KENTUCKY

WATER / WASTEWATER AGENCY RESPONSE NETWORK

(KYWARN)

WORKSHOP AND TABLETOP EXERCISE

AFTER ACTION REPORT

Corbin, Kentucky

October 26, 2011

Sponsored by: U.S. Environmental Protection Agency (EPA) and Kentucky Water/Wastewater Agency Response Network (KYWARN)
Facilitated by: Horsley Witten Group, Inc.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

On October 26, 2011 approximately 27 representatives from Kentucky drinking water and wastewater utilities, U.S. EPA Region 4, the Kentucky Department for Environmental Protection (KYDEP), and representatives from cities and towns across Kentucky participated in a day-long training event focused on emergency preparedness and response to an incident affecting the water sector. The KYWARN event consisted of presentations in the morning and then participants engaged in a tabletop exercise in the afternoon. A facilitated "hotwash" was held immediately following the tabletop exercise (TTX) discussion to collect comments from the players. The exercise was designed to provide participants with an opportunity to discuss the response capabilities of KYWARN and identify strengths, weaknesses, and future training needs of the program.

Workshop and Exercise Objectives

The following objectives were established for this workshop and exercise by the Exercise Design Team (EDT):

1. Promote the benefits of KYWARN membership to non-members;
2. Discuss how KYWARN would operate during an incident;
3. Discuss the role of the KYWARN website and mutual aid agreement; and
4. Encourage interagency cooperation between KYWARN and local, county, and state emergency management agencies.

The objectives were successfully met, and descriptions of how each objective was met are provided throughout this After Action Report (AAR) and summarized in the Workshop Objective Summary on page 12 of this document.

Presentation Topics

The following presentations were given during the morning session of the workshop:

- KYWARN Overview by Brad Murphy, Northern Kentucky Water District and KYWARN Steering Committee;
- Selection and Application of Emergency Response Equipment by Tim Blanton and Joe Burns, Kentucky Rural Water Association (KRWA); and
- Motor and Pump Controls and Field Setup of Generators by Tim Blanton and Joe Burns, KRWA.

Tabletop Exercise

The multiagency, multijurisdictional TTX conducted in the afternoon was designed to bring together representatives from the water and public safety sectors to discuss roles and

responsibilities during a natural disaster in Kentucky. Players engaged in a facilitated discussion surrounding preparation for and response to a regional windstorm. The goal was to enhance the capability of KYWARN to respond to any emergency or disaster located within the State of Kentucky that requires specialized water and wastewater resources.

Hotwash / Evaluation

A facilitated "hotwash" was held immediately following the tabletop discussion to collect comments from the players. Participants identified lessons learned and key elements raised during the exercise.

This report summarizes the results of the workshop and makes recommendations for future improvements to strengthen KYWARN. A summary of participant feedback, including comments and evaluation scores, is provided in Appendix A of this AAR.

INTRODUCTION

Exercise Name:	Windstorm "Howling Fury"
Location:	The Corbin Center Corbin, KY
Type of Exercise:	Tabletop Exercise (TTX)
Focus:	Intrastate Mutual Aid
Exercise Date:	October 26, 2011
Exercise Sponsors:	U.S. Environmental Protection Agency (EPA) and Kentucky Water/Wastewater Agency Response Network (KYWARN)

EPA sponsored a one-day KYWARN water sector emergency response workshop hosted at the Corbin Center on October 26, 2011 in Corbin, KY. The workshop focused on water sector emergency preparedness and response and consisted of presentations and a facilitated TTX. The morning began with presentations on topics related to water sector preparedness and response. Representatives from public and private drinking water and wastewater utilities along with response partners from other disciplines, U.S. EPA Region 4, the Kentucky Department for Environmental Protection (KYDEP), and representatives from cities and towns across Kentucky then engaged in a facilitated discussion-based exercise utilizing a windstorm scenario. The exercise scenario was sequenced to promote a discussion of water sector preparedness for and response to a regional windstorm "Howling Fury" in Kentucky. The exercise concluded with a "hotwash" during which players were asked to voice their number one lesson learned from the exercise. A summary of "hotwash" comments is provided on page 11. All participants were asked to fill out an evaluation at the conclusion of training. A summary of written evaluation comments is attached as Appendix A. A total of 27 people participated in the TTX, and refer to Appendix B for a complete list of participants at the workshop.

