THE ZETRON ADVANTAGE

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Photo courtesy of Puget Sound Energy.

Puget Sound Energy's Hopkins Ridge Wind Farm is located in Columbia County, Washington. Puget Sound Energy is the second-largest utility generator of wind power in the U.S.

75-position Zetron System Controls Operations at Puget Sound Energy

The installation of a 75-position solution that seamlessly integrates Zetron's Advanced Communications (AcomEVO) system with Tait Communications' MPT 1327 trunked radio network was recently completed for Puget Sound Energy in Washington State.

Most of us take for granted the fact that with the mere flip of a switch, we can turn on the lights, the heat, or any number of devices that make our lives easier and more comfortable. We don't have to think about it because the utility companies that oversee these services are thinking about it for us.

Puget Sound Energy (PSE) is the utility responsible for delivering gas and electrical services throughout much of western Washington State. They provide electricity to more than a million customers and natural gas to 750,000 customers in a 6,000-square-mile area that comprises the largest metropolitan region north of San Francisco and west of Chicago.

Thanks to a recent major overhaul of the radio dispatch communications equipment PSE uses to manage their vast operations, they now have a new, state-of-the-art solution that combines Zetron's Advanced Communications (AcomEVO) console system with Tait's MPT 1327 trunked radio infrastructure. The result is a comprehensive solution that meets narrowbanding requirements, supports PSE's current operations, and provides the flexibility to expand and evolve along with PSE's needs well into the foreseeable future.

PSE's five service groups

PSE's dispatch communications are centralized at its Eastside Systems Operations (ESO) office located in Redmond, Washington.

The center consists of five service groups. On the electrical side, Crew Dispatch sends crews out to handle relatively minor issues— such as connecting a new meter, replacing a fuse, or securing a power line after a car has struck a power pole. Systems Operations manages the lower voltages of PSE's system. The Load Office oversees high-voltage areas such as substations and substation lines.

On the natural gas side, Gas Dispatch mobilizes crews and equipment in response to customer calls for service and gas emergencies such as outside leaks and breaks. Gas Control monitors and adjusts the pressure in the gas lines to ensure gas is flowing properly.

The functions each of these groups manages have the potential to involve varying degrees of danger, especially if they're handled incorrectly. That's why reliable, effective communications are so critical to PSE. And this is, in part, why PSE chose Zetron to participate in their recent communications equipment upgrade.

The power of partnership

Jiri Sykora, a senior radio engineer with PSE, says that PSE's relationship with Zetron dates back to the early 1990s when the utility first installed Zetron's button-based dispatch system. PSE subsequently moved to Zetron CRT-based consoles. Then in 2005, they built a backup center and equipped it with Zetron's first IP-based dispatch consoles.

"Zetron's ongoing partnership with us has been instrumental in helping us move forward with our communications technology," says Sykora. "It has also given us great confidence in Zetron's products and services."

Meeting the mandate

The recent project began when PSE decided to install the equipment necessary to comply with the FCC's narrowbanding mandate. The utility issued a request for proposals (RFP) for the new radio infrastructure, dispatch console system, and mobile and portable radio units narrowbanding would require.

Zetron responded to the console component of the RFP with a bid featuring its AcomEVO communications system. Tait Communications submitted a proposal that included its MPT trunked network and another vendor's console system. Several other vendors also responded, but Zetron, Tait, and another network provider were the vendors that advanced to the next stage.

> **"Zetron's partnership with us has been instrumental in helping us move forward with our communications technology."**
>
> *Jiri Sykora*
> *Sr. Radio Engineer, Puget Sound Energy*

State Radio dispatcher Karlene Holte answers a call.

MAX Dispatch Equips PSAP to Meet the Challenges of Change

With its new IP-based MAX Dispatch system, North Dakota's State Radio Communication System is now equipped to respond to its increasing responsibilities and the demands of the region's recent rapid growth.

North Dakota's public-safety communications are anything but typical.

In most states, local, city, and county agencies provide 9-1-1 call-taking and dispatch services for their respective jurisdictions. But in North Dakota, a state entity—the State Radio Communications System (State Radio for short)—is the hub for much of North Dakota's public-safety communications. It serves as the primary public safety answering point (PSAP) and dispatch center for 24 of 53 counties in the state and provides backup for most of the rest.

Given the scope of these responsibilities, it's easy to see why State Radio requires up-to-date, reliable communications equipment that can support their diverse needs as well as the state's recent, rapid growth. When their existing dispatch system reached the limits of its ability to expand, State Radio went in search of a new system. The Zetron IP-based MAX Dispatch system they installed in the spring of 2013 is providing State Radio with the updated functionality and flexible IP-based platform necessary to support their current and projected operations.

