

UPDATE

OCTOBER - DECEMBER 2005

Southwestern Coordinates Efforts to Restore Power After Hurricane Rita

The efforts of the Southwestern Power Administration helped to bring power back to the people of southeast Texas sooner than expected following Hurricane Rita's devastating landfall on September 24, 2005.

The killer storm downed hundreds of thousands of trees in the region and left thousands of people and businesses in Jasper County and surrounding areas without electricity and telecommunications, isolated from the rest of the power grid due to an outage of a critical transmission feed line from Entergy. More urgently, a hospital, water treatment plant, police departments, and other critical services were without the power they needed to respond to the disaster.



Photo Courtesy of NASA.

HURRICANE RITA PASSED OVER JASPER, TX AND SAM RAYBURN DAM ON SEPTEMBER 24, 2005.

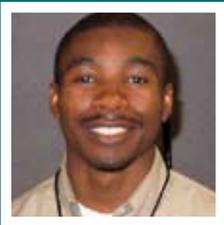
At the request of Jasper-Newton Electric Cooperative (JNEC) and the City of Jasper, Texas, Southwestern coordinated efforts between them and the Vinton Public Power Authority, Sam Rayburn Dam Electric Cooperative, Sam Rayburn Dam Municipal Authority, and the Fort Worth District of the U.S. Army Corps of Engineers (Corps) to help restore power to over 20,000 customers and residents in the affected areas using Sam Rayburn Hydroelectric Powerplant (Rayburn), a Corps-operated facility located in north Jasper County.

Normally, Rayburn is used only to provide peaking power to Southwestern's customers in that area. The emergency plan, however, called for a system restoration that would have Rayburn providing round-the-clock electricity for critical services



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Good Communications Diet Includes Fiber

The future is coming to the 120-mile stretch between Weleetka, Oklahoma, and Denison, Texas. Crews from the Gore maintenance office, with help from Jonesboro and Springfield crews, are nearing completion on the fiber optic component of Southwestern's new communications network which, when finished, will connect facilities and improve communications across the entire transmission system.

Crews have been replacing regular shield wires with lines since 1993, starting in the Jonesboro service reaching Gore in May 2005. The Weleetka-Denison to be installed. The fiber cable, or Optical Ground same lightning protection as the old shield wire, but data communications. The fiber along this section of line installed and spliced by June 2006.

The new communications network, which consists primarily of fiber, some digital microwave (DM), is replacing Southwestern's analog "Using OPGW leverages our existing transmission line infrastructure reliable method of communication among all of our facilities," says Electrical Engineer Jerry Ferguson, who is the project manager overseeing tion. In short, fiber is more reliable, carries more data, and provides complete Ferguson, noting that Denison was not even directly incorporated into the older

The main advantage of the new system, according to Southwestern Electronics Danny Johnson, is that it sends data over a digital medium, which increases and reduces costs. "The big difference is that Ethernet is now available over private system as opposed to when we had to [telephone] circuits at over \$1,000 per month each offices together," says Johnson. "Ethernet allows Southwestern to cut its data acquisition costs, and also provides access at the stations to CADD drawings, switching orders, and emails, something that has proven very beneficial."



IMPROVED RELIABILITY AND THE ADDED BENEFIT OF INCREASED COMMUNICATIONS CAPABILITY HAVE DRIVEN THE OPGW PROJECT SINCE ITS INCEPTION IN 1993.

fiber on Southwestern's transmission area, moving on to Springfield, and section of fiber is one of the last Wire (OPGW), provides the is also capable of high-speed is scheduled to be fully

but will also include microwave network. to provide a more Southwestern the fiber installa- coverage, says system.

Engineer efficiency our lease to tie the

Additionally, the new system has the capacity to support other organizations, such as the U.S. Army Corps of Engineers. "The Corps is moving much of its hydro-power communications over to Southwestern's system, which is helping to reduce the cost of operating the Federal power system," says Johnson.