WORKSHOP OVERVIEW

Participants arrived at 9:00 a.m. on October 26, 2011 for the workshop. The morning consisted of presentations and the afternoon consisted of a TTX. Brad Murphy of the Northern Kentucky Water District and the KYWARN Chair provided opening remarks and welcomed everyone to the workshop. All of the participants introduced themselves to the other participants and shared their experiences with water sector related incidents.

Presentation Summary

Brad Murphy of the Northern Kentucky Water District and the KYWARN Chair gave a presentation on KYWARN and the purpose of WARNs as a formalized system of "utilities helping utilities," which is in place to address mutual aid for the water sector during emergency situations. Mr. Murphy explained that the KYWARN website (www.kywarn.org) is in transition as their two-year grant has expired and KYWARN is now partnering with the Kentucky Infrastructure Authority (KIA) to host their website. The KYWARN website is where members can request resources and respond to resource requests from other members. Mr. Murphy also explained that responding to a request for assistance is 100% voluntary and there is no obligation to provide assistance. Each utility should assess their ability to provide assistance before committing resources, and the responder also has the right to withdraw resources at any time as well. Mr. Murphy also explained that the eligibility for FEMA reimbursement is dependent on having a signed mutual aid agreement (e.g., KYWARN) in place before a disaster. In addition, the KRWA keeps copies of the signed KYWARN program agreements as well as copies of the member contact lists. KYWARN has been used to facilitate assistance during several recent major incidents:

- Provided 14-inch ductile iron pipe to a utility after it washed out during a flood. The KRWA databases were queried and they were able to find all utilities who had this type of pipe. The requesting utility received the needed pipe within a few hours and service was restored in two days.
- Provided generators to Pikeville, Kentucky after a flash flooding incident.

Tim Blanton and Joe Burns of KRWA gave two presentations as part of the generator training. A description of each presentation and the topics covered is provided below:

- Selection and Application of Emergency Response Equipment
    - Performing a Lift Station "Inventory" – how many lift stations does your utility have, what are their power needs, and what is the priority for having a generator at each location;
    - Effective Use of Three Phase Generators – when are these most appropriate for your location;
    - Temporary Power Single Phase to Three Phase Conversion for Operating One Pumping Unit – how to set up a generator; and

    - Effective Rotation of Portable Equipment – using a limited number of generators to power multiple sites.
- Motor and Pump Controls and Field Setup of Generators
    - Identifying Electrical Power Requirements for Water and Wastewater Facilities – what kind of generator does each site need;
    - Motor Control Panels and Principles of Motor Control;
    - Setup of Float Controls for a Duplex Lift Station;
    - Three Phase Generators and Guidelines for Temporary Power Installations – safety and sizing of generators;
    - Guidelines for Variable Frequency Drives (VFDs) and Single Phase Generators for Temporary Single Motor Operation – benefits of using smaller generators; and
    - Programming and VFD Fault Analysis – troubleshooting your generator.

Presentation topics and speakers are listed in Appendix C.

Tabletop Exercise Summary

Participants arrived back from their lunch break at 1:00 p.m. for the TTX. The attendees sat at tables in a modified U-shaped seating arrangement, allowing participants to see each other and easily engage in group discussions. Carl Simons of the Horsley Witten Group, Inc. (HW) served as the exercise facilitator. The exercise was based on a regional windstorm scenario "Howling Fury" which affected multiple towns, cities, and rural water districts across fictional Wildcat and Falcon Counties. These counties, although fictional, were representative of counties in Kentucky. Participants discussed the scenario and the water sector response to the damages caused by the windstorm.

The "Howling Fury" scenario is described in Appendix D.

Lessons Learned

The following is a summary of the verbal comments provided during the TTX. Comments are not listed in priority order. When the KYWARN EDT meets to review the AAR, members are encouraged to use the Action Planning Guide in Appendix E to set priorities for the suggestions as appropriate. Throughout the exercise participants were given injects, or additional information on the scenario, to move the discussion forward. A number of topics occurred repeatedly throughout the exercise, and they include:

Preparedness

- It is important for utilities to map their systems using Geographic Information Systems (GIS), as in the aftermath of a major disaster, the natural landmarks you rely on to orient yourself (e.g., signs, buildings) may be gone. GIS will allow you to locate your infrastructure.

