

National Drinking Water Advisory Council Water Security Working WSWG

December 15–17, 2004 Meeting Summary

The Water Security Working WSWG (WSWG) of the National Drinking Water Advisory Council (NDWAC) held its third in-person meeting in Washington, D.C. December 15–17, 2004. David Binning and Rebecca Head, the WSWG co-chairs, opened the meeting at 12:30 PM EDT on December 15, 2004. In their opening remarks, Mr. Binning and Dr. Head emphasized that WSWG members must give equal attention to all three aspects of the WSWG mission. Mr. Binning and Dr. Head observed that during the December meeting, the WSWG must make progress on deliberations about incentives for broad adoption of security enhancements throughout the water sector and on measures of security program achievements.

The WSWG meeting ended at 12:00 PM EDT on December 17, 2004. Marc Santora, the designated federal officer for the WSWG for the Environmental Protection Agency (EPA), was present. David Siburg was absent from the meeting; Mr. Kevin Morley served as an alternate for Mr. Siburg. Doug Anderton was present for December 15, 2004 only. Michael Gritzuk was present for December 16–17, 2004 only.

Federal partners present were EPA (Janet Pawlukiewicz, David Travers, and Debbie Newberry; Ms. Pawlukiewicz and Ms. Newberry were not present during the entire meeting), the Centers for Disease Control (Mark Miller and Richard Gelting), the Department of Defense (Tim Mukoda) and the Department of Homeland Security (John Laws; Mr. Laws was not present during the entire meeting). Jasper Welsch from the Mississippi Department of Emergency Management was present as an identified outside expert to the WSWG. The meeting was facilitated by Rob Greenwood and Elizabeth McManus from Ross & Associates Environmental Consulting, Ltd. (Ross & Associates), the support contractor for the WSWG.

The mission of the WSWG is to provide findings and recommendations to the NDWAC that:

- (1) identify, compile, and characterize best security practices and policies for drinking water and wastewater utilities and provide an approach for considering and adopting these practices and policies at a utility level;
- (2) consider mechanisms to provide recognition and incentives that facilitate a broad and receptive response among the water sector to implement these best security practices and policies, and make recommendations as appropriate; and
- (3) consider mechanisms to measure the extent of implementation of these best security practices and policies, identify the impediments to their implementation, and make recommendations as appropriate.

The WSWG had five objectives for their December meeting.

- Review and stabilize draft recommendations on security programs and key points in draft supporting/explanatory text.

- Converge around a framework for security program incentives so that draft recommendations can be developed.
- Discuss information related to security program measures, and understand member needs and interests related to security program measures.
- Create a common sense of the WSWG products related to measures, so that work can be completed for consideration by the WSWG in January.
- Provide an opportunity for public comment.

The entire December 15–17, 2004 WSWG meeting was open to the public.

This document provides a summary of key areas of WSWG discussion, tentative areas of agreement, and next steps. The summary is organized by key discussion topic area and synthesizes conversations that occurred throughout the three days. The meeting agenda and non-draft meeting materials are available through the WSWG website at <http://www.epa.gov/safewater/ndwac/council.html>.

A draft of this document was distributed to the members of the Working Group for comment, and comments were incorporated. Changes made in response to comments from WSWG members clarified the discussion of the possible creation of a checklist or other tool to assist utilities in establishing active and effective security programs, added information about the amount of population served by various sized water systems, and fixed typos and made other clarifications.

Review of Draft Recommendations on Security

The WSWG considered a first draft of recommendations on security, dated December 8, 2004. The document contains draft recommendation statements and draft supporting or explanatory text to accompany the recommendation statements. Key sentences that describe intent behind each draft recommendation statement were highlighted in the draft supporting text, to aid in review.

The WSWG continues to converge around four recommendations on the scope and principles of an active and effective security program, thirteen program features, and three recommendations on improving the climate and resources for active and effective security programs. Changes to the draft supporting text were discussed and will be recorded in redline/strikeout in a second draft document, which will be provided to the WSWG for review before their January 2005 meeting.

Discussion of Incentives

The WSWG continued their deliberations on the second part of their mission: recommendation on mechanisms to provide recognition and incentives that facilitate a broad and receptive response among the water sector to implement an active and effective security program. The WSWG again discussed incentives as ways to “motivate” utility owners and operators to implement security program enhancements.

