

24/7

2020 ANNUAL REPORT





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Milton Cowan	Shelly Pesak
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 GE Gas Power
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 Jackson & Ryan Architects
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 Optimum Energy
 Stanley Consultants
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 Westerlund Communications Inc.
 Willis Tower Watson

Dr. Richard E. Wainerdi, a tribute

March 17, 2021, marked the passing of Dr. Richard E. Wainerdi, president and CEO of the Texas Medical Center from 1984-2012. Dr. Wainerdi led the Texas Medical Center through an era of unprecedented growth and recognition. His passion for the Texas Medical Center was equal to his commitment to TECO. He was a long-time TECO champion, recognizing the mutual benefit TECO brings to all institutions on the TMC campus. In 2013, we named our flag plaza in his honor to recognize his unwavering support for TECO, his love of country and his Texas Medical Center leadership. Dr. Wainerdi's devotion is commemorated on TECO's timeline wall, which includes a quote from his book, *Richard E. Wainerdi and the Texas Medical Center* by William H. Kellar: "[The Texas Medical Center] isn't just a place or a company, it is an idea that somehow you can work together for a common good."

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TECO Board of Directors
Representative
Texas Medical Center
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Terry Hull
Associate Vice Chancellor
for Finance & Treasurer
The University of Texas System



Russ Korcuska*
Vice President, Facilities
Engineering and Construction
Memorial Hermann
Health System



Ben Melson
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MD Anderson Cancer Center



Barry Nelson, Ph.D.**
Vice President for Finance
and Administration
The Texas A&M University
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Robert Ramirez
Associate Vice President,
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Texas Woman's University



Howard Tellepsen, Jr.
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Baylor St. Luke's Health
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Tellepsen



Stephen K. Swinson, PE
President and
Chief Executive Officer
Thermal Energy Corporation

President and CEO

Alternate Directors

Bill Bussman
Assistant Director,
Facilities Operations
Texas Woman's University

Bert Gumeringer
Vice President,
Facilities Operations
Texas Children's Hospital

Rayellen J. Milburn***
Senior Associate Vice
President for Finance
& Controller
The Texas A&M University
Health Science Center

Dan Sharporn, JD
Vice Chancellor and
General Counsel
The University of
Texas System

* Russ Korcuska has been replaced by Alec King for 2021.
** Barry Nelson, Ph.D., retired from The Texas A&M University
System Health Science Center December 31, 2020.
Jeffery Burton replaces him on TECO's Board for 2021.

Denise Castillo-Rhodes
Secretary
TECO Board of Directors
Chief Financial Officer
Texas Medical Center

Michael Hatton
Vice President of System
Facilities Engineering
Memorial Hermann
Health System

Spencer Moore
Vice President and Chief
Facilities Officer,
Facilities Management
The University of Texas MD
Anderson Cancer Center

William "Wes" Stewart
Vice President, Facilities
Planning and Engineering
The University of Texas
Health Science Center at
Houston

*** Rayellen Milburn retired from The Texas A&M University
System Health Science Center December 31, 2020.
Her replacement will be announced.

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THERMAL ENERGY CORPORATION

THE ENERGY BEHIND WHAT'S NEXT

Mission: Provide reliable and economical thermal services to the institutions of the Texas Medical Center.



To our customers and friends in the Texas Medical Center and our energy industry colleagues

Our stories are your stories.

All of us had to find new ways to do what we do when the COVID-19 outbreak was declared a pandemic in March 2020.

For Thermal Energy Corporation (TECO) that meant sending all but essential workers home while maintaining 24/7 chilled-water and steam service to customer institutions on the Texas Medical Center campus.

Many of our customers were on the proverbial front line caring for COVID and non-COVID patients and facing some of their greatest-ever challenges. Yet they still found time to lend TECO a helping hand, providing us with invaluable medical-based guidance on COVID-proofing the workplace. Plus, when we were running low on hard-to-find personal protective equipment (only 12 masks left in the pandemic's early days), they hand-delivered masks for our workers on site.