- Utilities should invite their local first responders to tour their facilities so they know where they are and how they might need to assist in the event of an incident.
- Utilities should encourage their staff to create family plans so that employees can be confident that their families are safe while they are out responding to a disaster. This should include having extra food and a generator at their home if possible and an emergency contact list.
    - Most of the participants agreed that they would give their employees time to get in contact with their families in the initial aftermath of a disaster to check and make sure they were safe before they had to start work.
- During a tornado warning, hospitals move their patients away from windows for their safety in case the glass is blown out.
- Utilities should have up-to-date call list of employees who would be available after a disaster.
- The KIA website (http://kia.ky.gov/) includes a list of all water sector systems in the state, which includes their location and population served.
- Utility preparations for a major storm include:
    - Adjusting staff schedules;
    - Notifying personnel;
    - Securing facilities; and
    - Monitoring Supervisory Control and Data Acquisition (SCADA) systems and facility cameras.
- Utilities that have automatic control systems should also train their staff to operate the plants in manual mode should the system be down after an incident.
    - SCADA systems at many plants are used strictly for monitoring purposes and are not used to control any processes.
- Several participating utilities explained that they routinely cross train staff to perform essential functions in case primary staff is unavailable.
- Utilities should have a Continuity of Operations Plan (COOP) which designates backup operational facilities.
- Some utilities provide maps of their infrastructure to their local emergency management official.
- Many utilities have stipulations in their contracts with vendors that if they are unable to provide their services within a certain time period of being requested, then there are penalties (e.g., financial, free supplies).
    - This is one way to incentivize the vendors to make every effort to be available following a disaster.
- Utilities usually make sure that they receive deliveries for fuel and/or chemicals when they reach predetermined levels – this gives them a cushion and ensures that the utility will not be in danger of running out if the delivery is a few days late.

Coordination

- KRWA has a representative at the state Emergency Operations Center (EOC) that could also represent KYWARN. This would be a direct link between KYWARN and the state emergency management agency which improves the facilitation of resources and reduces duplication of effort.
- Some small rural systems are not aware of who their local emergency managers are.
    - Organizations like the Rural Community Assistance Partnership (RCAP) are working to close this gap and encourage small systems to build a relationship with their local emergency managers.
- Utilities and jurisdictions affected by an incident should set up a staging area where responding resources can check in before they start work.
- Utilities should take the following steps if there is a hazardous material spill at their location:
    - Consult the Material Safety Data Sheet (MSDS) or placards for information about the chemical.
    - Contact local first responders for assistance. Local emergency management should be aware of the hazardous materials at utilities due to the Superfund Amendments and Reauthorization Act (SARA) Tier II reports.
    - If necessary, contact the Kentucky Division of Water (KDOW) at 1-800-928-2380 and they can send out environmental response teams.
- Utilities must notify the KDOW and their local health department if there is a water outage or low pressure on any line segment in the distribution system lasting more than eight hours.
- The initial incident objective for utilities in the immediate aftermath of a disaster would be to conduct damage assessments and gather information on their systems.
- KYWARN expects that they will receive calls from utilities which would like to offer their assistance even if they haven't been requested. They will take their information and contact them at a later time if their assistance is needed.
    - During a flooding incident in Morehead there were so many offers of assistance to the affected utility that KYWARN stepped in to handle all requests for assistance because the responders were tying up the phone lines at the utility.
- Utilities should share information about the critical infrastructure in their systems with their local first responders.
    - One utility said that they receive notifications about almost all main breaks and leaks from their local police because they are out at all hours and they notice issues like that.
- Most utilities don't have the licenses or the ability to move chemicals, but emergency management may be able to facilitate this in the event of an emergency.
- For some utilities, they may be asked to share their equipment when it is needed by another department in their jurisdiction, but it is usually never demanded from them.

- When they have needed to provide alternate water, some utilities have contacted private sector companies (e.g., Walmart, Kroger, Anheuser Busch) to distribute bottled water where it was needed.
- KYWARN can provide a list of alternate laboratories if your local laboratory is not able to accept your samples for any reason.
- KYDEP and KDOW have resources that include Public Information Officers (PIOs), engineers, and teams with sampling and analyzing capabilities.
- KDOW will contact affected utilities after a disaster to get status updates so they can help coordinate resource requests with KYWARN and emergency management.
- The governor can request the National Guard Civil Support Team (CST) which has analysis capabilities.
- Utilities should encourage their critical customers (e.g., hospitals, nursing homes, dialysis centers) to have on site water storage and generators.