The State Radio Communications System

Located in Bismarck, North Dakota, State Radio has been in some form of operation since 1951. The 4,000 users currently on the system represent 87 local, state, and federal agencies.

Partly due to a major oil boom in northwestern North Dakota, State Radio's responsibilites are expanding—and rapidly. From 2012 to 2013 alone, their computer-aided dispatch (CAD) events increased nearly 14 percent.

In order to accommodate this change and ensure reliable coverage for all of the areas they oversee, State Radio recently determined that they would need to add a significant number of new radio towers to their system. But their dispatch equipment was being used to capacity. It was clear that the agency would need to obtain a new dispatch system if they were to undertake the expansion their circumstances were beginning to require.

Defining core requirements

Before launching into the purchase of a new system, State Radio performed a thorough needs assessment. They then issued a request for proposals (RFP) for a new dispatch system that would address the core requirements the assessment helped them define.

"Our RFP called for a system based on IP," says State Radio director, Mike Lynk. "It would have to be adaptable, expandable and able to support additional towers. We also wanted a system that would allow us to control operations from our backup site."

Zetron's flexible, IP-based MAX Dispatch supports easy expansion, resource sharing across systems, and increased mobility and remote options. It also provides an easy, cost-effective migration path from legacy to emerging technologies.

- **Streamlined UI:** Displays information pertinent to the task at hand. Reduces clutter. Minimizes operational steps.
- **High reliability:** End-to-end network redundancy keeps the system up and running even if the IP network goes down.
- **Easy installation and maintenance:** Continuously monitors network performance. Supports remote configuration and maintenance.
- **Flexible, scalable:** Utilizes centralized and distributed architectures. Scales from a single LAN to a multi-node, geographically diverse WAN. Adapts to evolving technologies.

This last point was critical. Communities throughout North Dakota could be seriously affected if State Radio ever had to vacate their center and were unable to continue operations from a backup location.

IP, interoperability…and more

Of the vendors who responded to the RFP, several emerged as serious contenders, including Bismarck-based Electronic Communications Inc. (ECI) with their bid based on Zetron's MAX Dispatch system.

"After a process that involved numerous amendments, meetings, presentations, and question-and-answer sessions," says ECI president, Marshall Pudwill, "we were awarded the contract."

"ECI's proposal met our criteria and came in at the best price," explains Mike Lynk. "The MAX system is IP-based and would support our tower expansion. Another key factor is that MAX is highly interoperable. Not everyone in the jurisdictions we serve uses the same technology—especially when it comes to paging. Some use phone paging, some use radio paging. The MAX Dispatch would be able to support all of those pagers on one system."

The project begins

The first phase of the project involved installing the MAX Dispatch backroom equipment in parallel with State Radio's existing system and setting up eight MAX Dispatch positions.

"At State Radio, each console is assigned a particular geographical area," says Pudwill. "We set up the positions, then switched them to the new system one at a time and according to the geographical region each one handles. Once this was done and everyone was comfortable with the new system, we dismantled the old system and removed it."

IP all the way

The next phase involved moving State Radio over from their copper wireline connections to IP.

"When we first moved State Radio to their new console system, they were still using leased copper wirelines to connect the consoles to the towers," says Pudwill. "The next stage involved moving 75 MAX Dispatch modules out to the 37 tower sites located throughout North Dakota. This would allow them to abandon the wirelines and connect over IP all the way from the consoles to the transmitters at each of the tower sites. We made this switch three towers at a time; it took about four months."

'Greater flexibility to respond and adapt'

The system went live in June of 2013. Mike Lynk says that, in addition to meeting their requirements, the system allows them to do things they were never able to do before.

"Each position typically handles traffic from several towers in a particular area of the state," he says. "With the MAX Dispatch system, if an incident is generating a lot of traffic to a position, we can customize profiles on the fly and reroute some of the tower traffic so the dispatcher is handling only the towers associated with that incident. This gives us greater flexibility to respond and adapt to incidents as they occur."

Kudos for ECI

When asked how the installation process went, Lynk says that he's very pleased to have been able to work with ECI on the project. "I can't say enough good things about ECI," he says. They're so responsive. It doesn't matter if it's an equipment question, a training issue, or it's one in the morning. They are really there for us."

Looking forward

State Radio already has plans to increase their number of tower sites from 37 to 46 by the end of the year. And in addition to the eight console positions installed at their main center, they have eight more laptops ready and waiting to be set up at their backup site. MAX Dispatch will not only support them in these efforts, but in any further expansion they might require. The system is well suited to an agency that must be able to plan strategically for the future, even as they respond moment by moment to events on the ground.■

Combined MAX Dispatch/Call-Taking Delivers Small Footprint, Big Benefits

The Zetron MAX Dispatch and MAX Call-Taking systems recently installed at the new Huntington Indiana Central Dispatch center are being praised for their clean design; ease of use; and compact, combined footprint.

