SANFORD LAW OFFICE, PLLC
Jo Anne Sanford, Attorney at Law

April 22, 2022

Via Electronic Filing

Ms. A. Shonta Dunston, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4325

Re: Aqua North Carolina, Inc.
Docket No. M-100, Sub 163
Verified Response to Investigation Regarding the Ability of North Carolina's Electricity, Natural Gas, and Water/Wastewater Systems to Operate Reliably During Extreme Cold Weather

Dear Ms. Dunston:

On March 15, 2022, Aqua North Carolina, Inc. ("Aqua") appeared before the North Carolina Utilities Commission ("Commission" or "NCUC") in this docket in a Technical Conference ("Conference") wherein the Commission, the Public Staff, Aqua, and Carolina Water Service, Inc. of North Carolina ("CWSNC") discussed matters related to the reliability of water and wastewater operations provided by the two utilities during extremely cold weather.

During and after the Conference, Aqua and CWSNC were requested to answer additional questions and to file responses to same in the docket. Attached hereto are Aqua's responses to questions and requests posed by the Commission and the Public Staff. These responses are labeled as follows:

P.O. Box 28085, Raleigh, NC 27611-8085 sanford@sanfordlawoffice.com
Tel: 919.210.4900

Attachment A: Response to Commission Staff Questions

Attachment B: Aqua's Supplemental Response to Public Staff Questions

Attachment C: N.C. Inclement Weather Emergency Response Plan

Attachment D: Aqua NC Extreme Cold Weather Measures and Reliability Graph – Seasonal Usage Avg Gallons per Customer

Attachment E: Aqua's Permanent Generator Locations (Confidential)

This Response has been verified by Joseph R. Pearce, Jr., Aqua's Director of Operations, and I hereby certify that this filing has been provided to each of the parties of record to Docket No. M-100, Sub 163 by means of electronic service.

As always, thank you and your staff for your assistance; please feel free to contact me if there are any questions or suggestions.

Sincerely,

Electronically Submitted
/s/Jo Anne Sanford
Sanford Law Office, PLLC
State Bar No. 6831

Attorney for Aqua North Carolina, Inc.

VERIFICATION

Joseph R. Pearce, Jr. being duly sworn, deposes and says: that he is the Director of Operations for Aqua North Carolina, Inc.; that he is familiar with the facts set out in the **Verified Supplemental Response to Investigation Regarding the Ability of North Carolina's Electricity, Natural Gas, and Water/Wastewater Systems to Operate Reliably During Extreme Cold Weather** filed by Aqua in Docket No. M-100, Sub 163; that he has read the foregoing Verified Response and knows the contents thereof; and that the same is true of his knowledge except as to those matters stated therein on information and belief, and as to those he believes them to be true.

Sworn to and subscribed before me this
the 22nd day of April, 2022.

Notary Public

My Commission Expires: May 13, 2026

ROBYN E. LAMBETH
NOTARY PUBLIC
WAKE COUNTY, NC

In the Matter of Investigation Regarding the Ability of North Carolina Electricity, Natural Gas, Water and Wastewater Systems to Operate Reliably During Extreme Cold Weather

Docket Nos. M-100, Sub 163 and E-100, Sub 173

Water Technical Conference
March 15, 2022

Commission Questions for Aqua North Carolina, Inc. (Aqua)

Participants for Aqua:
Shannon Becker, President
Joe Pearce, Director of Operations

Question 1 response:

1. Aqua states in its response that it sends text and email messages and utilizes phone calls to inform customers regarding inclement weather. Does Aqua also utilize its website for announcements on anticipated extreme cold weather events, drought conditions, or other major disaster events such as hurricanes?

   Answer:
   Yes.

2. Please briefly describe how the Incident Command System works.

   Answer:
   This was described in detail during the technical conference.

Question 2 response:

1. Aqua states that extreme cold weather can cause pipe breaks and lead to water leaks for customers. Does Aqua see these occurrences often?

   Answer:
   Very rarely. A 30-year Aqua field employee recalls only four significant cold weather events which have occurred in 30 years in the north Raleigh area.

   Does Aqua keep a record of these occurrences?

   Answer:
   No.

Question 3 response:

1. Do frozen meters cause loss of water?

   Answer:
   When a frozen meter thaws it may leak.

Question 4 response:

1. What types of emergency generators does Aqua have for the wastewater treatment plants and wastewater pump stations? Permanent, standby or others? Please provide the Public Staff and the Commission Staff a list of the locations and the associated type of generators.