In our 2020 annual report – “24/7” – we share more behind-the-scenes, pandemic-era stories from TECO and our customers. As you will read, Texas Medical Center institutions developed insightful solutions – even beyond daily shifts – to dilemmas that formed in the face of crisis. And TECO and our employees adapted to make sure all customers were served around the clock as we kept a watchful eye on coronavirus protocols.

Indeed our employees stepped up and came through when faced with a new environment and new challenges. We always appreciate them – and their families – but never more than in this moment, at this historic time. Thank you.

So, too, are we grateful for our customers. From the Texas Medical Center itself to the leaders, physicians, nurses and maintenance workers of customer institutions, all came together in unprecedented

ways. Their track record of excellence is known and revered, but their accomplishments during the pandemic raised the bar even higher.

During the beginning of the pandemic, these customers faced dire financial straits. Elective medical procedures had been put on hold, greatly affecting their revenue stream. In response, TECO's Board of Directors voted to not invoice customers for their April 2020 chilled-water and steam service. That amount became an immediate customer rebate totaling \$6.2 million. We thank the Board for championing the cause.

As the fiscal year came to a close, TECO issued another rebate, with a total of \$9.3 million more returned to customers. We hope in some way we helped ease the burden as health care professionals gave their all to care for and save the lives of our friends and neighbors.

While COVID did not disappear as we entered 2021, another event temporarily overshadowed its presence: A record-setting winter storm hit Texas in mid-February. In spite of massive power outages elsewhere, TECO used our combined heat and power system to generate enough electricity to serve our own plant and more.

2020 may be behind us, but in the 2021 annual report, we will have even more stories to tell.

Stephen K. Swinson, PE
President and
Chief Executive Officer

Bradley N. Howell
Chairman

“Every member of our community plays a significant role in the fight to end the spread of COVID-19. The lives of Texans are in our hands. Together, we must do everything humanly possible to protect our patients, our families, our region and ourselves. Houstonians have always united to face formidable challenges, and we will persevere in the days ahead. We must stand apart and work together.”

William F. McKeon, President and Chief Executive Officer, Texas Medical Center - July 2, 2020

Battling the COVID-19 pandemic.

Providing compassionate care.

Pursuing life-changing research.

Educating tomorrow's medical professionals.

Driving innovation.

The Texas Medical Center never sleeps.

24/7

Neither does TECO.



Texas

Playing
pivotal role
throughout
pandemic

Medical Center

As families and friends gathered for the holidays in late 2019, few were aware of the risks posed by a coronavirus halfway around the world. That changed as the virus – and the news – rapidly spread. Health officials were put on alert, including those at the Texas Medical Center.

In January 2020, under the direction of Texas Medical Center President and CEO William F. McKeon, leaders of TMC institutions began meeting daily to evaluate the threat and recommend next steps. The leaders and their teams – some of the brightest minds in medicine – united in extraordinary ways to share information and roll out pandemic health care protocols based on established emergency planning initiatives.

The result has been an unprecedented effort to curb virus spread, treat those affected, and most recently, vaccinate Houstonians to protect our community. TECO is grateful for the dedication and selflessness of employees across the Texas Medical Center campus who – month after month, day after day, 24/7 – have made a difference beyond measure. We are proud to serve you. 🕒

Photo: May 6, 2020: The U.S. Navy Blue Angels conduct a flyover of the Texas Medical Center in a salute to COVID-19 health care workers and first responders, providing TECO with a true aerial of its Central Plant.

Source: Operation America Strong Houston 360 Footage, Defense Visual Information Distribution Service. The appearance of U.S. Department of Defense visual information does not imply or constitute DoD endorsement.

February 3

U.S. warns Americans 'do not travel to China' as coronavirus infections surpass SARS

National Public Radio via TMC Today

Wuhan coronavirus looks increasingly like a pandemic, experts say

New York Times via TMC Today

February 17

Would the U.S. health system be ready for a surge in coronavirus cases?

National Public Radio via TMC Today

How the coronavirus numbers changed so sharply

New York Times via TMC Today

March 2

First COVID-19 outbreak in a U.S. nursing home raises concerns

Stat News via TMC Today

Preparing for coronavirus to strike the U.S.

