

Compiled by Amy McIntosh

RISKY BUSINESS

MARK LECHEVALLIER & JIAN YANG



Modeling & managing risks to ensure more informed decision making

Risk management is a daily task for water utilities. *WWD* Assistant Editor Amy McIntosh spoke with American Water experts Mark LeChevallier, Ph.D., and Jian Yang, Ph.D., P.E., about how to manage risks more effectively.

Amy McIntosh: Research from your report "Risk Modeling of Microbial Control Strategies for Main Breaks & Depressurization" was presented at the American Water Works Assn. 2012 Distribution Systems Symposium & Exposition. What are the major takeaways for that audience from your presentation?

Jian Yang: The main takeaway message is for water utilities to improve their responses to main breaks and depressurization events to better protect public health. We wanted them to get a better idea of the effectiveness of disinfection and flushing practices conducted in the field to mitigate the risks. Also, we want them to be better aware of the parameters they can record to quantify the risk.

McIntosh: How can a utility improve its response to main breaks and depressurization events?

Yang: Based on risk modeling, we can categorize main breaks based on their magnitude and severity. We have less severe main breaks, such as pinhole leaks, that don't involve any depressurization. There are also other kinds of main breaks that have slightly higher severity, where you either lose the pressure locally or system wide.

Then the operators can respond accordingly. For local depressurization, the operator can conduct flushing, which will achieve removal of both the contamination in the water and the sediments in the pipe. They can also use free chlorination to disinfect any remaining potential pathogens to further reduce the risk. By applying all the sanitary controls, effective flushing and adequate disinfection, the utilities will be able to reduce the risks to an acceptable level.

McIntosh: Please explain what is risk modeling and its role in risk assessment?

Yang: Risk modeling as a quantitative microbial risk assessment. It collects existing information and puts it into a framework where we can reasonably estimate the risk of the infection on our drinking water customers.

Mark LeChevallier: The risk model allows us to look at a lot of these risk scenarios in a management situation. We can say, "What if we increase the chlorine? What if we flush it? What if we do different kinds of activities? How important would that activity be to public health?"

In the past, we might actually go out in the field and collect samples. Now we can just sit at a computer and do those models. Lots of times, we find the answers are not necessarily something we would have thought of. Sometimes it causes us to update the models, but sometimes it gives us some really important insights that weren't apparent before we put the whole model together. It is a much more systematic and coordinated approach.

Yang: The regulatory agencies have been using risk modeling to develop other regulations, but when they are developing the water industry standards for main break depressurization repairs, there is a lack of this risk management and risk modeling structure. What we have done here is fill the gap and put our practice of repairs within the framework of risk assessment.

McIntosh: Why is it important for a utility to have a good risk management structure in place?

LeChevallier: Fundamentally, as water providers, we are managing risks for our customers and making decisions on where to make investments, where to make changes and how to improve the quality of the water with a minimum amount of risk.

It comes around to good decision making. Good decision making is based on good information. The risk model is a way of organizing that information, evaluating how good it is and using that to drive decision making. *WWD*

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For more information, write in 1112 on this issue's reader service form on page 48.

News Briefs compiled by Amy McIntosh

Layne Christensen to Move to Houston



Layne Christensen Co. will relocate its global corporate

headquarters from Mission Woods, Kan., to suburban Houston. The move is expected to begin in spring 2013 and be completed by the end of 2013.

Water Service Extended to West El Paso County



As a result of a \$1.74 million project and the cooperative effort of the U.S. Department of Agriculture, El Paso

Water Utilities, El Paso County and Border Interfaith, more than 200 residents of west El Paso County, Texas, will have reliable drinking water service for the first time.

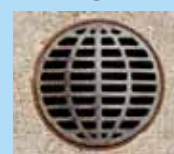
RJN Group Engineer Wins Golden Manhole Award



During the Illinois Water Environment Assn. Collection

System Seminar, RJN Group Inc. Senior Project Manager Catherine Morley, P.E., was named the 2012 recipient of the Golden Manhole Award for her contributions to the collection systems industry.

EPA Settles Pennsylvania Sewage Violations



The U.S. and the Commonwealth of Pennsylvania announced a settlement with

the Scranton Sewer Authority resolving alleged Clean Water Act violations involving sewer overflows to the Lackawanna River and its tributaries. The settlement establishes a control plan to protect the river.

American Water Resources Expands Operations Center



American Water Resources' operations center in

Alton, Ill., has been expanded from 7,972 sq ft to 20,427 sq ft to accommodate future growth.

Israel Perchlorate Treatment Project Begins



Envirogen Technologies Inc., in a joint venture with Shikun & Binui

Water Ltd., has been selected to perform a pilot-scale demonstration

of its fluidized-bed bioreactor technology for the remediation of perchlorate-laden groundwater in the Israeli city of Ramat Ha'Sharon.

Chile Seawater Desalination Plant Planned



Nirosoft Industries will supply a sea-water desalination plant

for Aguas De Altiplano, the Chilean regional water utility company. The plant, to be located in La Chanavayita, will produce 45 cu meters of water per hour (200 gpm).

Registration Opens for AMTA/AWWA Membrane Technology Conference



Registration is open for the 2013 American Membrane Technology Assn./American Water Works Assn. Membrane

Technology Conference & Exposition, to be held Feb. 25 to 28 in San Antonio. Members are encouraged to register for the conference and hotel by Jan. 24 to receive discounted pricing and group rates.

Massachusetts & Israel Join for Trade Mission



Members of the Massachusetts Water Innovation Mission to

Israel acted as ambassadors of the state's water technology industry in a Dec. 16 to 19 visit to Israel. The trip included private meetings with Israeli water industry entrepreneurs, company executives, investors and government officials, plus site visits and a technology competition.

Degremont Receives Leadership Award



The GE ecomagination award was presented to Degremont during a ceremony to celebrate the 10 years of partnership between

the two companies and the more than 60 Degremont sites equipped with the GE technology.

Industry News

- Michael Johnson was promoted to president of See Water Inc.
- Kevin Markhardt was named vice president of water treatment for PC Construction.
- Craig Lee joined Cloud 9 as senior project manager for lift station and sewer cleaning in the water and wastewater maintenance division.