A local commissioner deemed it "a historic event" when, after many years of considering consolidation, the City and County of Huntington, Indiana, finally decided to combine their two separate public safety answering points (PSAPs) into a single center.

There were many good reasons to do this. Consolidation would allow them to centralize their communications, combine their staff, and purchase and maintain equipment for one center instead of two. It would also save both agencies an estimated $300,000 in 2014 alone.

The Huntington Central Dispatch center that resulted from this decision went live in October of 2013. Equipped with Zetron's IP-based MAX Dispatch and MAX Call-Taking systems, it is now a fully functioning consolidated operation that is well positioned for the future. It has also become a great source of pride for all of those involved in the project.

City and County of Huntington

Prior to becoming the first director of Huntington Central Dispatch, Melissa Farthing was a dispatcher herself, working full-time for the county and part-time for the city. So she understood the basic workings and responsibilities of both PSAPs.

"Before the consolidation, the police department provided 9-1-1 call-taking and dispatching for the City of Huntington," she says. "The sheriff's department did the same for its own personnel, other county agencies, and the remaining municipalities in the county."

Farthing says that it was a convergence of personnel and positive circumstances that finally brought the consolidation about.

"The police chief, sheriff, and mayor were all on board and gave the project their support," she says. "State funds were also available that would allow us to equip the new center with new, IP-based equipment rather than having to use our equipment that was 12-years old and whose warranties were about to expire."

'There when we need them'

Once the decision was made to consolidate, specifications were defined, and the project to equip the new center went out for bid. Zetron reseller J&K Communications responded with a strong proposal featuring Zetron's IP-based MAX Dispatch and Call-Taking systems.

Headquartered in Columbia City, Indiana, J&K had been the city's and county's equipment provider for several decades. "We have a very good relationship with J&K," says Farthing. "They're honest, responsive, and there when we need them."

A single-vendor solution

Zetron's reputation and the equipment itself strengthened J&K's proposal. Both the city and county had used Zetron's Series 4000 dispatch system for many years and were happy with its performance, so they trusted Zetron and its products.

The MAX systems also constituted a single-vendor solution. "In the past, we've had to call different technicians to service our different equipment," Farthing explains. "With the MAX systems, we'd have just one vendor to call for everything."

J&K was awarded the project. The installation would include five positions each of MAX Dispatch and MAX Call-Taking as well as several remote call-taking positions at a local hospital. It would also support remote backup positions if Huntington ever wanted to use them.

'They all stepped up'

The new center was to be located at what had formerly been the sheriff's dispatch office. But the room had to be gutted and remodeled before the new equipment could be installed.

To facilitate this process, both agencies' operations were moved temporarily into the city dispatch center. The city and county dispatchers worked together there for nine months before moving to the new center.

Farthing says that this was a blessing in disguise.

"No one knew whether the two groups would be able to work together, especially in this small space," she says. "But they all stepped up to help and cross-train each other. They got to know their new responsibilities before having to learn the new equipment. This worked very well. I'd recommend this approach to anyone who's considering consolidation."

Dispatcher Angie Scher monitors multiple screens at Huntington Central Dispatch.

> " Because MAX Dispatch and Call-Taking share a single computer, they take up less space at each position. "
>
> *Melissa Farthing,*
> *Director, Huntington Central Dispatch*

Meanwhile, back at the new center…

While normal dispatch and call-taking operations continued at the temporary site, the new center was taking shape.

"We tore down and removed the old equipment so the contractors could remodel the room," says J&K systems director, Jim Bowers. "Once they were done, we came in and put in the new equipment."

He says that the installation included integrating the dispatch equipment with a number of different analog and digital networks.

"We connected MAX Dispatch to Indiana's SAFE-T trunking system," says Bowers. "We also integrated it with the fire department's analog VHF network, the schools' VHF network, and the county highway department's digital NEXEDGE® system. This gives the PSAP great interoperability with agencies throughout the region and state."

Making the screens familiar

Another important aspect of the implementation involved setting up the console screens with icons, colors and naming conventions similar to those on the previous equipment.

"J&K knew how we'd named our channels and set up our screens before," says Farthing. "So they were able to configure the MAX screens to look like those on our previous system. This made learning the new equipment a piece of cake."

Training and transition

Over a period of about a week, J&K provided hands-on training to groups of three to four dispatchers at a time. A console was also set up so dispatchers could practice with the new equipment on their own. By the time everyone moved into the new center, they were well acquainted with their new responsibilities, the equipment, and each other.