   Answer:
   Attachment E is a list of the fixed generator locations for Aqua. Please note this information that is being provided on generators is protected and confidential under the Bioterrorism and Security Act. In addition to the fixed generators, there are 12 portable generators in Aqua's eastern area, ten portable generators in Aqua's central area, and 19 portable generators in Aqua's western area.

2. Briefly describe the Company's procedures for ensuring that its backup generators are in good working order.

   Answer:
   Fixed generators are tested as part of Aqua's preventative maintenance program – typically on an annual basis.

   Is there any testing performed periodically to ensure they will work in extremely cold weather conditions?

   Answer:
   In addition to the preventative maintenance program testing noted above, generators within the anticipated affected region are tested and refueled in advance of a known extreme cold weather event.

Question 5 response:

1. Aqua states that approximately 55 percent of well houses contain remote monitoring that alert staff when there is a power outage or low-pressure event. For the other 45 percent of well houses, how is Aqua alerted to power outages and low-pressure events?

Answer:
By customers who contact Aqua's call center or upon inspection and observation by an Aqua operator during a scheduled weekly visit.

Are these well houses included in Aqua's SCADA system?

Answer:
No, approximately 45 percent of well houses are not included in Aqua's SCADA system.

2. Does Aqua file its Emergency Response Plans with NCDEQ for all water systems? Is this information public information that the Public Staff and the Commission Staff can access from NCDEQ's website? If not, could this information be provided to the Public Staff/Commission Staff?

   Answer:
   Emergency Response Plans (ERP) for the five master systems have been filed with EPA per the American Water Infrastructure Act (AWIA). The remaining systems have an Integrated ERP – Operation and Maintenance Plan and provided to NCDEQ upon request. This information cannot be located on NCDEQ's website as this information has been deemed protected and confidential under the Bioterrorism and Security Act. The information can be provided to the Public Staff/Commission Staff but must be marked and treated as confidential information.

3. Are Aqua's Emergency Response Plans for its wastewater systems filed with NCDEQ? Is this information public information that the Public Staff and the Commission Staff can access from NCDEQ's website? If not, could this information be provided to the Public Staff/Commission Staff?

   Answer:
   NCDEQ does not require submission of ERPs for wastewater systems; however, Aqua integrates its wastewater response into its Integrated ERP – Operations and Maintenance Plan. Reference Q5.2. above regarding confidentiality.

Question 6 & 7 responses:

1. Please briefly describe how NCWaterWARN works. Has Aqua utilized NCWaterWARN for a cold weather event as it has done in the past for hurricanes?

   Answer:
   NCWaterWARN is a group of volunteer public and private water and wastewater utilities throughout North Carolina who are committed to helping each other conduct response and recovery operations that result from

varying emergency incidents. A more thorough summary of the NCWaterWARN network may be found at www.ncwaterwarn.org.

Aqua has not utilized NCWaterWARN for a cold weather event.

How has NCWaterWARN provided benefits to Aqua during hurricanes (and cold weather events, if applicable)?

Answer:
The NCWaterWARN member network facilitated bypass pumping during a hurricane flooding event and assistance with obtaining gasoline in outage areas.

2. Please briefly describe how the NC Department of Public Safety's Emergency Operations Center (EOC) works. What type of assistance does the EOC provide to a utility in an emergency?

Answer:
The EOC is a central command point for state emergency operations for both public and private entities involved in emergency response, including utilities. The EOC is activated depending on the severity level of a specific event (Levels 1-5) and is the location where incident conditions are monitored and emergency responses coordinated under the command of the State Emergency Response Team (SERT) leader. The EOC can relay requests for assistance to other federal, state, and local support agencies. A more thorough summary of the NC Department of Public Safety's Emergency management program and the types of assistance available may be found at www.ncdps.gov.

3. Do your individual water systems have physical emergency interconnections with other water providers?

Answer:
A few do.

If so, what situations might trigger activation of an emergency interconnection?

Answer:
Lack of water or water contamination.

Could these interconnections be utilized in a service outage resulting from a cold weather event?

Answer:
Yes, pending specific approval of the alternative utility.

Docket No. M-100, Sub 163
Aqua North Carolina, Inc. Supplemental Response to Public Staff Questions

1.

a. How many customers represented as a number and percentage of all Aqua NC customers have registered each of the following with the Company: email address, telephone number, and mobile phone number for text notifications?

Answer:
Email – 62,716 – 68%
Phone – 90,504 – 97%
Text – 47,574 – 51%

2.

a. Please provide a copy of the Inclement Weather Emergency Response Plan.

