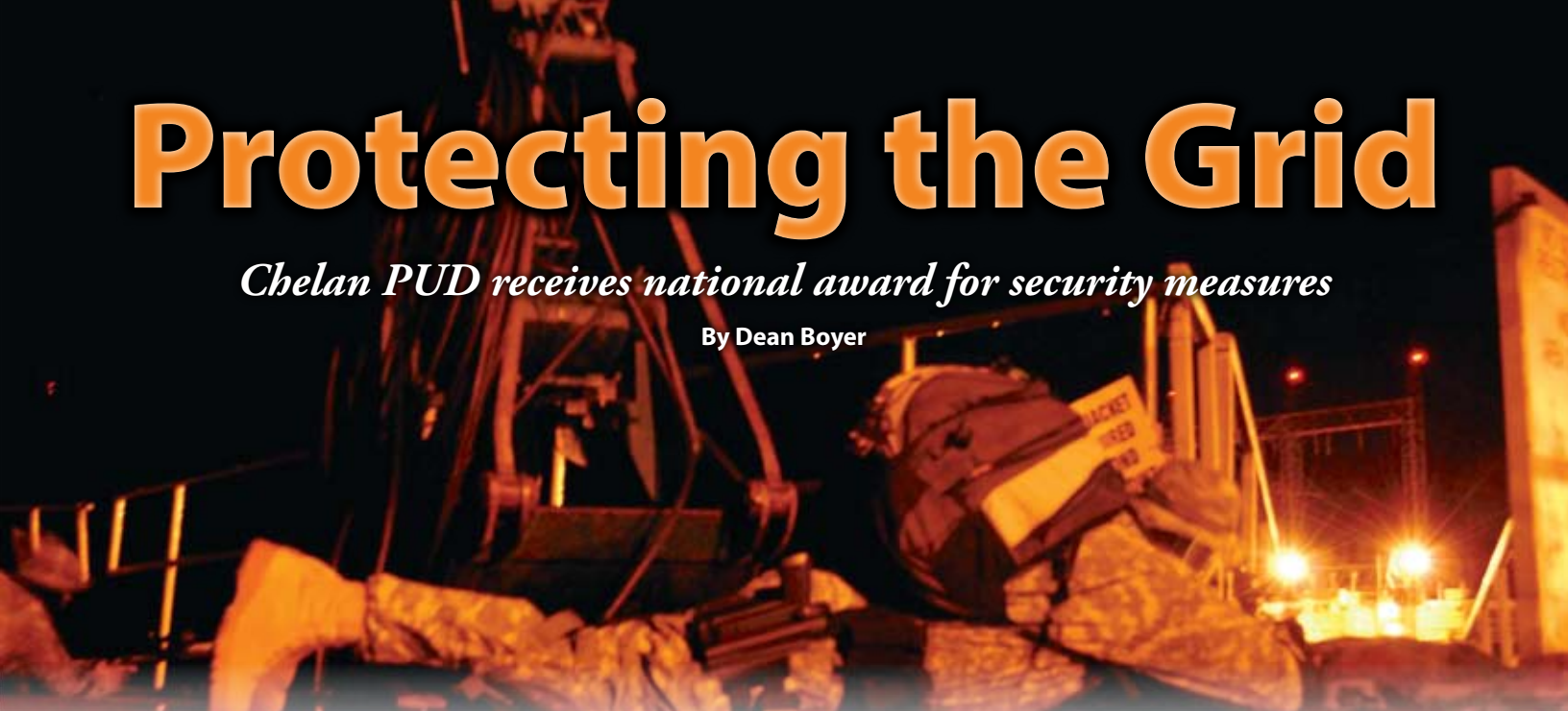


Protecting the Grid

Chelan PUD receives national award for security measures

By Dean Boyer



State Patrol SWAT team member awaits signal to advance during terrorist training exercise.

Chelan County PUD has received an award from the National Hydropower Association – and attracted the attention of the Department of Homeland Security – for advanced security measures the PUD put in place at its hydroelectric dams and other facilities following the terrorist attacks of Sept. 11, 2001.