Scientific American via TMC Today

March 13

"TMC hospitals have been following COVID-19, the disease caused by the new coronavirus, since it emerged three months ago," said Houston Methodist Hospital CEO and President Marc Boom. "It's a situation we drill for, prepare for."

How Houston hospitals are preparing for coronavirus
Houston Chronicle, Lisa Gray

May 11

Tracking the Pandemic: How quickly is the coronavirus spreading state by state?

National Public Radio via TMC Today

7 questions about COVID-19 testing and what it means for reopening the country

Stat News via TMC Today

July 6

Blood type may affect COVID-19 outcomes, study shows

TMC Today, Alexandra Becker

239 experts with 1 big claim: The coronavirus is airborne

New York Times via TMC Today

August 31

Texas Ethics Consortium created amid COVID-19 pandemic by TMC experts

TMC Today, Alexandra Becker

Scientists are reporting several cases of COVID-19 reinfection – but the implications are complicated

Stat News via TMC Today

September 14

Missed vaccines, skipped colonoscopies: Preventive care plummets

New York Times via TMC Today

December 28

TMC members voice strong support for vaccines

Texas Medical Center news release

2020: COVID-19 news evolved

Collaboration

TMC leaders have met virtually every morning, seven days a week, since January 2020.

"Even to this day everybody participates. It's been a really wonderful experience working together with all of our colleagues in the Texas Medical Center...the silver lining is there's a lot of really smart people here in the Texas Medical Center and working together I think we did a better job together than any of us could have done individually."

Paul Klotman, MD, FACP / President and CEO, Executive Dean / Baylor College of Medicine / 2020 State of the Texas Medical Center

Data gathering

"One of the things we recognized early on was the need to standardize data reporting and the value of understanding on the front lines what's going on with this pandemic. And huge kudos to the Texas Medical Center for kneading together all of the institutions, working with each of our teamsThousands and thousands of people and the press and community leaders and hospital leaders and many others are using that data source as the main source of truth in the Houston market. I'd challenge anyone to find a data source that's more real time, more well-vetted."

Mark Boom, MD / President and CEO / Houston Methodist Hospital / 2020 State of the Texas Medical Center

Education

TMC started providing key insights and links on COVID-19 from around the world in early 2020 via its weekly TMC Today email newsletter and social media outlets. It also gathered, vetted and distributed consolidated data from TMC institutions on its website, updating the metrics daily – from the virus' effective reproduction rate for the area to positivity rates for the TMC hospital system to testing to bed and ICU availability and more.

Message coordination

"Early on we were making decisions about policies. For example, when we moved to no visitors. Well we didn't do that as one institution. We did it collectively and uniformly on the same day so when we were communicating with the community they all understood the rationale why we had to restrict visitors to our hospitals to protect the patients there....The communication group has done a wonderful job of....really speaking to the audience, to our public, with one voice."

William F. McKeon / President and CEO / Texas Medical Center / 2020 State of the Texas Medical Center

PPE acquisition

"We know that the supply chain was a huge issue throughout this whole pandemic. And we were the largest purchaser – individually – of supplies other than the federal government. Well, we didn't operate individually. We pulled ourselves together. We made massive purchases of millions upon millions of dollars of personal protection equipment. We shared it. When one of our sites was low, we took it from another site and brought it over. I mean it was true collaboration to pull this together."

William F. McKeon / President and CEO / Texas Medical Center / 2020 State of the Texas Medical Center

Government interface

TMC, city and county team conferenced every Tuesday and Friday to coordinate efforts.

"I remember back in the first early months of 2020 when this first started that Bill McKeon invited the mayor, the county judge, Dr. Umair Shah and myself and others over to the Texas Medical Center to start having a conversation about how we were going to face this daunting virus that was coming our way. Since that time we have faced many challenges....But I am confident – as should you be – that we will get through this just fine due to the collaborative environment we are all working in and in the end we will be an even stronger community than we are today."

