NC Drought Management Council
Duke Energy Update
April 26, 2012

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Duke Energy Carolinas
(Prepared 4/24/2012)
Some of the factors evaluated by Duke:

- Precipitation
- Catawba-Wateree Low Inflow Protocol
- Hydroelectric station lake level trends
- Forecast
- Operations Summary and Ancillary Impacts
2012 Year to Date actual vs. Duke Energy long term average 9.94 in. or 68.6%
Duke System Average Precipitation Year to Date Compared to Charlotte, NC for the Period January 1 - April 22, 2012

[Bar chart showing comparison between Duke System and Charlotte for year-to-date precipitation and long-term average.]
Currently the C-W Basin is in a Stage 0 drought but I would not be surprised on gradually declining storage to see the stage go to level 1 in June under current conditions.
Lake Elevation James, Norman, Wylie and Wateree

Lake James: -1.3 ft below target (construction)
Lake Norman: 0.15 ft below target
Lake Wylie: at target
Lake Wateree: at target
May 2012 Outlook

A Duke commercial forecast suggests a below normal probability of precipitation in the C-W, Broad and K-T Basins.

NOAA forecast suggests an “EC” or equal chance for above, below or a normal probability of precipitation for the period for the C-W, Broad and K-T River Basins. Which isn’t much guidance.

An internal Duke Energy Meteorological Staff statistical forecast suggests that precipitation amounts for Charlotte will be 60% of normal for May.

Why the difference I am not sure. It maybe something like NOAA’s forecast is based on their perceived probability of above, normal or below. EC doesn’t necessarily mean that they are predicting a normal summer, but rather there is equal chance of all 3 occurring. I’m guessing that Geoclima feels that an above normal summer is unlikely. So, if you average equal chances of near-normal and below normal, you get “slightly below normal”. Just a guess!! There really aren’t any strong climatic signals that would suggest above normal rainfall. I know also the forecast is based on analog years and I believe that Geoclima may select different years as they may not think we will go into El Nino conditions as quickly as the CPC does.
Catawba-Wateree River Basin

**Discharge, cubic feet per second**

Most recent instantaneous value: 190  04-23-2012  16:45 EDT

Note that prior to this latest rainfall event the streamflow has been about the 5th percentile.

<table>
<thead>
<tr>
<th>Min (2001)</th>
<th>25th percentile</th>
<th>Most Recent Instantaneous Value Apr 23</th>
<th>Median</th>
<th>Mean</th>
<th>75th percentile</th>
<th>Max (1997)</th>
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<tbody>
<tr>
<td>106</td>
<td>157</td>
<td>190</td>
<td>222</td>
<td>291</td>
<td>372</td>
<td>875</td>
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</tbody>
</table>
Broad River Basin: receding to below 25th percentile

Discharge, cubic feet per second
Most recent instantaneous value: 99  04-23-2012  16:30 EDT

USGS 02149000 COVE CREEK NEAR LAKE LURE, NC

Create presentation-quality / stand-alone graph. Subscribe to WaterAlert or report issues.

Daily discharge statistics, in cfs, for Apr 23 based on 61 years of record:

<table>
<thead>
<tr>
<th>Min (2002)</th>
<th>25th percentile</th>
<th>Most Recent Instantaneous Value Apr 23</th>
<th>Median</th>
<th>Mean</th>
<th>75th percentile</th>
<th>Max (1983)</th>
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<td>47</td>
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<td>99</td>
<td>125</td>
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Nantahala River Basin: below 25th percentile

Discharge, cubic feet per second

Most recent instantaneous value: 208  04-24-2012  15:30 EDT

Daily discharge statistics, in cfs, for Apr 24 based on 71 years of record

<table>
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<th>Min (1986)</th>
<th>25th percentile</th>
<th>Most Recent Instantaneous Value Apr 24</th>
<th>Median</th>
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<th>75th percentile</th>
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Operations Summary:

1. Drought conditions in the Catawba-Wateree River Basin and to the west are likely to continue into Spring-Summer 2012 and perhaps into the fall. Hydrologic drought in place.

2. Low Inflow Protocol in the Catawba River will continue being management tool for seasonal lake levels. Duke Energy is expecting to manage to summer lake levels.

3. Nantahala Area lakes; Duke expects to manage to summer lake levels and be positioned to support recreation interests in the Nantahala and Tuckasegee Rivers. Low Inflow Protocol if necessary.

4. The Whitewater, Thompson, Horsepasture and Toxaway Rivers located in southwestern NC feeding Duke Energy’s Lake Jocassee (in the upper Savannah River Basin in SC) are running well below median levels.

5. High water event management as necessary.