"The transition was very smooth," says J&K sales manager, Ted Hurley, "even from the first day."

A model for other counties

Huntington Central Dispatch has been up and running for about four months. Farthing says that the longer she and her dispatchers use the equipment, the better they like it.

"It's clean, compact, and easy to use," she says. "Because MAX Dispatch and Call-Taking share a single computer, they take up less space at each position. Our dispatchers really like the control they now have over their screens. And I'm very happy with the new equipment's administrative features. I can input a change only once, and it propagates through the entire system. And the MAX Call-Taking reporting feature gives me easy access to all kinds of call statistics. This not only provides information about particular events, but helps me track trends over time."

"I have a great staff, a great center and great equipment," Farthing adds. "We're all very proud that our center is serving as a model for other counties that are on the verge of change.■

Zetron's new MAX Call-Taking gives you the solid reliability and performance you expect from Zetron in a breakthrough, Next Generation 9-1-1 system. MAX Call-Taking is SIP-standards-based, ready to meet i3 industry standards and scalable for multiple PSAPs.

- State-of-the-art UI
- Skills-based routing
- Automatic Call Recovery
- IP-based flexibility
- Stand-alone or hosted design

75-position Zetron System Controls Operations at Puget Sound Energy

continued from front page

Photo courtesy of Puget Sound Energy.

The view of Mount Rainier from PSE's offices.

Acom EVO
Advanced Communications System

Features:

- Flexible architecture.
- Supports P25 CSSI and DFSI.
- Efficient, intuitive, configurable user interface.
- Access to PSTN and PABX.
- Radio dispatch for up to hundreds of operators.
- Hotlines, intercom, and public address.
- Network (LAN/WAN) interfaces and protocols.
- Voice-over-IP (VoIP).
- Trunked-radio interfaces and protocols.

"Our dispatchers and project teams reviewed Zetron's console system and the console system included in Tait's bid," says Sykora. "They liked the Zetron console best because it's so flexible and easy to use. We also liked Tait's MPT network. So we asked Tait to redo their proposal based on their infrastructure and Zetron's AcomEVO system. We told them that if we liked the bid at that point, we'd sign off on it. And that's what we did."

The solution PSE chose included Tait's MPT 1327 trunked radio infrastructure and two fully redundant AcomEVO systems with 75 console positions that would be installed in PSE's main and backup centers and at remote locations throughout the Puget Sound region.

A four-phase installation

Sykora says that because of the project's scope, it was completed in four phases. "For the first phase, we installed a fully redundant AcomEVO system in the main center that would mimic the existing system," he explains. "The Acom system was connected to PSE's legacy radio infrastructure. Tait's MPT infrastructure was also installed, but we didn't switch over to it at this stage."

"The second phase involved setting up in PSE's Backup Control Center a near-mirror image of the AcomEVO system we'd just installed in main center," he continues. "We also transitioned to the new MPT system. This was very easy. Because everything was in place, all the dispatchers had to do was switch to a new screen. For the third phase, 13 fully functional remotes were set up at PSE's nine sites located throughout Western Washington, from Bellingham to Olympia. And for the fourth and final phase, consoles for Gas Dispatch and Gas Control were brought online."

The elements of success

Despite the project's complexity and tight deadline, it was completed on time and on budget. "Everyone involved really pulled together and did a great job," says Zetron project manager, David Christy.

Veteran PSE engineer Robert Holt concurs. "Zetron was very good to work with," he says. "They listened to what we needed, then provided it."

The ease with which dispatchers adopted the new console equipment was yet another element of the project's success. "We were able to design the Acom screens to mimic our old ones, so our dispatchers would be able to continue to react instinctively and automatically," says Sykora. "This is especially important during an emergency."

The system also offers benefits PSE administrators hadn't anticipated. For example, it will allow them to integrate phones onto the console screens—an option they're currently considering. And because AcomEVO is modular, they will be able to expand it easily as they grow. AcomEVO's remote command-and-control capabilities will also allow PSE to run their system over laptops or PCs if the situation ever warrants it, giving them even greater flexibility to respond as circumstances dictate.

Regardless of how PSE utilizes the rich options their new AcomEVO system offers, it's clear that it has updated and strengthened PSE's communications capabilities and paved their way to the future. It has also added yet another success to PSE's ongoing partnership with Zetron. ■

UPCOMING TRADE SHOWS

GA ECC
March 10 - 11, 2014 | Athens, GA

IWCE
March 26 - 27, 2014 | Las Vegas, NV

Maine NENA
April 2, 2014 | South Portland, ME

Pennsylvania APCO
April 6 - 9, 2014 | Lancaster, PA

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For Zetron factory training, please contact Zetron before scheduling as dates are subject to change.