According to Southwestern Construction Inspector Ken McGuire, who works out of the Gore maintenance office, the new digital microwave infrastructure in the Gore service area won't be installed until after the fiber is operational. Geographically, the DM will complete a "ring" northeastward from Denison through Broken Bow to Southwestern's Van Buren substation in Arkansas. Network rings provide redundancy: if communication in one direction fails, the system automatically routes information in the other direction around the ring.

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Safety In Numbers



WORKING FOREMAN TONY COCHRAN SPORTS A FALL ARREST SYSTEM TO ACCOMPLISH HIS WORK SAFELY.

“Safety first.” It’s a familiar motto regarding caution and common sense in the workplace. But at Southwestern it’s more than just a saying: it’s a principle that gets put into practice every day, especially out in the field, with impressive results.

As of the end of October 2005, Southwestern’s Recordable Accident Frequency Rate (RAFR) for 2005 was only 1.46. This rate is significantly below the electric services industry average of 3.7, as published by the National Safety Council for 2004, as well as below Southwestern’s own internal goal of 3.3 that is stipulated through the agency’s Achievement Improvement Measurement (AIM) Program. The RAFR represents, per 200,000 hours worked (or 100 full-time employees per year), the number of work-related incidents resulting in either a day away from work or the use of a prescription medication.

In addition to featuring another low RAFR for Southwestern, 2005 also marks the thirteenth year – over four million man-hours worked – without a single electrical-related recordable accident. All of Southwestern’s incidents for this period have primarily been either soft tissue injuries, such as pulled muscles, or reactions to tick bites, says Dallas Cooper, Assistant Administrator of Southwestern’s Office of Corporate Facilities Services.

“We place a strong emphasis on teamwork and a community sense of safety,” says Cooper, who is not at all surprised at Southwestern’s outstanding performance. “Safety is number one.”

Southwestern’s RAFR has dropped dramatically since the early 1990’s, and Cooper attributes the change to several factors. “It’s a combination of employee recognition for safe work, employee responsibility for safety presentations, a fairly conservative approach to performing maintenance, well-written procedures, good equipment, and management’s focus on injury reduction,” he says, adding, “We’ve been very aggressive about reducing things that create the opportunity for injury.”

Darlene Low, Special Assistant for Aviation, Environmental, Safety & Health, agrees. “We’ve been seeing improvements over time,” she says, noting a much greater awareness of proper lifting techniques and other preventive practices out in the field, as well as increased attention to ergonomic considerations in office settings. Southwestern continually emphasizes good work practices to its employees through on-site training classes as well as monthly safety meetings that address required training subjects.

Southwestern’s success in reducing its accident rate is all the more remarkable given that the agency’s fieldwork has increased in recent years, including fiber expansion projects, switchyard maintenance for the U.S. Army Corps of Engineers, and widespread system restoration efforts following a dangerous ice storm in 2000 – which, coincidentally, was the year that the agency’s RAFR was actually zero. In 2003,

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Hurricane Heroes - Pascagoula Recovery

Following the devastation of Hurricane Katrina on August 29th, Jimmy Isaacs, Equipment Operator in the Springfield Maintenance Office, spent a week involved in recovery efforts in and around Pascagoula, Mississippi. He made the harrowing trip in order to help family, and made a difference in the lives of many people in the community.



BY JIMMY ISAACS

My wife has many relatives in the Pasca-goula and Gulfport areas of Mississippi, so we had been watching the path of Katrina religiously and keeping in touch with family members daily. The last contact we had was approximately 10 p.m. Sunday evening as the storm was just starting to hit. We didn't hear from anyone again for almost two days.

Late Tuesday [August 30], after hearing news about the devastation, we started making plans to help. My wife, a registered nurse, was unable to get away, so we decided that I would go by myself. We weren't really sure how I was going to get through, but I felt the need to try.

