

## DROUGHT CONTINGENCY PLAN

In response to the December 20, 2002 letter issued by Joseph D. Morgan, Director, Division of Hydropower Administration and Compliance of the Federal Energy Regulatory Commission ("FERC" or "Commission") (hereinafter "December 20th Letter"), the Yadkin Division of Alcoa Power Generating Inc. ("APGI"), licensee of the Yadkin Project No. 2197, has developed the following Drought Contingency Plan for 2003. In the development of this plan, APGI has consulted with Progress Energy Carolinas, Inc. a.k.a. Carolina Power & Light Company ("Progress Energy"), the North Carolina Department of Environment and Natural Resources ("NCDENR"), the South Carolina Department of Natural Resources ("SCDNR"), the South Carolina Department of Health and Environmental Control ("SCDHEC"), and the U.S. Fish and Wildlife Service ("FWS") (collectively, the "Parties") as requested in the December 20th Letter.

### Background

The States of North Carolina and South Carolina have experienced drought conditions since 1998 -- the longest and most severe drought on record. In 2002, these drought conditions worsened and, in the summer of 2002, reached a state of public health emergency due to the diminished levels of water available for municipal consumption and potential contamination of public water supplies. In an effort to conserve what water remained in the storage reservoirs in the lower Yadkin – Pee Dee River Basin, APGI sought and received several temporary variances from the terms of the Yadkin license.<sup>1</sup>

When these measures proved insufficient, the Parties<sup>2</sup> initiated a consultation process that resulted in a collaborative effort to develop a protocol for operation of the Yadkin Project and Progress Energy's Yadkin-Pee Dee Project reservoirs so as to maximize the use of water remaining in the reservoirs for municipal water supply and to prevent salt water contamination of public water supplies downstream. As a result, the Parties were able to enter into an agreement entitled the "Yadkin-Pee Dee River Basin Emergency Drought Management Protocol for Post-September 15 Operations" (the "Protocol"). By letter dated August 29, 2002, APGI filed an emergency request for Commission action to allow APGI to implement a new operating regime for the Yadkin Project consistent with the Protocol.

In the December 20th Letter, the Director of the Commission's Division of Hydropower Administration and Compliance found that APGI was prudent to have filed the emergency request that it made on August 29th. The Letter noted that as a result of recent rains and the forecast for El Nino conditions to produce a wet winter in the region, the need to continue the temporary license variances is no longer warranted. As a result, the Letter states normal Project operations should resume. The Letter also requests APGI to consult with the Parties to develop a drought contingency plan for the summer of 2003. The proposed drought contingency plan is set forth below.

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<sup>1</sup> See *Alcoa Power Generating Inc.*, Project No. 2197, Letter Requests dated July 3, 2002 and July 22, 2002, as modified on July 26, 2002.

<sup>2</sup> FWS was not directly involved in the drought discussions that took place in the summer of 2002.

## Competing Demands for Water

As was apparent last summer, there are significant demands for water in the region that must compete with each other, especially when there is a scarcity. Moreover, the interactions among these uses are very complex. While a comprehensive list of those users affected is likely to include most of the region, those directly affected include the following:

- Municipal water systems. Six North Carolina public water supply systems withdraw water directly from the hydroelectric reservoirs on the Yadkin-Pee Dee River in North Carolina. In addition, 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 water supply, as do several inland municipalities in South Carolina.
- Coastal South Carolina water and wastewater treatment plants. In addition to the need for water as a source of supply, if stream flows are too low, water treatment plants along the coastal areas of South Carolina (serving up to 500,000 people) will experience salt water intrusion that could require the treatment plants to shut down. The Georgetown County, South Carolina plant experienced a number of these salt water intrusions in 2002. Furthermore, low stream flows also threaten the capacity of the Pee Dee River to assimilate permitted wastewater discharges from municipalities and private industries.
- Environment and Wildlife. The exceptional drought experienced last summer certainly has had an effect on the regional environment and wildlife supported by both the reservoirs and river stretches in the basin. For example, High Rock Reservoir experienced four fish kills in the summer of 2002. The diminished in-stream flows also significantly impacted the fisheries and aquatic habitat resources of the river. Any actions taken with respect to drought management must evaluate such potential negative effects on the environment and wildlife resources.
- APGI and Progress Energy's hydroelectric projects. The APGI and Progress Energy reservoirs serve a vital role in the ability of the hydroelectric generators of the two companies to generate electricity. If required to maintain water in the reservoirs as part of a conservation effort, APGI and Progress Energy (collectively "the Licensees") would not be able to generate electricity as contemplated by their hydroelectric licenses for the two projects. The project licenses also contain operating conditions that dictate strict operational parameters with respect to outflows from the projects as well as reservoir levels. In short, without sufficient water, under the terms of the operating guidelines for the projects, the Licensees would not be able to achieve certain operational goals such as the maintenance of High Rock Reservoir within five feet of full pool during the recreation season.
- Recreational Users. The river and a number of the reservoirs also support substantial recreational interests and activities. Diminished flows in the river and water levels on the reservoirs in the region affect the economic interests of recreational users, local businesses and homeowners in the region.
- Industrial User. Duke Power is a major water withdrawer from High Rock Reservoir.

## Drought Contingency Plan

### **Step 1 - Institute Monitoring and Collaboration Processes**

The first step in drought management is to develop a process by which the Parties can agree that a drought is possible, likely or is occurring. To that end, APGI proposes that the Parties hold periodic meetings to evaluate hydrologic data. APGI proposes to hold monthly teleconferences beginning in March 2003. In the event that the Parties agree that there is a potential for drought conditions based on an analysis of the most current data, APGI would then schedule and hold periodic meetings as needed to evaluate changing conditions and to discuss possible courses of action as explained in more detail below.