Resource Sharing

- It does not take a major crisis/emergency to activate KYWARN; utilities can activate the agreement for any incident that requires resources beyond what they have on hand, such as equipment failures.
- KYWARN fills the gap between when a disaster happens and the time it takes state and federal resources to arrive.
- Utilities should also be aware that an EOC may not always be activated, especially if the incident is localized and only affecting a particular utility.
- The definition of an emergency is likely different for each utility. For some utilities, it might be more infrastructure damage than they can handle, but for a small utility it might be as simple as a lack of personnel or equipment.
    - Utilities should decide what their own definition of an emergency is prior to an actual incident, so they recognize when they need to ask for assistance and do not delay.
- Small rural water systems can really benefit from being members of KYWARN for several reasons:
    - They can request assistance if it is needed during an incident.
    - They normally have very skilled staff that can provide knowledge and assistance to another utility in need. Personnel at a small utility usually are a "jack of all trades" who are cross trained to perform multiple roles at their utility.
    - Being a member of KYWARN may actually reduce their insurance costs.
- When a utility receives a request for assistance through KYWARN, they should ask themselves the following questions:
    - What does this utility need?
    - Is my own resource database up-to-date so I can easily check to see if we have what they need?
    - Can we spare what they need?
    - How long will they require my assistance?

    - Where will my personnel meet the utility, where will they stay, and what will they eat while they are away?
- If you are the only member utility who receives a request for assistance, make sure to forward that request out to the rest of the KYWARN member utilities.
- A responding utility should notify their own local EOC and the EOC where they are going to provide assistance of their intentions to provide assistance for several reasons:
    - To get the permission (if needed) to provide the assistance;
    - So that the EOC can track the assistance;
    - So that the EOC can ensure that the responding utility will have access to the affected area; and
    - To avoid duplication of efforts.
- Being a signatory to a mutual aid agreement like KYWARN allows the utility that has requested assistance to be reimbursed for costs paid to the responding utility if a federal disaster is declared.
- KYWARN will try to facilitate assistance to a non-member and will contact a member utility in their area on their behalf. KRWA can also provide assistance.
- KYWARN operates on a first-come, first-served basis and has not had to prioritize assistance during an incident so far.

Communication

- All participants agreed that communication would be difficult if landline and cellular telephone service stopped working.
- Utilities normally receive information updates in advance of a storm from NOAA weather radios, emergency management, and social media (e.g., Facebook, Twitter). Some counties also use their Reverse 911 systems to alert those in the community.
- Alternate communication methods that many jurisdictions have available to them include two-way radios and satellite phones, which many county health departments have.
    - Local emergency management agencies may also have additional alternate communication devices available, so utilities should discuss this with them.
- It is sometimes possible to send a text message on a cell phone even when the cell phone is not sending or receiving calls because a text message requires less bandwidth.
- Many utilities have Amateur Radio Emergency Services/Radio Amateur Civil Emergency Services (ARES/RACES) operators available during emergencies.
    - These ham radio operators act as spotters and track weather systems.
    - They are usually organized into teams with a leader who will take in all the reports from the other team members and then will send out updates.
    - In many states, ARES and RACES teams are separate, but in Kentucky they are the same:
        - ARES teams can activate on their own accord.
        - RACES teams only activate at the request of a civil defense authority.
- Utilities should regularly update their contact lists.
- There are multiple ways to communicate information to the public during an emergency:

    - Door to Door;
    - Reverse 911;
    - News Media;
    - Emergency Management;
    - Emergency Alert System (EAS); and
    - Social Media (e.g., Facebook, Twitter).
- Utility websites can be used to post newsletters and important information about water related issues in their community. It was agreed that most members of the public do not know who provides their water and wastewater services.
    - Public education is very important and an active program will benefit your utility if a disaster affects your jurisdiction.
- During an incident, there should be a designated Public Information Officer (PIO) at your utility who can handle customer calls and staff call centers, so that skilled labor can be out in the field.
    - The PIO can also handle rumor control and deliver public notifications.
    - The utility PIO should work with any other agency PIOs in a Joint Information Center (JIC) to ensure that coordinated messages are communicated to the public.