David Persse, MD / Chief Medical Officer / City of Houston / 2020 State of the Texas Medical Center

Behind the Scenes, Around the Clock

Stories of customers and care

CARRYING ON

Organ transplants slowed but never stopped

COVID-19 slowed organ transplants, particularly in March and April 2020 as new safety protocols were developed and implemented. Both donors and recipients had to be screened for COVID, including a bronchoscopy to confirm there were no signs of the virus.

Fewer accidents meant fewer organs

In the pandemic's early months, there were fewer people driving, so there were fewer accidents, greatly decreasing organ availability. Live transplants were canceled to save PPE and ventilators.

TMC-based surgeons shared best practices

Surgeons from **Memorial Hermann, Houston Methodist, Baylor St. Luke's Medical Center** and **Texas Children's Hospital** conferenced regularly with each other and LifeGift, a major organ resource center, to share solutions and insights. The result? They continued to breathe new life into many awaiting patients – including a three-year-old boy being kept alive by machines. He received a new heart in March 2020. 🍀



RESEARCHING A CAUSE

Blood clots challenged COVID-19 patients

As COVID-19 started to spread rapidly in March and April, the surgical critical care team at **Baylor St. Luke's Medical Center** expressed a grave concern: A number of COVID ICU patients were experiencing clotting in their central intravenous and arterial lines and dialysis catheters.

Researchers studied 21 COVID ICU patients for clotting potential. Only one third-tier clotting test – a thromboelastography (TEG) test not regularly used in ICU – was able to identify the condition. Researchers

recommended that physicians use the TEG test on all COVID ICU patients so that those at high risk can be identified and treated with

additional blood thinners before potentially life-threatening clotting occurs. The study was published in JAMA Network Open. 📄



62%
COVID ICU patients diagnosed with severe clotting potential during initial TEG test study.

STAYING THE COURSE

Research protected, continued during pandemic

The **University of Texas MD Anderson Cancer Center** reported that while the COVID-19 pandemic in some ways changed the way it works, “what hasn’t changed is our drive to end cancer...”

At the first sign of a potential pandemic shutdown, researchers collaborated to prevent data from being lost and years of work, compromised, while transitioning to working from home and then gradually reopening. 📄

“ COVID-19 is serious, but cancer doesn’t wait. We know how important our clinical trials are, especially to patients with difficult-to-treat cancers. Sometimes, clinical trials can be a literal lifeline. Our patients still need the largest amount of research we can do, so that we can continue to provide them with new interventions.”

Ramez Kouzy, M.D.
Taniguchi Lab

The University of Texas MD Anderson Cancer Center

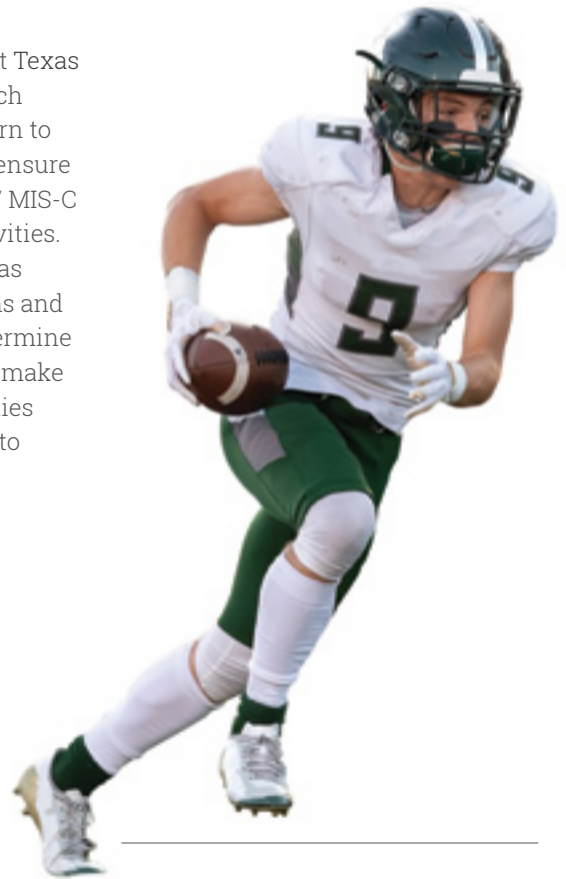
TRANSITIONING SAFELY

Children can get COVID too

When a 13-year-old boy named Mac was diagnosed with mild COVID-19 in July 2020, he appeared to recover well. But in August he had a stomach bug that wouldn't go away. He was admitted to **Texas Children's Hospital** and immediately transferred to the ICU. Test results showed he had multisystem inflammatory syndrome (MIS-C), an acute inflammation of the body's blood vessels and organs – a delayed COVID consequence in some children.