The evaluation process in these meetings will include consideration, at a minimum, of forecasts and data from sources related to actual and forecasted stream flow, precipitation, and ground water levels.

These regular evaluation meetings serve a vital function with respect to drought management. All Parties would be apprised of the most current drought outlook on a regular basis. The Parties will cooperate with each other in communicating with the public regarding actions under this Drought Contingency Plan. Such public communications will include periodic and as needed actual information and forecasts relating to operations of APGI and Progress Energy facilities, reservoir levels, streamflows and rainfall.

As a result, the Parties would be able to take any action as they deem appropriate in response. Municipalities, in turn, could choose to implement demand side management such as water use restrictions as deemed appropriate. Thus, the implementation of regularly-scheduled discussions will facilitate communication among the Parties and provide the opportunity for implementation of anticipatory measures to mitigate exposure to a drought where possible.

### **Step 2 -- Implement A Course of Action**

#### **A. Declaration of the Existence of A Drought**

The Parties agree that the existence of a drought will be deemed to occur if at any time the U.S. Drought Monitor elevates 10% or more of the Yadkin – Pee Dee River basin to a Drought Severity Classification of D1 or higher. According to the U.S. Drought Monitor, a D0 classification indicates that an area has been placed on a drought watch, either because the area is drying out and possibly heading for drought, recovering from drought but not yet back to normal, or suffering long-term impacts such as low reservoir levels. Some of the Southeast region currently is in the D0 classification. If this classification is raised to D1 in 2003 within the Yadkin – Pee Dee River basin, a drought will be deemed to exist for purposes of this Drought Contingency Plan and the Parties would then evaluate operational changes as discussed below.

## **B. Implementing Operational Changes**

In the event a drought is declared at any point, the Parties would meet to develop a specific drought response in order to protect public health and safety, and to minimize the environmental and economic damage that may be wrought by an extended drought. The decisions regarding water uses in a drought will require that entities or individuals who under normal water conditions are able to consume or utilize the water for particular purposes must now make due with less. This lack of water will require sacrifices and a balancing of competing interests. An appropriate drought management response will require those affected by the scarcity and those with some ability to control the timing of the flow of available water to make difficult choices in which people, environmental resources, recreation and/or financial interests will be adversely affected. Thus, the implementation of changes must be done so in a manner that protects public health and safety and achieves an appropriate balance of competing interests so that the hardships do not fall disproportionately on any one interest or resource.

Due to the complexity of balancing competing interests, as well as the inherent uncertainty associated with hydrologic forecasting, it is not appropriate to set any specific course of action in a vacuum. As was apparent in the summer of 2002, there are a number of means of ameliorating the effects of drought, not all of which are within APGI's or Progress Energy's control. For example, the public water systems that are dependent upon the Yadkin - Pee Dee River basin for water supply can make and implement their own contingency plans, including implementation of first voluntary and later involuntary water conservation measures. As another example, public systems and industries can make capital investments that permit alternative sources of supply when the Yadkin - Pee Dee River basin is experiencing drought conditions.

Depending on the severity of the actual drought, what the near and longer term forecasts indicate and the point in time at which a drought has been deemed to exist, the Parties will collaborate and may agree that it is appropriate for APGI and/or Progress Energy to make a change to the operation of the projects. APGI and/or Progress Energy would then seek Commission approval for any such change as appropriate.

Among the possible courses of action are the following:

- Licensees may seek temporary variances from the minimum release requirements in the Yadkin and Pee Dee project licenses.
- Licensees may seek temporary variances from the reservoir drawdown limits in the Yadkin and Pee Dee project licenses, or more fully exercise existing drawdown capability.
- Licensees may seek temporary variances from the re-fill requirements in the Yadkin and Pee Dee project licenses.
- Coordinating the use of water in the Yadkin and Pee Dee project reservoirs for purposes of public water supply conservation.

- Raising the water levels at particular reservoirs in order to mitigate environmental effects of a drought.<sup>3</sup>

### **C. Further Data Regarding Salt Water Intrusion**

The December 20th Letter notes that the 900 cubic feet per second ("cfs") target releases used for the summer of 2002 as a minimum flow level necessary to prevent salt water intrusion may be revised based on South Carolina's monitoring of salt water movement and other environmental indicators. Specifically, the December 20th Letter questions whether: (1) the data collected in the summer and fall of 2002 indicates any salt water intrusion at the Grand Strand intakes at a target flow of 900 cfs; and (2) the data collected last year indicates that flows of less than 900 cfs could prevent salt water intrusion. SCDHEC informed APGI in its written comments on this Drought Contingency Plan that although it has no data available concerning the 900 cfs target flows implemented in 2002, salt water intrusion did occur at the Grand Strand intake, forcing Georgetown County, South Carolina to suspend its withdrawals from the intake.<sup>4</sup>

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<sup>3</sup> However, the Director's letter states "[o]ne of the principle goals of [the] drought plan for 2003 should be to ensure that the elevation of High Rock Lake is maintained within five feet of full pool." Of course, the present operating guides for the Yadkin Project, established in 1968, describe this as a goal to be achieved, assuming the availability of water. For example, in 2002, Yadkin was able to come within 5.5 feet of full pool on High Rock Reservoir on May 15, 2002, but thereafter, because of the drastic reduction in inflows coupled with the minimum releases required by the operating guides, reservoir levels began to drop. APGI does not understand the Director's letter to change the existing operating guides.

<sup>4</sup> It should also be noted that, although not proposed as a specific measure to be implemented as part of this Drought Contingency Plan for 2003, SCDNR opposes the 900 cfs target flows and views them to an unsatisfactory minimum release for the long term.