rainfall.
8. **Constraints.** The commitments of APGI and CP&L to maintain the flows set forth in this protocol are subject to (a) the terms and conditions of their respective licenses under the Federal Power Act as well as the authority of the Federal Energy Regulatory Commission; (b) the operating constraints inherent in their facilities; and (c) their ability to operate their respective units without endangering persons or property. If (a) required by operating emergencies beyond their control or on their respective systems; (b) required as a result of unusual weather conditions; or (c) ordered to do so by the Federal Energy Regulatory Commission, APGI and CP&L may also temporarily operate their respective developments in a manner such that the reservoir levels and/or downstream flows do not meet the targets specified herein.
9. **Regulatory Approval.** The Parties recognize that the ability of APGI and CP&L to respectively perform actions contemplated by this protocol may be constrained by or may require the prior approval of regulatory authorities, including the Federal Energy Regulatory Commission.
10. **Continuing Management Adjustments.** The Parties recognize that the target reservoir level drawdowns and releases are based on the best available information on current conditions. Since the drought is forecasted to continue and there is nothing in the historical record for a drought this severe, the targets will need to be adjusted as conditions change based on new monitoring data and other relevant factors. The targets

for both flows and reservoir levels shall be achieved by weekly consultations among the Parties that result in a consensus plan of operation, taking into account tributary streamflows, rainfall events in the basin, remaining storage and other monitoring data.

11. **Non-Precedent.** This document relates only to the present drought emergency and does not create a precedent for any issue or future period.