Mac was successfully treated and released, but that was just the beginning of recovery for this once-energetic football player. Since inflammation can affect the heart,

Mac became an outpatient at Texas Children's Heart Center, which established a COVID-19 Return to Activity Clinic. Its goal is to ensure kids diagnosed with COVID / MIS-C can safely resume their activities. Follow-up evaluations such as stress tests, echocardiograms and regular monitoring help determine each patient's next step and make sure patients and their families aren't alone in their journey to good health. ☺



CONTINUING TO CARE

Telemedicine proves virtual lifeline

Just about everyone has now heard of telemedicine appointments. That wasn't the case just one year ago. Today many of us have used virtual care, courtesy of the COVID-19 pandemic. People of all ages have reached out for online appointments for the first time, connecting themselves to their health care providers.



Houston Methodist Hospital averaged 44 telemedicine visits a day before the COVID outbreak. By the time the first surge arrived in June 2020, it was averaging 2,400 to 2,500 virtual visits a day. Other hospitals saw similar increases.

To meet the need, Houston Methodist escalated telemedicine training for its physicians, hosting daily training sessions over a two-week period. It went from 60 to nearly 900 physicians and providers who were available to provide virtual care across 37 specialties. ☺

Telemedicine may not a substitute for in-person appointments, but it has helped relieve patient anxiety and allowed providers to continue much-needed care.

SUSTAINING STUDENTS

Future caregivers find selves in need

The pandemic has highlighted the important role health care workers play in our society. Their dedication, care and inspiration have helped sustain us. So it is especially unfortunate that the pandemic has put many health care students at **The University of Texas Cizik School of Nursing** out of work, stripping them of resources to pay for their studies and expenses.

Church collected and distributed food to students and their families.



Supporters and restaurants also donated meals for both students and staff, and Medical Bridges Inc. contributed 1,000 surgical face masks and 300 KN95 masks to help students continue their education. It has been a special time of caring for future caregivers, the health care workers of tomorrow. 🕒

Seeing students in need, the school reached out to supporters for assistance, collecting more than \$49,000 for 80-plus hardship grants for students' basic living expenses. In addition, the Houston Food Bank and Champion Forest Baptist

Seeing students in need, the school reached out to supporters for assistance, collecting more than \$49,000 for 80-plus hardship grants for students' basic living expenses.

SUPPORTING RECOVERY

Post-ICU rehab often required

COVID-19 enters nearly all organ systems, sometimes damaging muscles, nerves and the brain. Patients with acute cases can spend days or weeks in the ICU. Some require ventilators. Quite often, memory, decision-making and critical-thinking skills are compromised, and the body is weak. Those who survive often need rehabilitation to regain their physical, cognitive and psychological functions.

Rehab teams at **TIRR Memorial Hermann** have developed evidence-based interventions to help these COVID patients recover. Team members maximize outcomes by providing (1) evaluations of each patient's functional status, (2) therapeutic exercise and functional activity programs, and (3) a continuum of care plan that may include inpatient and outpatient rehabilitation.

It may take weeks or months, but with TIRR to guide them, these special rehab patients continue to find their way "back to life." 🕒



Working 24/7 is business as usual for TECO. Our plants are always running. Our operators are always there.

