



OFFICE OF INSPECTOR GENERAL

Catalyst for Improving the Environment

Evaluation Report

EPA's Final Water Security Research and Technical Support Action Plan May Be Strengthened Through Access to Vulnerability Assessments

Report No. 2004-P-00023

July 1, 2004

Report Contributors:

Erin Barnes-Weaver
Fred Light
Ricardo Martinez
Erin Mastrangelo

Abbreviations

EPA	Environmental Protection Agency
ORD	Office of Research and Development
OW	Office of Water



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
INSPECTOR GENERAL

July 1, 2004

MEMORANDUM

SUBJECT: Evaluation Report:
EPA's Final Water Security Research and Technical Support Action Plan
May be Strengthened Through Access to Vulnerability Assessments
Report No. 2004-P00023

FROM: Jeffrey K. Harris /s/
Director for Program Evaluation, Cross-Media Issues

TO: Paul Gilman
Assistant Administrator for Research and Development

Benjamin Grumbles
Acting Assistant Administrator for Water

Attached is a copy of the subject final report. During our ongoing evaluation of the Environmental Protection Agency's (EPA's) activities to enhance the security of the Nation's water supply, we noted an issue that requires your immediate attention. Specifically, we believe EPA's Office of Research and Development (ORD) should promptly request and be granted access to the utility vulnerability assessments being prepared pursuant to the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Bioterrorism Act). These vulnerability assessments may better enable ORD to assure that EPA's Water Security Research and Technical Support Action Plan (Research Action Plan) appropriately considers needs identified by water utilities.

We propose this action because, during our preliminary research,¹ we learned that the draft Research Action Plan may be finalized without ORD's considering potentially useful data in the vulnerability assessment on water security needs. EPA has already initiated several research projects, and half of the 3-year life of the National Homeland Security Research Center responsible for executing the Plan has already expired (although extending the center's life is being considered). We are reporting this issue at this time because of the time-critical nature.

¹The EPA Office of Inspector General conducted preliminary research evaluating water system security activities in support of the Agency's Strategic Plan for Homeland Security.

We based our observations and recommendations on information obtained from our interviews with water security experts, water utility officials, Research Action Plan stakeholders, and headquarters and regional EPA representatives; attendance at stakeholder and peer review meetings; and a review of vulnerability assessment tools, methodologies, and related documents. We are performing our evaluation in accordance with the *Government Auditing Standards*, issued by the Comptroller General of the United States. We began our review on June 16, 2003, and our review is continuing.

EPA's response to our draft report sufficiently addressed the report recommendations; therefore, no additional response is necessary.

Background

In 1998, Presidential Decision Directive 63 addressed the need to protect the Nation's critical infrastructures against criminal and terrorist attacks, and designated EPA the lead Federal agency for water infrastructure. In December 2003, Homeland Security Presidential Directive 7 confirmed EPA's role as the lead agency for drinking water and water treatment systems. Water protection concerns greatly increased following the terrorist attacks on September 11, 2001, and subsequent reports of potential terrorist activities that could threaten the water infrastructure. EPA's September 2002 *Strategic Plan for Homeland Security* stated, "EPA will advance the state of knowledge in the areas relevant to homeland security to provide responders and decision makers with tools and the scientific understanding they need to manage existing or potential threats to homeland security."

EPA's Office of Water (OW) formed a Water Protection Task Force² shortly after the September 11, 2001, terrorist attacks, and ORD formed the National Homeland Security Research Center in September 2002. The OW task force and ORD research center jointly developed the Research Action Plan. To develop the Plan, they held a series of meetings with Federal partners and other select stakeholders, and submitted the Plan to a review panel at the National Academies of Science on April 22, 2003. EPA's Research Action Plan sought to identify and prioritize critical drinking water and wastewater security research needs, to provide a road map to enhance the protection of the Nation's water systems from potential threats or deliberate attacks. EPA estimates that it will require \$43.6 million to fund needed research projects.

Concurrent to development of the draft Research Action Plan, OW awarded \$51 million in grants to help large utilities prepare vulnerability assessments required under the Bioterrorism Act. Vulnerability assessments are potentially useful sources of research and development needs because they require utilities to assess "the vulnerability of its system to a terrorist attack or other intentional acts intended to substantially disrupt the ability of the system to provide a safe and reliable supply of drinking water. The vulnerability assessment shall include, but not be limited to, a review of pipes and constructed conveyances, physical barriers, water collection, pretreatment, treatment, storage and distribution facilities, electronic, computer or other

²In 2003, EPA's Water Protection Task Force became the Agency's Water Security Division.

automated systems which are utilized by the public water system, the use, storage, or handling of various chemicals, and the operation and maintenance of such system.”³

ORD Should Access Utility Vulnerability Assessments to Validate its Research Need Priorities

Despite the breadth, expense, and proximity of the vulnerability assessments conducted by water utilities, ORD had not requested access to these assessments as of May 21, 2004, even though the assessments could provide ORD with valuable information for updating the Research Action Plan. Copies of the assessments are stored by OW’s Water Security Division, and ORD would need to request access to those secured documents in order to review them. However, ORD had not requested such access from OW. We believe ORD’s reviewing those vulnerability assessments may provide it with additional information on needs identified by water utilities. That information could then be used to make the Research Action Plan for addressing potential terrorist attacks more protective of public health and the environment.