Mobility

- Water sector utilities can get information from local emergency management regarding road closures after an incident so that they can determine how they are going to assess damage to their system.
- Utility workers may have difficulty negotiating police/public safety road blocks during an incident. Workers may need utility credentials identifying them as essential/emergency personnel from their county or state EOC.
    - Kentucky is piloting an e-credentialing system which will allow utility personnel to get a credential online.
- Water and wastewater utilities may need to coordinate debris removal around critical infrastructure with other agencies, such as public works.
- Other response partners (e.g., police and fire) should be trained to identify and report critical water and wastewater infrastructure damage.

Power Loss / Generator Capability

- Power loss can be common during an emergency. Water and wastewater utilities should discuss power restoration priorities with both their provider and the local Emergency Manager.
- Most utilities represented do not have enough generators on hand to run their operations, but many have investigated options to source them during an incident.
- There are multiple ways for a utility to try to get generators during an emergency including:
    - Local suppliers and vendors;

- Emergency management; and
- KYWARN member utilities.

Other

- Utilities should make sure they track all costs during an incident because you never know from the outset of an incident whether you will be filing for FEMA disaster reimbursement. This includes documenting any overtime.

"Hotwash" Comments

At the conclusion of the discussion, the facilitator asked each player to discuss their number one lesson learned from the TTX, including ways to improve their utilities' and KYWARN's response to incidents. Overall, participants were pleased with the TTX. A summary of comments is presented below, and in some instances duplicate comments were combined:

- This was a great introduction to KYWARN and participants were appreciative of this educational opportunity.
- This workshop reinforced how important communication and coordination is during an incident.
- Utilities are encouraged to send a member of their staff to their Local Emergency Planning Committee (LEPC) meetings.
- RCAP and KRWA are going to share information about KYWARN to the small water sector systems that they serve.
- This was a great opportunity to hear from other utilities and learn about what they are doing.
- This first workshop will give KYWARN some momentum as it looks to increase its presence moving forward.
- A participant noted that it is important to plan for disasters, but equally as important to be able to think quickly and make good decisions during an incident.
- KYWARN is looking forward to sponsoring more training workshops in the future.
- Whether you are a large or small utility, during a disaster you are dealing with similar issues.
- It is so important to get to know your local first responders before a disaster happens.
- Most participants noted that they were now more aware of the capabilities of KYWARN and understand what a valuable a resource it can be.
- Several participants commented that their jurisdictional plans and ERPs needed to be reviewed and possibly revised based on the lessons learned from the exercise.

At the conclusion of the training day participants were asked to fill out an evaluation form. Of the 27 participants, 24 filled out the forms. Participants rated the overall training using a scale of 1-5 (1=Strongly Disagree, 3=Agree, and 5=Strongly Agree). When asked if the workshop was a valuable use of their time, the average score was 4.6.

Written evaluation comments and a detailed compilation of participant evaluations can be found in Appendix A.

Workshop Objective Summary

There were several objectives established for this workshop and exercise. Following each objective is a summary of how that objective was achieved:

1. Promote the benefits of KYWARN membership to non-members.

   There were several non-KYWARN members at the workshop and they were able to learn about the purpose and capabilities of KYWARN. Brad Murphy gave a detailed presentation which extolled the virtues of being a signatory to a mutual aid agreement like KYWARN. In addition, representatives from RCAP and KRWA stated that they would be promoting the benefits of KYWARN membership to their member utilities. Overall, KYWARN was presented as another option available for water sector utilities to receive the specialized resources needed during an incident. The TTX discussion highlighted that KYWARN is useful for both large and small utilities. Several non-members requested more information regarding joining KYWARN and it is expected that several will join in the future.

2. Discuss how KYWARN would operate during an incident.

   The reoccurring theme of the workshop was to educate the participants as to how KYWARN could be utilized during a disaster. They majority of the sponsoring agencies of KYWARN were present and the TTX was designed to allow for detailed discussions as to how KYWARN can activate and facilitate assistance. Utilities can utilize KYWARN to assist with the response and recovery from an incident. Several success stories reiterated the fact that KYWARN can help the response to both large and small water sector incidents.

3. Discuss the role of the KYWARN website and mutual aid agreement.

   During Brad Murphy's presentation the mutual aid agreement was described section by section, and he also described the role of the KYWARN website. Currently, the website is being transitioned to another host and he expected it to be active very soon. The website is where utilities can request assistance and respond to requests for assistance, find lists of member utilities and their contact information, and access a database which lists the resources that each member utility has available.