By Thursday, the truck bed and back seat of my 4x4 Toyota Tundra were loaded with donations from our church and friends, including all the water and canned goods I could haul and two 55-gallon drums. Friday morning, my wife and I filled the 55-gallon drums with gas, shared a brief prayer, and then said our good-byes. It was very emotional, as we did not know what lay ahead. But we knew for certain that people were in need, and that is what our family has always held important: helping others.

The long drive to Jackson was not too bad. But when I got there, there was no fuel to be found and no power. I stopped outside of Hattiesburg and filled up with gas from the barrels I was hauling.

In Hattiesburg I began seeing the first signs of devastation. There were power lines and trees down everywhere. Roofs had blown off of houses and people were walking because they had no gas. I had to dodge a lot of debris in the road. As I went further south, it was apparent that this was going to be much worse than I had ever imagined. There was stuff everywhere. I call it "stuff" because it was hard to identify what things were. There were tires, cars, rooftops, and even a water tower in the middle of the highway. People walking, lots of cars, and just stuff everywhere. I was getting nervous that someone might try and stop me to take what I had. But it never happened.

Finally I reached my family. When I knocked on the door I was greeted by my cousin's young son, who had gone into a depression after Katrina. But when he saw me standing at the door he came to life. He began shouting, "Mom! Dad! Mr. Jim is here! Mr. Jim is here!" None of them had any idea I was coming.

Saturday morning we went to my family's church and started unloading trucks full of supplies. There were already people waiting. People had been staying there since the storm hit and were awaiting help and news of loved ones. By that evening we had unloaded five or six semis.

When my uncle and I drove out to find other family members and drop off the supplies I had brought, it was my first good look at the devastation. Piles of rubble were everywhere. Churches were gone. Grocery stores were gone or flooded, or empty. Stores were closed, banks were closed, and there were no functioning ATM machines. Recovery workers were without gas and parts, and if you could get anything it was because it was given to you or you just happened to have some cash in your pocket. Motels were full; at least, the ones that were still standing.



THE EYE OF HURRICANE KATRINA TRACED A PATH RIGHT BETWEEN NEW ORLEANS AND PASCAGOULA.

Photo Courtesy of NASA.

I saw one couple living on the roof of what was left of their home. They had a makeshift ladder made out of scraps and pulled it up at night so they wouldn't be robbed, and they were sleeping under a tarp. They had no food, no water, and they had children. They were protecting what little was left of their home and life. I gave them water and food. But they were just one of many families that were without, and had stayed to protect what they had worked so hard for.

On Sunday morning I went to church with my family. There was no sermon, just the testimonies of those who were grateful to be alive. I saw many congregations holding services outside because their churches were destroyed. Rich and poor were all the same now, just trying to survive and help each other. Afterwards we all went back to unloading trucks, helping to serve meals, etc. Unloading trucks was an everyday thing. Most people were very thankful and gracious about the help they were receiving. I even had one gentleman want to kiss my feet for bringing him water and food.

On Monday we went down to help at the beach area where all of the fancy homes were. It was gone. Some trees and piles of rubble were marked with red paint where survivors had been found and needed to be helped. Others were marked with black paint where the bodies of the deceased had been found and needed to be picked up.

At the local grocery store, we helped remove spoiled meat with a backhoe. The stench from the meat and bad water was horrible and nearly unbearable. We wore masks and boots and gloves that my wife had sent, but there were people wanting to dig through the spoiled food and take it to their families. We had to keep saying no all the time. That kind of stench was everywhere. The town stunk so badly and the air was full of mildew and rot smell. I will never forget that smell.

One afternoon I made a couple of trips to Mobile, Alabama, in order to pick up some hoses for backhoes and trucks, plus hazard suits and masks for clean-up. It was very difficult to get around, as many roads were closed, even the Interstate, due to cracks in the pavement and debris from buildings. I have never in my life seen such devastation. Power lines were down and there were dead animals everywhere. Snakes were abundant, as they had nowhere to go. A 21-foot alligator was caught just outside my family's church. People were everywhere working and trying to retrieve all they had left. They would pile stuff up in their yards, even some of the most trivial trinkets. You could see they were so lost and had no idea what to do first.