In April, former FBI agent and Oregon Department of Justice unit chief Dick Robert, now Director of Security at Chelan PUD, accepted an Outstanding Stewards of America's Waters Award for Operational Excellence from the hydropower association.

He is also working with Homeland Security, which is particularly interested in how the PUD has integrated the use of remote-controlled infrared cameras into both its security and operational programs, and its multi-level, electronically monitored badge program to keep track of who is on site at scattered PUD facilities.

Robert, who spent most of his law enforcement career in the Northwest, was a private security consultant in Portland when Al Qaeda terrorists hijacked four airliners on Sept. 11, 2001, flying two of them into the towers of the World Trade Center in New York and one into the Pentagon outside Washington, D.C.

In the aftermath of the attacks, the government imposed new security requirements on power generators like Chelan PUD, which operates the Rocky Reach,

Rock Island and Lake Chelan hydroelectric projects. Robert was initially brought in as a consultant and then hired as Director of Security in the spring of 2002.

"The federal mandates were clear," Robert said. "Any activity at our hydroelectric dams had to be put through some type of protective measures.

"But at the same time, it was very important to our commissioners that the Visitor Center and the Museum of the Columbia at the Rocky Reach Hydro Project remain open to the public, or even allow fishing near the dams," Robert added. "That required some balancing between security and access."

Under Robert's guidance, the PUD embarked on an extensive program of security upgrades, investing more than \$3.8 million in salaries, contracts and capital improvements to protect the dams, transmission and power distribution infrastructure, computer systems and people.

To keep the Visitor Center open, the PUD installed metal detectors and contracted with the Chelan County Sheriff's Office to have deputies on site. "The process is very similar to what you see at the airport," Robert said.

Central to the broader security system –

which encompasses the dams, switchyards, PUD offices and adjacent park land owned and operated by the PUD – is a network of 80 video and infrared cameras.

And unique to the Chelan PUD system, those cameras are monitored by the state police and the regional 911 center, as well as PUD employees at multiple locations. "We're the only utility in the nation that provides real-time images to law enforcement to monitor areas of importance that may fall within camera range," Robert said.

The high-powered cameras can magnify images 23 times, Robert said, which allows law enforcement to view areas outside the perimeter of a specific PUD facility.

In one case, Robert said, authorities were able to track an armed robber as he tried to escape police by crossing the Columbia River on a footbridge within view of PUD cameras. Dispatchers in the 911 center were able to alert authorities, who met the fleeing robber on the other side of the bridge.

Another time, Robert said, a man who climbed to the top of a bridge, apparently intent on committing suicide, saw the camera turn toward him, realized he was being watched, and changed his mind.

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Authorities have also used the cameras to monitor traffic, dispatch fire trucks and crack down on graffiti.

The PUD camera network, linked by fiber-optic cable, also employs infrared technology, which Robert had seen in use at a military installation.

Using laser beams to aim the cameras, PUD employees in the network center can monitor equipment in the remote switchyards to detect heat buildup and isolate a unit before it fails.

And the infrared cameras can detect body heat at night when ordinary cameras might not have enough light to show an image. In one instance that Robert likes to tell, a PUD employee monitoring the cameras at the control center picked up the heat image of a bobcat approaching a switchyard and cautioned a guard, "You've got somebody coming for dinner."

Robert stressed the award from the National Hydroelectric Association was a district award and credited PUD employees with accepting the new security measures, including a complex, electronic badge system that details different levels of training and access to facilities.

"It was a matter of finding balance between being protective, yet not interfering with operation of the PUD," Robert said. "Security doesn't need to be inconvenient."

To help that along, Chelan PUD chose vendors that would allow PUD personnel to learn how to operate and maintain the new camera equipment at the factory.

"That gave our craft people pride of ownership and helped in acceptance of the new security measures," Robert said. "Our people became the experts, which helped us reach a higher level of preparedness more quickly."