Answer:
See Attachment C.

3.

a. Has Aqua NC quantified the "typically lower" water use in the winter?

Answer:
See Graph Appended as Attachment D.

b. Has Aqua NC performed any analysis of available hourly and/or daily meter read data from winter weather events?

Answer:
No.

4.

a. Regarding heating systems in well houses, how many as a number and percentage of all Aqua NC well houses are equipped with a heating system?
   i. How many of those have a thermostat control?

Answer:
All Aqua North Carolina well houses have a portable or installed heater to help provide temperature control. Most well houses have thermostat controls; however, Aqua does not have an exact count.

ii. How many of those can be remotely monitored?

Answer:
Thermostat controls are not monitored remotely.

5.

a. Does Aqua NC record information regarding when and which systems experience power outages and how long those outages are?

Answer:
No, Aqua does not record this information.

b. Please provide the applicable state rules and regulations for water and wastewater system infrastructure, such as 15A NCAC 02T .0305(h) and .0505(l), that require either standby power supply onsite or a portable power source.

Wastewater Pump Station Regulation. 15A NCAC 02T .0305(h)(1):

(B) A standby power source or pump shall be required at all pump stations except for simplex pump stations. Controls shall be provided to automatically activate the standby source and signal an alarm condition.
(C) As an alternative to Part (B) of this Subparagraph for pump stations with an average daily design flow less than 15,000 gallons per day as calculated using Rule .0114 of this Subchapter, a portable power source or pumping capability may be used. The portable source shall be owned or contracted by the permittee and shall be compatible with the station. If the portable power source or pump is dedicated to multiple pump stations, an evaluation of all the pump stations' storage capacities and the rotation schedule of the portable power source or pump in a multiple station power outage, including travel timeframes, shall be provided.

Wastewater Irrigation/Infiltration Systems.
15A NCAC 02T .0505(l) and equivalent to 15A NCAC 02T .0705(k)

(l) Power reliability shall be provided, consisting of:
(1) automatically activated standby power supply, located onsite, and capable of powering all essential treatment units under design conditions; or
(2) approval by the Director that the facility:
(A) serves a private water distribution system that has automatic shut-off at power failure and no elevated water storage tanks;

(B) has sufficient storage capacity that no potential for overflow exists; and
(C) can tolerate septic wastewater during prolonged detention.

Water Systems: 15A NCAC 18C .0405

(d) High Yield Aquifers:
(1) Equipment. In lieu of providing elevated storage for public water systems over 300 connections in areas where aquifers are known to produce high yields, such as 400-500 gpm from an eight-inch well, a system of extra well pumping capacity, auxiliary power generating equipment, pressure tanks, controls, alarms, and monitoring systems may be provided. The design and installation of such system shall assure that reliable, continuous service is provided.
(2) Auxiliary Power. A system relying on high-yield aquifers under Paragraph (d) of this Rule shall have an adequate number of wells equipped with sufficient pumping capacity so that the required flowrate will be maintained if the single largest capacity well and pump are out of operation. Auxiliary power generating equipment shall be provided for each well sufficient to operate the pump, lights, controls, chemical feeders, alarms, and other electrical equipment.

c. Does Aqua NC have an operations and maintenance plan and/or contract services for its stationary and portable generators?

Answer:
Yes, Aqua has contract services for preventative maintenance.

d. How many as a number and percentage of all Aqua NC water wells are equipped with permanent generators?

Answer:
Thirteen---or one percent--of Aqua wells have generators.

e. How many as a number and percentage of all Aqua NC wastewater pump stations are equipped with permanent generators?

Answer:
Seventy-nine--or 44%---of wastewater pump stations have generators.

f. Please provide additional details regarding the "fleet of strategically staged smaller trailer mounted generators. . ." such as the number of generators, infrastructure that can be powered, and run time before the need to refuel.

Answer:
Aqua has 41 portable generators. These generators can operate all but the largest well system and wastewater pump station. Most portable generators in this size range have fuel tanks to operate 24 hours at full load. It must be noted that these generators are typically not operating at full load continuously.

6. How does operations staff track and manage fuel needs and does that require more frequent operator visits?

Answer:
During weather events, each site which has a generator is visited at least daily and fuel is topped off.

7. No additional questions at this time.

8.

a. Has Aqua NC experienced notable operational problems in previous years, such as 2014? Were any lessons learned and changes implemented?