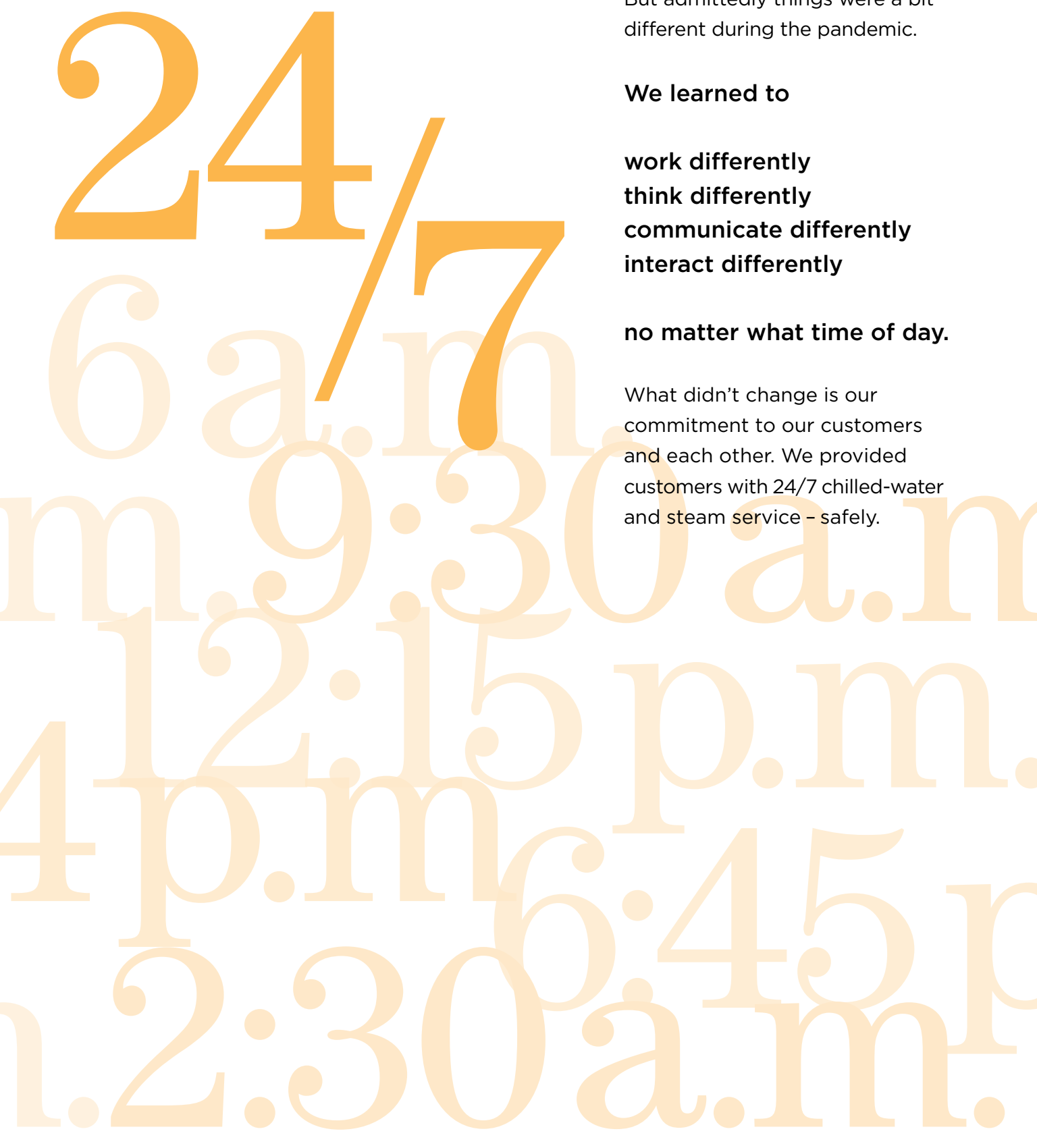
But admittedly things were a bit different during the pandemic.

We learned to

**work differently
think differently
communicate differently
interact differently**

no matter what time of day.

What didn't change is our commitment to our customers and each other. We provided customers with 24/7 chilled-water and steam service - safely.





4 p.m.

Human Resources. Reassuring guidance in time of firsts.



Most TECO employees won't remember St. Patrick's Day 2020 for its green-themed parties and lucky shamrocks. Instead they may recall hearing this news: All but essential employees had to shelter at home to help TECO stay COVID-free. Service to customers must go on.