The WSWG observed that many utility owners and operators are already motivated to implement security enhancements because of their desire to protect their customer and brand loyalty. For these utility owners and operators, incentives help to spur more of a behavior that is already likely to happen. In this context, however, the WSWG discussed incentives as ways to help security program enhancements compete more effectively for budget and attention against

other activities. The WSWG also discussed utility owners and operators who, for whatever reason, might not be currently motivated to implement security enhancements. For these utility owners and operators, the WSWG discussed the need to motivate behavior by creating awareness of the potential negative consequences—in terms of both utility reputation and liability—that could exist if security is not addressed.

The WSWG identified ten categories or types of incentives to explore, as follows.

- Awareness of the potential negative consequences of not addressing security.
- Consideration of security costs in rate setting decisions.
- Consideration of security ratings or achievement in setting insurance premiums or bond ratings.
- Liability as a motivator for action.
- Peer pressure as a motivator for action.
- Recognition of security program achievement.
- Regulation.
- Threat of regulation.
- Technical assistance and training, both in terms of providing motivation for utilities that might not otherwise be fully motivated to implement security enhancements and as help for utilities that are already motivated to work on security, and potentially establishing certain levels of security achievement as a condition for qualification for some types of assistance.
- Grant or other financial support, including security enhancements as items that can be funded with certain types of grant dollars, increasing the total support available for security enhancements, and including certain levels of security achievement as conditions or criteria for grant eligibility.

The WSWG had a range of views about all these potential incentives, with some members more comfortable with some incentives than with others. With respect to regulation, in particular, there remains a diversity of views among the WSWG about the role that regulations might play. Some members support responsible regulations as a key incentive for security program enhancements. Other members are less comfortable with considering regulations, and instead suggest that motivation should be as strong as possible, stopping just short of regulations. The WSWG also discussed the threat of regulation as a separate incentive that might motivate the utility industry to voluntarily take actions in an effort to avoid, or lessen, state or federal mandates.

With respect to recognition, the WSWG discussed that different types of recognition might create different types of incentives. For example, a relatively informal recognition system that ranks utilities' performance on security against their peers might provide incentives for security enhancements by encouraging competition among utilities for high security ratings. Other more formal or verifiable types of recognition might be necessary before financial markets could respond by raising bond ratings or lowering insurance premiums.

With respect to technical assistance and training, members had a range of views about the idea of potentially establishing certain levels of security achievement as a condition for qualification for some types of assistance. Some members were interested in exploring this concept. Other members were concerned that this could be used to restrict access to technical assistance and training to the very individuals or organizations that might most benefit from it, those that are struggling to make progress with security.

The WSWG decided to charge a task team with furthering discussions of incentives and with developing draft recommendations on incentives for consideration during the January WSWG meeting. Rick Gelting, Mark Miller, Jeff Cooley, and Mike Gritzuk volunteered for Task Team H, on incentives.

Discussion of Measures

On December 16, 2004 the WSWG turned to discussion of the third element of their mission: consider mechanisms to measure the extent of implementation of these best security practices and policies, identify the impediments to their implementation, and make recommendations as appropriate. The WSWG identified a number of themes to guide their deliberations on measures.

- As a starting point, measures are for individual utilities to better understand performance relative to the scope and features of an active and effective security program. In the future and as deliberations continue, it may be desirable to identify measures that could be rolled up and reported nationally.
- Walk before you run. Recognize that measuring security improvement, particularly outcomes or achievements such as risk reduction, will be difficult, requiring the flexibility to potentially begin with less-complicated, activity-focused measures and moving into achievement or outcome measure over time.
- Comparability across utilities may be difficult and may pose a challenge for aggregation of regional or national data.
- You need to know what you plan to do before you can measure it. Clear security policies, plans, and priorities are important.
- Measuring training on security programs is important, and both staff and management need training.