Answer:
In 2018, winter storm Grayson froze a 5,400-gallon hydro-pneumatic water tank at Moratuck Manor. As an operational change the feed to the hydro-pneumatic tank was changed from the bottom to the top of the hydro-pneumatic tank prior to periods of expected low temperatures. This increases the mixing and reduces the risk of freezing.

b. Are certain Aqua NC service areas or systems more susceptible to operational problems due to cold weather?

Answer:
Yes, generally the sites at higher elevation and the northern portion of the state are more susceptible to colder weather.

9. What is the approximate cost of installing Hubbell quick connects and manual transfer switch for a water site?

Answer:
The expected current cost is $2500 to $4500 per site.

ATTACHMENT C
AQUA'S SUPPLEMENTAL RESPONSE TO
PUBLIC STAFF QUESTIONS
M-100 SUB 163

NC IWERP

North Carolina Inclement Weather Emergency Response Plan

Instructions: Complete the task in the timeframe prior to the event.
Put a Check Mark in the items completed.
Supervisors: Check off tasks as they are completed

Weather Event Name
Area
Office
Area Manager
Supervisor
Event Date

TASK	7 days	5 days	72 hours	48 hours	24 hours	Notes
A. Communications/Updates						
1. Inform management of weather forecasts and preparations status						
B. Inventory and Procure Critical Equipment and Supplies						
1. Generators						
a. Confirm readiness of spare generators.						
b. Confirm readiness of on-site generators						
c. Contact and reserve portable generators from vendors						
d. Fill portable generator fuel tanks						
e. Stage generators in high risk area's						
2. Trailers						
a. Complete pre-trip inspections						
C. Equipment preparedness						
a. Confirm readiness of vehicles including spares						
b. Confirm lights and signals function properly						
c. Confirm fire extinguisher present						
d. Confirm windshield wipers fucntion properly						
D. Portable Lighting						
a. Confirm operational readiness of portable emergency lights						
E. Fuel for Equipment and Vehicles:						
a. Confirm all gas cans are full of gas.						
b. Confirm all vehicle fuel tanks are full.						
c. Confirm all generator fuel tanks are full.						
d. Confirm all pump fuel tanks are full.						
F. Safety Equipment						
a. Confirm flashlights for all personnel with spare batteries.						
b. Safety glasses/goggles for all staff plus sufficient spares.						
c. Availablity of appropriate outerwear for weather situation						
d. Availablitiy of all required PPE						
e Latex, cloth, leather and rubber gloves.						
f .First aid kits (fully equipped) for all vehicles.						
h. Safety/security tape in each vehicle.						
i. Calcium Chloride available at central locations - confirm prior to potential ice or snow storm.						
j. Lime: Confirm availability at all warehousing locations						
k. Food and Drinks: Review amount needed depending on anticipated number of personnel (employees should be notified to bring additional food/beverage)						
l. Bottle Water: Various sizes						
m. Case of spare batteries.						
G. Maintenance Tools:						
a. Chain Saws: Confirm readiness of all chain saws and supply of gas, mixing oil, and chain oil and all PPE						
c. Availability of sawz-alls, drills and extra batteries						
d. Trash pumps - check availability and operability; fuel availability						
H. Manpower Status						
a. Conduct mandatory staff meeting to discuss expected event, issues, concerns, equipment, supplies and staff assignments. Designate team leaders.						
b. Confirm Staffing Needs: Confirm skilled personnel will be available throughout the event						
c. Confirm availability of local standby staff.						
i. Operators						
ii. Maintenance/Utility Workers						
iii. Emergency response vendors						
d. Update as needed work schedule based on the predicted work load.						
e. Confirm that a copy of the emergency contact names and information is provided to all staff.						
I. Critical Tasks						
a. Operations						
i. Digesters– confirm and maintain level as low as possible.						
necessary.						
b. Maintenance						
i. Verify all alarms/SCADA/Omnisite are operable; test alarms						
ii. Pump station pumps' operability.						
iii. Ultraviolet disinfection systems on-line and fully functional.						
iv. Trash pump(s) available and functional.						
J. Housekeeping						
a. If strong winds are expected, pick up loose debris around plants that could blow into the tanks and damage equipment, or could present a safety hazard if blown around plant.						
b. Secure any equipment or items in open areas that could be moved by strong winds.						
c. Construction activities coordinated. Share activity plan with contractors and discuss all preparation requirements with them that are their responsibility.						

Response Team

AQUA NC EXTREME COLD WEATHER MEASURES AND RELIABILITY