The decision to send employees home wasn't made lightly – or easily. Human Resources helped us address the logistics. Which employees were considered essential, reporting to the plant as usual? How would we keep them safe? How could we assure employees that their jobs weren't in jeopardy? How would we stay in touch with employees? How could time cards be submitted and processed? How would we handle health care open enrollment remotely? How could we help employees and their families if they came down with COVID? The questions were many, but answers began to surface.

Communication was key. In addition to email messages, President and CEO Steve Swinson started by holding a first-ever all-employee Zoom meeting to convey TECO was there for them and their families. They would be paid. Vice presidents and supervisors helped deliver more information, creating important stability.

To continue to meet payroll, TECO needed timecards, which previously had been manually signed and submitted. Human Resources spearheaded the switch to an electronic timekeeping system already under consideration and helped guide employees through the process.

Human Resources also rolled out health care open enrollment and a wellness program electronically, more TECO firsts. "TECO is known for giving a personal touch to programs like these," says Clarissa Brewster, vice president of Human Resources. "We had to wrap our minds around how we could still be TECO and create that same experience even when we're apart. I think, for the most part, we achieved that, thanks to our hardworking and creative HR team. I'm grateful." ^{24/7}



A Family Focus

TECO left nothing to chance when caring for employees and their families. We followed Centers for Disease Control COVID guidelines and let our employees know exactly what they needed to do to stay safe.

Employees were instructed to contact Clarissa Brewster if they or anyone in their family had been exposed to or had COVID. Clarissa tracked who had been affected by the virus, their quarantine status, when on-site staff could return to

work, etc. She answered questions about quarantining and testing, always lending a listening ear. Employees needed two negative test results before receiving supervisor, vice president and CEO approval to return to work.

All employees were covered along the way. We provided 80 hours of additional paid sick leave and also covered 100% of COVID-related testing and treatment costs for employees and their families.

6 a.m.

Plant Operations. Reliability drives pandemic priorities.

As COVID-19 rolled into Houston, TECO was gearing up for peak cooling season. Chiller maintenance and repair were wrapping up, and off-season boiler work would soon be underway. But plans changed on a dime as pandemic protocols went into place. TECO needed to continue plant operations and perform as much scheduled maintenance, repair and construction as possible.

We evaluated our next steps based on two priorities: reliability and safety. Continuing plant operation to provide uninterrupted chilled-water and steam service was crucial, so we set up multiple measures to keep our skilled and dedicated operators healthy. (See “A Solid Defense.”)

Projects related to reliability rose to the top; those that also could meet COVID protocols moved forward while others were postponed. Some projects were pushed back two weeks, then four weeks, then more. We didn’t know how long the pandemic would last.

But the biggest project of all – the annual shutdown, testing and maintenance of our combined heat and power (CHP) unit – stood out as essential. “As complex as the CHP project is, it had to proceed,” says Jason Berrio, vice president of Plant Operations. “From a reliability standpoint, we couldn’t afford not to do it. We kept people safe and got the job done. Our CHP system is ready to provide 100% of our electricity if needed.” (The action proved fortuitous during the 2021 winter storm.)

TECO also prioritized training. Vital operations and safety training could not stop. Normal in-person sessions shifted online – so successfully that much online training may be here to stay.

“We didn’t expect Hurricane Harvey to dump as much water as it did, but Harvey gave us insight on how pain doesn’t stop when you want it to,” says Jason. “We learned a lot from that. The pandemic has pushed us to think even more clearly. We are more agile now than ever before.” ^{24/7}



The biggest project of all – the annual shutdown, testing and maintenance of our combined heat and power (CHP) unit – stood out as essential.