With respect to using measures for individual utilities as a starting point and considering, in future deliberations, measures that might be rolled up and reported nationally, the WSWG was particularly concerned about developing clarity around who would be conducting any measurement activity, who would be evaluating what any measurements show, and what, if anything, that information would be used for. The group discussed the idea of peer review programs to ensure that utilities are evaluating their individual performance with other utilities. Some members were very concerned that national measures could be used to drive a degree of sameness across utilities that would be inconsistent with the notion of “one size does not fit all.” That is, could weaken the notion that individual utilities have the flexibility to determine how best to address the features of an active and effective security program given their utility-specific circumstances and conditions.

After discussing these themes, the WSWG identified a number of common types of measures that could be applied across the thirteen features of an active and effective security program, and the information and system(s) that would be needed for the measure to work.

- Policy/commitment in place (yes/no)—need documentation to know.
- Responsibility assigned (yes/no)—need documentation to know.
- Activity occurring (yes/no/how much)—need tracking to know.

The WSWG also identified some common mechanisms that might be helpful in measurement and in the information/system that would be needed for the measurement mechanism to work.

- Testing (is activity working, yes/no/results)—need testing methods and a basis for evaluation.
- Self assessment (does it exist/what is happening/what is it getting us)—need procedures for assessment and audit capability/checklist.
- Annual review (security program performance and priorities, utility-specific conditions)—need commitment to do the review and review protocols and documentation.

The WSWG discussed, in particular, the possibility of a checklist or other tools that utilities could use to assist them with measuring or auditing their security programs. Some WSWG members expressed interest in developing such a document as part of the WSWG process. Other members were cautioned that in developing any such document, care would be needed to avoid creating an expectation that security program tactics will be the same across utilities and to preserve the idea that utilities have the flexibility to determine how best to address the features of an active and effective security program given their utility-specific circumstances and conditions.

Measures of Security Program Outcomes

The WSWG identified a number of potential outcome or consequence measures. The WSWG discussed these as measures that could indicate whether risk is reduced—that is, is an active and effective security program actually making a utility more secure?

- Time to mobilize.
- Individual response time.
- High, medium, or low rating of coordination with other responders during an exercise.
- Change in number or percentage of identified vulnerabilities (active and effective security programs should cause the number/percentage to decrease).
- Change in number or percentage of security priorities accomplished (active and effective security programs should cause the number/percentage to increase).
- Using vulnerability assessment as a measurement tool – periodically updating the assessment and using it to measure improvement.
- Number of people living in vulnerability zone (should be decreasing over time).
- Number of vulnerability assessments complete.
- Number or percentage of mistake releases of security-sensitive information (active and effective security programs should cause the number/percentage to decrease).
- Number or percentage of documents correctly categorized relative to security content (active and effective security programs should cause the number/percentage to increase).
- Number or percentage of firewall breaches (should decrease over time).
- Number of people served by monitored system (should increase over time).
- Number of people served by system that can treat potential chemical, biological, and radiological hazards (should increase over time).
- Ratings of training compared to job descriptions (also referred to as job action sheets) (i.e., ratings of how well valuable training is and how relevant to assigned work).
- Ratings of needs met against exercises (i.e., ratings of how well exercises tested security performance).
- Number of incidents reported (the WSWG discussed that this number may fluctuate and that increases in the number of incidents reported may actually be a measure of the security program's vigilance).
- Number of utility-specific peer reviews complete.
- Number of training hours completed/amount of classroom training.

Measures Related to Individual Security Program Features

The WSWG also discussed measures as they might relate to many of the individual features of an active and effective security program. This is a brainstormed list, which will be further evaluated by the WSWG. Some of the potential measures listed as related to individual features also are listed with potential measures related to outcomes/consequences (above).

Feature 1

- Is there a public education program for customers and public officials?
- Is there security training for employees?
- Are agreements with emergency response partners in place?
- Is security addressed in the business continuity plan?

Feature 2

- Are management and staff security trained?
- How many incidents/suspicious incidents reported?
- How were incidents responded to? Were protocols followed?
- Is there documentation of incidents and responses?
- Are incidents and responses reviewed with staff?

Feature 5

- Does management/utility board support adoption of security policies?
- Is there ongoing training?
- Are security responsibilities part of job descriptions?
- Is performance of security responsibilities part of performance evaluations?
- Are there security policies and procedures?