The direct utilization of the vulnerability assessments to identify water security research needs has been advocated by internal and external stakeholders. EPA’s Director for Ground Water and Drinking Water cited vulnerability assessments as a source of research and development topics as early as February 2003. Access was also advocated in an October 2003 General Accounting Office Report,⁴ which noted that 90 percent of a group of nationally recognized water security experts agreed or somewhat agreed that research allocation decisions should be based on vulnerability assessment information. Further, in 2004, a member of the National Academy of Science’s Research Action Plan review panel stated:

The vulnerability assessments provide information that could provide guidance. It will provide EPA an opportunity to address vulnerabilities instead of guessing what they are. It will provide assurance that all that needs to be considered have been considered or we risk leaving our self at risk. Access to the vulnerability assessments would strengthen whatever plan is developed.

It should be noted that, in May 2003, EPA awarded a contract for a review of vulnerability assessments, but this review did not include concerns related to EPA’s Research Action Plan. In December 2003, EPA amended the contract and included tasks for the contractor to address the concerns of others. As a result, ORD submitted a list of questions relating to EPA’s Research Action Plan. However, the contractor responded that many of ORD’s questions could not be answered or could only be partially answered based on the data available in the assessments and the level of contractor effort required. An EPA official said another contract amendment would be necessary to complete ORD’s review. This problem may have occurred, in part, because ORD’s inability to review at least a sample of the vulnerability assessments prevented ORD

³Public Law 107-188 - June 12, 2002; Title IV Section 1433 (a)(1).

⁴ GAO-04-29, “Expert’s Views on How Future Federal Funding Can Best Be Spent to Improve Security,” October 2003.

officials from knowing what type of information was contained in the assessment and, thus, the appropriate questions to ask.

Recommendations

To better ensure that the final Research Action Plan appropriately incorporates the breadth of the Nation's water security needs, we recommend that:

1. ORD immediately request, and OW immediately grant to ORD officials responsible for developing, prioritizing, and implementing critical water security research projects, access to vulnerability assessments provided by utilities. Once granted access, appropriate ORD officials should review the vulnerability assessments to determine the extent to which EPA's Research Action Plan addresses utilities' most significant vulnerabilities.
2. If ORD wishes to use a contractor for the vulnerability assessment review relating to EPA's Research Action Plan, ORD should immediately request access to a sample of vulnerability assessments to enable it to more effectively formulate questions for contractor review, and OW should expedite a contract amendment to have the contractor address ORD's additional questions.

Agency Response and Office of Inspector General Evaluation

In its response to our draft report, EPA agreed with the intent of our recommendations. EPA's response included a corrective action plan, with milestone dates, which adequately addressed the problems identified. We commend EPA for its continued efforts and quick action. The full Agency response is provided in Appendix A.

If you or your staff have any questions, please call me at (202) 566-0831 or Ricardo Martinez at (212) 637-3045.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

June 25, 2004

MEMORANDUM

SUBJECT: Response to Office of Inspector General Draft Evaluation Report:
EPA's Final Water Security Research and Technical Support Action
Plan
May be Strengthened Through Access to Vulnerability Assessments
Assignment No. 2003-001288

FROM: Paul Gilman /s/ *Paul Gilman*
Assistant Administrator for Research and Development

Benjamin Grumbles /s/ *Benjamin Grumbles*
Acting Assistant Administrator for Water

TO: Jeffrey Harris
Director for Program Evaluation, Cross-Media Issues

Thank you for the opportunity to respond to the subject draft report. The draft report makes the following recommendations:

1. ORD immediately request, and OW immediately grant to ORD officials responsible for developing, prioritizing, and implementing critical water security research projects, access to vulnerability assessments provided by utilities. Once granted access, appropriate ORD officials should review the vulnerability assessments to determine the extent to which EPA's Research Action Plan addresses utilities' most significant vulnerabilities.
2. If ORD wishes to use a contractor for the vulnerability assessment review relating to EPA's Research Action Plan, ORD should immediately request access to a sample of vulnerability assessments to enable it to more effectively formulate questions for contractor review,

and OW should expedite a contract amendment to have the contractor address ORD's additional questions.

We understand that the intent of your recommendations is to assure that EPA's Research and Technical Support Action Plan (Action Plan) appropriately considers the security needs identified by water utilities.