Photo Courtesy of U.S. Geological Survey.

PASCAGOULA, MISSISSIPPI, ON THE COAST OF THE GULF OF MEXICO, WAS DEVASTATED BY HURRICANE KATRINA.

to take a break. I could see that she was very tired and exhausted, and teary-eyed at times. I found out a short time later that even while she was working her hardest to save lives, her very own daughter was dying in the same ER. It still brings tears to my eyes when I think about it.

It was a long road home. The drive gave me plenty of time to reminisce on the events of the week and on how thankful I was to still have my family, and on how blessed I am to have been able to help. 💧

I've never been one to shed a lot of tears; however I shed my share while there. Believe me, you couldn't look around and not get emotional. FEMA [Federal Emergency Management Agency] and National Guard everywhere. Rescue dogs sniffing for bodies. Neighbor helping neighbor. People from all over the United States there to help. I was filled with pride as I met several people from right here in Missouri who had driven down to help in any way they could. The bravery and selflessness of people was remarkable.

At the local emergency room, where I was waiting while my uncle got treated for a minor injury, I noticed a nurse who came outside several times

MOA Funds Critical Work at Truman



MONOLITH JOINTS AT TRUMAN DAM GET AN UNDERWATER TUNE-UP ON THEIR UPSTREAM FACES.

ization activities at Corps hydroelectric facilities. As many of these facilities approach 40 or more years of age, unplanned equipment failures can occur more frequently, and the Corps' increasingly sparse appropriations make it difficult to avoid prolonged outages. The MOA provides supplemental funding in order to reduce or prevent these outages, allowing the Corps to continue to provide reliable service.

While the MOA is specifically with Jonesboro, it involves all interested customers in the decision-making process. Individual repair and maintenance projects are approved for MOA funding each year by the Rates Subcommittee of the Southwestern Power Resources Association (SPRA). SPRA represents over 90 percent of Southwestern's customers.

Truman's monolith joint leaks were a prime candidate for MOA funding. Monoliths are the massive concrete blocks, formed by a single pour, which form each portion of a dam's structure. While the joints between them are expected to leak a certain amount, excessive inflows can jeopardize powerplant operations inside the dam.

According to Andrew Lachowsky, Chair of SPRA's Rates Subcommittee and Principal Planning Engineer at Arkansas Electric Cooperative Corporation, Truman's critical situation prompted the Subcommittee to add it to the MOA list in fiscal year (FY) 2004 rather than risk waiting for future appropriations. An independent architectural engineering firm had already determined that leakage at three monolith joints – totaling 400 gallons per minute (gpm), and increasing – was close to exceeding the lower gallery sump pump capacity and would eventually become uncontrollable, causing powerhouse flooding and extensive outages. "Even though the monolith repair at Truman is a 'joint use' work item, encompassing both hydropower generation and flood control, we decided to provide funding for the entire repair project," says Lachowsky.

The work, completed in March 2005, involved mitigating leaks around stoplogs, underwater cleaning of the upstream faces of the monolith joints, and pressure injection grouting. Combined leakage across the three joints was dramatically reduced, down to 26 gpm in April 2005, and only 3 gpm in August 2005. Weekly

The prospect of water pooling across pumps, generators, and gallery floors was only half of the problem faced at Truman Powerplant two years ago as monolith joint leaks raised the specter of an outage. The other half was finding a way to pay for repairs. Fortunately, that kind of situation is precisely what the 1999 Memorandum of Agreement (MOA) among Southwestern, the U.S. Army Corps of Engineers (Corps), and City Water and Light Plant of Jonesboro, Arkansas (Jonesboro), one of Southwestern's customers, was designed to address.