Having met the first round of new security mandates – and becoming a model for other generators – Chelan PUD is now working to satisfy additional security and reliability standards adopted by the Federal Energy Regulatory Commission and the North American Electric Reliability Corporation, which develops and enforces reliability standards for the power grid.

While past standards have dealt primarily with physical security, Robert said the new standards focus on cyber security – protecting against disruptions caused by terrorists hacking into utility company computer systems.

In January, the CIA issued a rare public warning to the power and utility industry, announcing at a conference in New Orleans that cyber attackers had hacked into utility computer systems outside the United States and made demands, and in at least one case causing a power outage that affected several cities.

That same week, FERC approved eight cyber-security standards for electric utilities involving identity controls, training, security perimeters, physical security of cyber equipment, incident reporting and recovery.

The U.S. electricity grid has always been vulnerable to outages, but "cyber-security is a different kind of threat," said FERC Chairman Joseph T. Kelliher. "This threat is

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DICK ROBERT
Director of Security at Chelan PUD

Chelan Security Director Dick Robert monitors PUD cameras from the security office at the PUD.



a conscious threat posed by a single hacker, or even an organized group that may be deliberately trying to disrupt the grid.”

Robert said the past six years have opened his eyes to the complexities of the power grid.

“I’ve had to learn the importance of the control centers, the physical characteristics of the dams, and how the generation is moved to the grid,” Robert said. “As utilities integrate more computerized control to improve efficiency and reliability for their customers, cyber-security is becoming even more critical.”

In receiving the National Hydropower Association award, Robert told the industry audience he appreciated that security has been formally recognized as an integral part of utility operations. “But what would make me happiest,” he added, “is if this award were not necessary at all, because that would indicate the world had become a better place.”

Dean Boyer is Director of Communications for the Washington PUD Association and editor of Connections.



Preparing for the Unthinkable

In November 2006, eco-terrorists stormed the control room at the Rocky Reach Hydroelectric Project intent on “liberating” the Columbia River by open the dam’s spill gates and letting the river return to its natural state.

In this case, the “terrorists” were Chelan PUD employees, part of a simulation in concert with local law enforcement, designed to test security measures and response times.

But it was realistic enough that working control room personnel – alerted to the simulation – were still stunned when local SWAT team members rushed in to overcome the terrorists and rescue the hostages, ordering everyone to get on the floor. “As far as we knew, (Chief Power Plant Operator Ed) Tippen and I were going to be left out of the role playing,” recalled Senior Power Plant Operator David Fisk, who was on duty that night. “It didn’t happen quite like that. We ended up being players.”

PUD General Counsel Carol Wardell, who agreed to play a hostage for the security exercise, later realized that see, too, got caught up in the realism. A former Superior Court judge, Wardell said she often wondered why eye witnesses were so unreliable at trial. But after her “rescue,” she couldn’t recall how many terrorists there were “and worse, I couldn’t tell the SWAT team which way they went after they dumped us.”

Dick Robert, the PUD’s chief of

security who planned the simulation with local law enforcement and the Washington State Patrol, said an evaluation of the exercise provided three primary lessons.

One, the PUD needed to better protect its spill gate control operations.

Second, law enforcement radios don’t always work inside the thick concrete walls of a hydroelectric dam.

“We learned that we had to be prepared to issue radios to the first responders, so they could talk back and forth inside the dam,” Robert said. The PUD also installed a 911 channel in its district radio so security personnel could communicate directly with the local 911 dispatch center.

And lastly, Robert noted, the PUD needs to be prepared to send employees “into harm’s way” to guide law enforcement once they enter the hydroelectric plant, which can be more of a maze to those unfamiliar with the layout, and to help keep them safe with all the machinery and high-voltage hazards.

Robert, a former FBI agent and investigator for the Department of Justice, said planned correctly, simulations like the one at Rocky Reach Dam, can be extremely effective learning experiences for law enforcement and the utility.

“You have to prepare for the unthinkable so the unthinkable never happens,” Robert said.