4. Encourage interagency cooperation between KYWARN and local, county, and state emergency management agencies.

   Through KRWA, KYWARN is part of the state EOC and this improves the facilitation of assistance to water sector utilities. Several of the participating utilities regularly send a member of their staff to their LEPC monthly meetings and they encouraged other utilities to do the same. The importance of communication and coordination with all levels of emergency management was reiterated throughout the workshop. In addition, RCAP and KRWA regularly encourage the utilities they work with to develop and strengthen their relationships with their local emergency managers.

Overall, this workshop and exercise successfully met the objectives that were defined in advance. The event allowed many of the participants to meet as a group for the first time, evaluate their current capabilities, become more comfortable with their roles and responsibilities, and identify opportunities for enhancement. Additional planning, training, and exercises can ensure that personnel maintain and enhance their level of preparedness.

CONCLUSION

The October 26, 2011 KYWARN workshop, which included both presentations and a TTX, succeeded in bringing together a number of KYWARN response partners and achieved the goals set forth for the workshop. Communication between response partners during the TTX will aid in future responses. Overall, participants agreed that the workshop was a valuable use of their time. As a result of the workshop, it is expected that several new KYWARN members will join which will further strengthen this robust network.

APPENDIX A: EVALUATION SUMMARY

Out of the 27 participants, a total of 24 turned in written evaluations, which are summarized in the following tables.

	Strongly Disagree (1 2 3 4 5) Strongly Agree Average*
1. The Tabletop Exercise (TTX) was well structured and organized.	**4.5**
2. The TTX helped to define the roles and responsibilities of the KYWARN in regards to resource management during an incident affecting the water sector.	**4.3**
3. The workshop reinforced the basics of the KYWARN Mutual Aid Agreement and the importance of the KYWARN website.	**4.7**
4. The exercise provided an opportunity to build relationships between KYWARN members and non-members.	**4.3**
5. The exercise provided an opportunity to identify potential gaps in planning at your own agency.	**4.8**
6. The exercise encouraged interagency cooperation between KYWARN and emergency management.	**4.5**
7. Overall, the tabletop exercise was a valuable use of my time.	**4.6**

KYWARN Tabletop Exercise Participant Evaluation Responses (October 2011)

Question 1 **The Tabletop Exercise (TTX) was well structured and organized.**

1-Strongly Disagree	2	3- Agree	4	5- Strongly Agree
0	1	0	8	15

Question 2 **The TTX helped define the roles and responsibilities of the KYWARN in regards to resource management during an incident affecting the water sector.**

1-Strongly Disagree	2	3- Agree	4	5- Strongly Agree
0	0	2	12	10

Question 3 **The workshop reinforced the basics of the KYWARN Mutual Aid Agreement and the importance of the KYWARN website.**

1-Strongly Disagree	2	3- Agree	4	5- Strongly Agree
0	0	1	5	18

Question 4 **The exercise provided an opportunity to build relationships between KYWARN members and non-members.**

1-Strongly Disagree	2	3- Agree	4	5- Strongly Agree
0	0	5	7	12

Question 5 **The exercise allowed an opportunity to identify potential planning gaps at your own agency.**

1-Strongly Disagree	2	3- Agree	4	5- Strongly Agree
0	0	0	4	20

Question 6 **The exercise encouraged interagency cooperation between KYWARN and emergency management.**

1-Strongly Disagree	2	3- Agree	4	5- Strongly Agree
0	0	2	7	15

Question 7 **Overall, the tabletop exercise was a valuable use of my time.**

1-Strongly Disagree	2	3- Agree	4	5- Strongly Agree
0	0	1	7	16

Comments (Comments are not listed in any priority order.)

1. Good information, thought provoking.
2. Thank you.
3. Contact Malinda Mays at malinda.mays@ky.gov for Sanitary Survey Forms.
4. Overall, an excellent program.
5. I strongly agree with Questions 1,2,3,5,6,7.
6. Carl and Will did a wonderful job planning and facilitating the exercise.
7. Well organized and facilitated.
8. The exercise provided an opportunity to identify potential gaps in planning.