The MOA and several separate agreements allow Southwestern's customers to directly fund non-routine maintenance, rehabilitation, or modern-



WORKERS SUIT UP TO TAKE THE PLUNGE FOR LEAK REPAIR.

monitoring is being performed by the Corps to ensure that leakage rates do not increase significantly during the winter months when the joints widen due to colder lake temperatures.

"This project was successful in that everyone worked together to come up with a funding alternative that allowed us to complete the repair work," says Pete Hentschel, Mechanical Engineer in the Operations Division of the Corps' Kansas City District. "It is evidence of the great working relationship the Corps, Southwestern, and Southwestern's customers have with each other." 💧

SPARKS OF INTEREST

THE NEXT QUARTERLY MEETING OF THE SOUTHWESTERN POWER RESOURCES ASSOCIATION (SPRA) will be held January 10-12, 2006, at the Embassy Suites Hotel in Tulsa, Oklahoma. In addition to SPRA's regular committee meetings, a special "Rates Methodology 101" session will be held at 8:00 AM on January 10. For registration and meeting information, contact Barbara DelGrosso, SPRA's Director of Member Services, at 918-622-7800 or bdg18@sbcglobal.net.

RITA FROM PAGE 1 –

from one of its generators until regular service could be reestablished. This kind of "island" approach – where a generating source and its load (consumption) are isolated from any other power grid – requires careful planning and execution to avoid damage to system infrastructure. Load must be added gradually in order to maintain stability, and much credit goes to the Corps' staff at Rayburn Powerplant, and the local crews and dispatchers, in making this happen.

The system restoration began on October 1, 2005, after JNEC confirmed the integrity of the necessary transmission lines. Southwestern continued to monitor progress as local crews energized the lines through the City of Jasper to the Kirbyville Substation, adding critical loads up to a total of approximately 2 megawatts (million watts). Rayburn's generator maintained stability with good voltage and frequency control throughout the process.

By the end of the day on October 2, Texas Utilities was able to repair and connect transmission lines in the area. The Electric Reliability Council of Texas (ERCOT) energized a line to Rayburn, and the Corps transferred load to ERCOT in order to provide increased system restoration and stability for customers. Rayburn then synchronized its generator to ERCOT's system to provide ongoing voltage support as needed.

According to Bethel Herrold, Lead Hydraulic Engineer for Southwestern, the operation was a huge success in getting critical services up and running sooner rather than later. He had nothing but praise for the crews on the ground in Texas. "All the hard work was done down there at JNEC and the City of Jasper, making sure the lines were clear and the loads were balanced," he says. "The Sam Rayburn Powerplant people and the local cooperatives and cities did an excellent job in getting power up and going for the community." 💧

COMMUNICATIONS FROM PAGE 2 –

McGuire is highly complimentary of the Gore line crews – "They were responsible for 90% of the installation," he says – and also appreciates the assistance from the Jonesboro and Springfield maintenance crews, emphasizing the professionalism of all the crews who are sagging, clipping, splicing, and wiring the fiber. "It's a joint effort. Nobody's job is more important than the next guy's," he says, noting that the work is being done expertly and on-time. "Anything I can say would be a Thank You to all the members of the crews and the engineers." 💧

SAFETY FROM PAGE 3 –

Southwestern received an Electric Utility Safety Award from the American Public Power Association (APPA) for having the lowest RAFR among similarly-sized utilities.

Administrator Mike Deihl applauds all of Southwestern for maintaining its exemplary safety record. “I think Southwestern’s staff is one of the best, if not the best in the utility business,” he says. “They complete a tremendous amount of work, sometimes in very hazardous conditions, but always in an incredibly safe manner. I couldn’t ask for better people!” 💧

NEW EMPLOYEES

TAMARA MORENO, CONTRACT SPECIALIST
DIVISION OF ACQUISITION & FACILITIES SERVICES, TULSA, OK

RETIREMENTS

MARIELLA ROSE, HUMAN RESOURCES SPECIALIST
DIVISION OF HUMAN RESOURCES MANAGEMENT, TULSA, OK



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