EPA's Office of Research and Development (ORD) has always had interest in accessing the vulnerability assessments (VAs) for research and technical support needs to inform the Action Plan; and EPA's Office of Water (OW) has been supportive of this interest. When access was not immediately available, ORD and OW convened a meeting of water security stakeholders to identify the most important issues associated with protecting water infrastructure. Information was also received through a review of the Action Plan by the National Academies. Further, National Homeland Security Research Center staff served on an advisory committee for a project sponsored by the American Water Works Research Foundation. This project was designed to better understand water infrastructure vulnerabilities. It involved group discussions between consulting engineers who prepared the VAs and water utilities on the most important findings from their efforts. Through this series of activities, ORD concluded this was the most efficient way to gather information on water utility vulnerabilities.

While we are confident that the process our offices have used to develop the Action Plan has been conducive to accurately identifying the utilities' highest priority security needs, we agree with the intent of the recommendations. Our offices will take the necessary steps to implement the above two recommendations and review a sample of the vulnerability assessments.

As you pointed out in your memorandum and in preparation for ORD's review of the vulnerability assessments, OW is evaluating the questions ORD posed regarding the potential research needs contained in the vulnerability assessments. ORD has identified individuals with the necessary security clearances for which access to vulnerability assessments has been requested. OW is prepared to immediately grant access to the vulnerability assessments to these individuals to expedite the ORD review process. In order to facilitate implementation of the second recommendation, OW has already extended its original contract to allow for the continuation of work in the event that the initial review of a sampling of vulnerability assessments by ORD officials determines that additional contractor review is feasible and advisable.

While we are confident that the process our offices have used to develop the Action Plan has been conducive to accurately identifying the utilities' highest priority security needs, we agree with the intent of the recommendations. Our offices will take the necessary steps to implement the above two recommendations. ORD will work with OW to review a sample of the VAs to determine their value in providing this information. ORD is not in a position to devote scarce resources on a lengthy review of limited value; therefore, a more extensive review of the VAs will be decided after this sampling is completed and evaluated.

Please be assured that we are fully committed to meeting the Nation's water security needs in the most effective and efficient way possible. ORD and OW are already implementing the recommendations; thus, we are attaching our corrective action plan. We respectfully request that the OIG close this audit upon issuance of the final report.

Thank you again for the opportunity to comment on the subject draft report. Should your staff have any questions, or require additional information, please contact Jonathan Herrmann on (513) 569-7839 or Terry Simpson on (202) 564-0968.

Attachment

cc: Henry L. Longest II, ORD
William Farland, ORD
Lek Kadel, ORD
Jim Morant, ORD
Alice Sabatini, ORD
Tim Oppelt, ORD
Andy Avel, ORD
Jonathan Herrman, ORD
Terry Simpson, ORD
Michael Shapiro, OW
Cynthia Dougherty, OW
Nanci Gelb, OW
Janet Pawlukiewicz, OW
Debbie Newberry, OW
Cynthia Simbanin, OW
Mike Mason, OW

**Corrective Action Plan to Assignment No. 2003-001288 OIG Review
Draft Evaluation Report Provided: May 21, 2004**

Rec #	Report Recommendation	Action Official	Corrective Action	Due Date
1	ORD immediately request, and OW immediately grant to ORD officials responsible for developing, prioritizing, and implementing critical water security research projects, access to vulnerability assessments provided by utilities. Once granted access, appropriate ORD officials should review the vulnerability assessments to determine the extent to which EPA's Research Action Plan addresses utilities most significant vulnerabilities.	Water Security Team Leader, National Homeland Security Research Center, ORD	On May 27, 2004, ORD's National Homeland Security Research Center (NHSRC) verbally requested access to the vulnerability assessments. This request was made to OW's Water Security Division (WSD) and WSD's response was positive. NHSRC and WSD staff will work together to finalize access and any requirements associated with that access. NHSRC plans to have four individuals review a total of 20 large utility vulnerability assessments and will work with WSD to identify the vulnerability assessments to be reviewed.	June 18, 2004
2	If ORD wishes to use a contractor for the vulnerability assessment review relating to EPA's Research Action Plan, ORD should immediately request access to a sample of vulnerability assessments to enable it to more effectively formulate questions for contractor review, and OW should expedite a contract amendment to have the contractor address ORD's additional questions.	Water Security Team Leader, National Homeland Security Research Center, ORD	NHSRC will develop a set of questions that will be used by each reviewer in conducting the vulnerability assessment reviews. These questions will focus on determining if research needs, in addition to those identified in the Water Security Research and Technical Support Action Plan, are identified in the vulnerability assessments. This set of questions will be informed by the preliminary review of the vulnerability assessments by WSD's contractor. Final analysis and a decision to move to a fuller review will be made in the August time frame. OW has already extended its original contract to allow for the continuation of reviews if such is deemed necessary.	August 31, 2004

Distribution

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Audit Followup Coordinator, Office of Research and Development (8104R)
Audit Followup Coordinator, Office of Water (4101M)
Associate Administrator for Congressional and Intergovernmental Relations (1301A)
Associate Administrator for Public Affairs (1101A)
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