APPENDIX B: LIST OF PARTICIPANTS

Count	Name	Title	Agency	Affiliation
1	Tim Blanton		Kentucky Rural Water Association	Association
2	Joe Burns		Kentucky Rural Water Association	Association
3	David L. Dodd	Water/Sewer Superintendent	Corbin City Utilities Commission	Water/Wastewater Utility
4	Rick D. Fletcher	Manager	Mt. Sterling Water and Sewer	Water/Wastewater Utility
5	Michael H. Flynn	General Manager	Winchester Municipal Utilities	Water/Wastewater Utility
6	Kelly S. Fugate	Environmental Inspector	KY EPPC / Division of Water	State Government
7	Brooke Gray	Environmental Technologist III	KY Division of Water	State Government
8	Larry D. Herald	General Manager	Paintsville Utilities	Water/Wastewater Utility
9	Ronald W. Herd	General Manager	Corbin City Utilities Commission	Water/Wastewater Utility
10	David B. Hill	Director Of Water	Owensboro Municipal Utilities	Water/Wastewater Utility
11	Greg S. Hoskins	Environmental Tech.	Corbin City Utilities Commission	Water/Wastewater Utility
12	James Jones	Respiratory Care Coordinator	Baptist Regional Medical Center	Other
13	Joyce Kiogora	Water Management Planner	Cumberland Valley Area Development District	Other
14	Paul D. Lashbrooke	Superintendent	Webster County Water District	Water/Wastewater Utility

15	Malinda Y. Mays	Environmental Technologist III	KY Division of Water	State Government
16	Melissa A. Melton	Technical Assistance Provider	Rural Community Assistance Partnership	Association
17	Glenn J. Mudd	Loss Control Specialist	Louisville Water Company	Water/Wastewater Utility
18	Brad A. Murphy	Safety Officer	Northern Kentucky Water District	Water/Wastewater Utility
19	Anne G. Powell	Environmental Technologist III	KY Division of Water	State Government
20	Mark Rasche		KY Division of Water	State Government
21	Calvin Rodgers		Georgetown Municipal Water & Sewer Service	Water/Wastewater Utility
22	Brian J. Smith	Environmental Engineer	US EPA, Region 4	Federal Government
23	JD Stanfill	Public Works Foreman / Maintenance Supervisor	City Of Williamsburg	Water/Wastewater Utility
24	Ed J. Stanko	Environmental Technician	CSX Transportation/Shaw E & I	Private Industry/Sector
25	Robert T. Stidham	On Scene Coordinator	KY Department For Environmental Protection	State Government
26	Craig B. Welch	Water Dist. Operator/ Safety Manager	Paintsville Utilities	Water/Wastewater Utility
27	Jeremy T. Wood	Maintenance Technician	Georgetown Municipal Water & Sewer Service	Water/Wastewater Utility

APPENDIX C: WORKSHOP SCHEDULE – OCTOBER 26, 2011

8:30 a.m. – Check-In

9:00 a.m. – Welcome and Introduction to Workshop

- Review of Administrative Details and Agenda

9:15 a.m. – Introduction to KYWARN and KYWARN Website

9:45 am. – Generator Training by KRWA

11:00 a.m. – Break

11:15 a.m. – Generator Training by KRWA

12:30 p.m. – Lunch

1:00 p.m. – Tabletop Exercise Welcome and Introductions

1:15 p.m. – Tabletop Exercise Overview, Objectives, and Ground Rules

- Purpose and Objectives
- Roles of Participants
- Expected Outcomes

1:30 p.m. – Scenario Discussion

3:00 p.m. – Break

3:15 p.m. – Scenario Discussion

4:00 p.m. – "Hot wash" Session

- Highlighting of key elements raised during the Tabletop Exercise

4:15 p.m. – Evaluations and Closing

4:30 p.m. – Adjourn

APPENDIX D: EXERCISE SYNOPSIS

Scenario Narrative

Date: Monday May 15th
Time: 1100 hours

A strong cold front is expected to pass through Wildcat County and the rest of Kentucky this afternoon. Forecasters are predicting intense thunderstorms that may turn severe with heavy rain, gusty winds, and the risk of hail. High winds, power outages, and treacherous roads are a possibility across the state as a result of these storms.

APPENDIX E: ACTION PLANNING GUIDE

KYWARN can use the chart below to identify priority actions/tasks/follow-up requirements and assign responsibilities for each.

Action/Task/ Follow-up	Responsible Individual or Agency	People Who Should Be Involved	Resources and Possible Sources	Short Term Activity	Long Term Activity