Feature 6

- Are visitors checked and escorted?
- Is there a means to control vehicular access?
- Is access denied to persons who no longer qualify for access?
- Are non-public spaces protected from casual trespass?
- Can individuals who are not eligible for access talk their way into restricted areas?
- Are all individuals identified?
- Is there a policy on intrusion, and is the policy tested?
- Is there a way to prevent access to sensitive assets?
- Is there technology to monitor the security parameter that is established?

Feature 7

- Number of people served by systems that have monitoring (at various levels of performance) in place at intake and distribution systems?

Feature 8

- Is there a lead information or communications officer for both paper and electronic information?
- Are there policies and procedures in place that categorize and control information? Are these policies used/followed?
- Is there an employee training program?
- How does implementation of the policies and procedures perform under testing? Is information secure?
- Is security incorporated into design standards for new information systems?

Feature 9

- Number of people served by systems able to treat potential chemical, biological, and radiological hazards?

Feature 11

- Staff trained and identified?
- What are the results of random drills?
- High, medium, or low ratings of time to fully mobilize and individual mobilization times?
- High, medium, or low rating of coordination with other responders during an exercise?

Feature 13

- Number of meetings with responders per year?
- Survey of participants in exercises to see if their needs are met?
- Joint communications plan and performance according to the plan in joint exercises?

Task Teams on Measures

The WSWG identified two task teams to work further on measures. Task Team F will work on ideas for measures for features 3, 4, 10, and 12 (these are the features of an active and effective security program for which individual measures were not discussed at the December meeting); and may also review and further ideas about measures for other features. Bud Shardien, Rebecca Head, and Tim Mukoda volunteered for Task Team F. Task Team G will work on outcome measures of active and effective security programs. Paul Orum, Jennifer Nuzzo, Nick Catrantzos, and John Young volunteered for Task Team G.

Update on the Water Sector Coordination Council

Paul Bennett provided an update on the Water Sector Coordination Council (Council). The Council is made up of representatives of the utility sector. Each of the eight largest trade associations for water and wastewater utilities identified one staff person and two members, and these twenty-four representatives make up the Council. Mr. Bennett is vice-chair of the council. Mr. Gritzuk and Diane Van deHei are members of the Council. The Council remains very supportive of the work of the WSWG.

The Council has asked for an opportunity to review the WSWG's draft recommendations and provide the WSWG comments before the WSWG issues its final report to the NDWAC. Mr. Greenwood and the co-chairs agreed to take this request under advisement and discuss whether it was allowed under the NDWAC rules for working groups and whether the WSWG process provides enough time to carry out such a review.

Presentations to the WSWG

The WSWG considered four presentations during the December meeting. On December 15, 2004, Jeff Cooley and Doug Anderton of the WSWG gave a presentation highlighting the security interests and concerns of small water systems. Also on December 15, 2004, Jonathan Hermann of the EPA National Homeland Security Research Center gave an update on ongoing and planned water security-related research, with an emphasis on research into contaminant monitoring techniques. On December 16, 2004 John McLaughlin of McLaughlin and Associates gave a presentation on the theory and practice of performance measurement. Finally, on December 17, 2004, Jim Caverly, Director of the Department of Homeland Security

Infrastructure Coordination Division, gave a presentation on the National Infrastructure Protection Plan and the work of his office with infrastructure sectors. Presentations are included in this meeting summary as Attachments E–G. Mr. Caverly declined to provide a copy of his presentation.

Public Comment

No individuals offered comment on December 15, 2004, or December 16, 2004. On December 17, 2004, Mr. Greenwood opened the public comment period by notifying the WSWG of a decision regarding meeting participation. Doug Anderton had requested that Ed Thomas, of the National Rural Water Association, be allowed to substitute for him on December 16 and 17, 2004. After consultation with the co-chairs and EPA, it was determined that under the NDWAC ground rules for work groups, Mr. Thomas was not eligible to substitute for Mr. Anderton. The NDWAC ground rules for work groups stipulate that an association member can substitute for a working group member only once, and Mr. Thomas had already substituted for Mr. Anderton during the July 27, 2004 WSWG conference call. Mr. Greenwood invited Mr. Thomas to offer any comments from the perspective of small water systems.

Mr. Thomas commented on the composition of the WSWG. He drew the following table:

	WSWG Membership	Number of Systems
Large utilities	6 (40%)	0.05%
State/local regulators	5	
Public health and environmental advocates	2	
For-profit systems	1	
Technical assistance providers	1	
Small systems	1 (6%)	95%

Mr. Thomas described large utilities as those that serve more than 100,000 people and small systems as those that serve fewer than 10,000 people. Mr. Thomas indicated that there seemed to be an imbalance in the group composition when compared to the number of systems. He explained that the National Rural Water Association is different from any other member of the WSWG because they represent small communities. He further explained that the mission of local water providers in these communities is protection of public health in the community.

The WSWG briefly discussed Mr. Thomas' table. One WSWG member questioned the number of state/local regulators listed, indicating that regulation is only one feature of the responsibilities assigned to state and local public health officials. Another WSWG member indicated that it would also be helpful to have information on the total number of people served by large utilities and small systems, for comparison. These numbers are provided in the EPA publication entitled "FACTOIDS: Drinking Water and Ground Water Statistics for 2003" and are included here for reference.

Public Water System Inventory Data

System size by population served

		Very Small 500 or less	Small 501-3,300	Medium 3,301 – 10,000	Large 10,001 – 100,000	Very Large >100,000	Total
CWS	# systems	30,417	14,394	4,686	3,505	361	53,363
	Pop. served	5,010,834	20,261,508	27,201,137	98,706,485	122,149,436	273,329,400
	% of systems	57%	27%	9%	7%	1%	100%
	% of pop	2%	7%	10%	36%	45%	100%
NTNCWS	# systems	16,785	2,786	97	16	2	19,686
	Pop. served	2,327,575	2,772,334	506,124	412,463	279,846	6,298,342
	% of systems	85%	14%	0%	0%	0%	100%
	% of pop	37%	44%	8%	7%	4%	100%
TNCWS	# systems	85,366	2,657	96	29	4	88,152
	Pop. served	7,315,647	2,602,706	528,624	619,248	12,269,000	23,335,225
	% of systems	97%	3%	0%	0%	0%	100%
	% of pop	31%	11%	2%	3%	53%	100%
Total # of Systems		132,568	19,837	4,879	3,550	367	161,201

CWS means Community Water System, a public water system that supplies water to the same population year-round

NTNCWS means Non-Transient Non-Community Water System, a public water system that regularly supplies water to at least 25 of the same people at least six months per year, but not year-round. Examples include: schools, factories, office buildings and hospitals that have their own water systems.

TNCWS means Transient Non-Community Water System, a public water system that provides water in a place such as a gas station or camp ground where people do not remain for long periods of time.

No other public comments and no written comments were offered.

Meeting Wrap-Up and Next Steps

Mr. Binning and Dr. Head closed the WSWG meeting by thanking WSWG members for their attention and participation, and wishing them happy holidays.

The following action items and next steps were identified during the meeting:

- Ross & Associates will prepare a second draft of recommendations and supporting/explanatory text on security, and will provide to the WSWG for review prior to the January meeting.
- Ross & Associates will organize meetings of three WSWG task teams to further define and describe draft recommendations on security program incentives and further discussions of security program measures, and will provide materials to task teams for review.
- The co-chairs will take the request of the WSCC for additional coordination with the WSWG under advisement and get back to the WSCC at the January WSWG meeting.

In accordance with the WSWG project plan, the January meeting of the WSWG will be focused around: (1) stabilizing draft recommendations on security program incentives, and (2) framing draft recommendations on security program measures. Opportunities for the WSWG to go into closed session will be provided for, if needed.

Attachments

Meeting Materials—Non-Draft Documents

- Attachment A: Meeting Agenda
- Attachment B: NDWAC Working WSWG Ground Rules
- Attachment C: WSWG Operating Procedures
- Attachment D: WSWG Project Plan
- Attachment E: Draft security recommendation statements and supporting text, dated December 8, 2004
- Attachment F: Presentation of Jeff Cooley and Doug Anderton, dated December 15, 2004
- Attachment G: Presentation of Jonathan Herrmann, dated December 15, 2004
- Attachment H: Presentation of John McLaughlin, dated December 16, 2004

Meeting Attendance and Participation

- Attachment I: WSWG Roster and Contact List
- Attachment J: List of Others in Attendance

Additional Meeting Materials—Draft Documents, Not Attached

- None