A Solid Defense

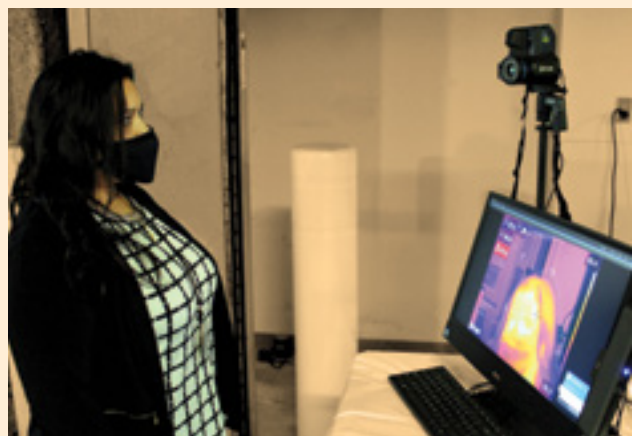
Early on, TECO developed a sound game plan to protect our plant operators and other employees from the pandemic.

Our goal was to isolate each of our five crews from the other. To reduce the risk of a cross-team outbreak that could take down multiple teams at once, all communication was handled electronically or by phone.

Plus, when each operator arrived for his 6 a.m. or 6 p.m. shift, he remained in his vehicle until he was notified that outgoing operators had cleaned their work

stations and left the building. Then incoming operators checked in one by one. Each answered a list of COVID-related health questions and was temperature-screened remotely with an infrared camera. No one who had an elevated temperature or could not respond “no” to all COVID questions was allowed to enter.

Masks were mandatory, and social distancing was enforced. “Do not enter” signs were posted on doors where needed. It paid off. There was no known employee-to-employee spread.



6:45 p.m.



Information Technology. The times they are a-changin'.

Times have changed and yet they haven't. TECO's IT department used to be just down the hall, easily accessible to all employees. With a quick call or email, anyone could get immediate on-site assistance with software or hardware problems.

Yet even though the pandemic hit and employees headed home, IT was still able to help, just in a different way. Three of IT's four team members worked from home, with one person designated to be at TECO's office at the Central Plant to ensure system reliability.

TECO had previously limited working remotely while it was upgrading system security. But with much of that work completed, IT was able to safely deploy hardware and software to employees, wherever their location.

While initial conditions weren't ideal - some employees who previously used two monitors were relegated to one, employees adapted to their new

surroundings, set up work spaces and continued to get the job done. They adopted Microsoft Teams and Zoom to stay connected.

But there were a few unexpected hurdles. Under "normal" conditions, TECO rolled out software upgrades during evening and overnight hours so the changeover was seamless and didn't affect employee productivity during the day. But that wasn't quite so simple under the new working conditions.

"With employees working from home, we saw a shift in work hours," says Austin Kelly, electrical engineer/information technology manager. "Many employees were busy during the day helping their kids with online school or even caretaking family members. So they sometimes worked evenings and nights instead. That meant we had to be more flexible and tailored with our rollouts. We figured it out. We made it work. That really was key to the entire pandemic experience." ^{24/7}



TECO's focus on system security and protocols over the past few years paid off. We were ready to accommodate a remote workforce.

Computer hardware was scarce nationwide at the beginning of the pandemic, but we had a great supply chain that helped expedite our orders. We're now equipped to do just about anything from anywhere.

Owning and using a mix of desktop and laptop devices gives us good value and flexibility.

We've adopted a hybrid approach of Cloud and on-site resources so we have a good balance for optimal performance.

The shift to working remotely heightened employee awareness of what IT does – and can do – for the company: "We are here to serve TECO employees and not make things more difficult. Our goal is to eliminate frustration."

The Takeaways

“With employees working from home, we saw a shift in work hours. Many employees were busy during the day helping their kids with online school or even caretaking family members. So they sometimes worked evenings and nights instead.”



2:30 a.m.

Procurement. Sourcing keeps everything running.

The sight of empty store shelves will be hard to forget. Toilet paper and paper towels were nearly impossible to find for months on end. Even bottled water was out of stock. Supply chains around the world strained to keep up with demand as the COVID-19 pandemic dramatically changed availability as well as behaviors and needs.

In coordination with the Texas Medical Center, our customers and our uniform supply company, TECO obtained all-important personal protective equipment (PPE) when it was nearly impossible to find. We were initially challenged like everyone else, however, when it came to toilet paper, paper towels and water. But our Procurement Department succeeded due to a great (and ongoing) sourcing effort. Phyllis Sousley, senior procurement & special programs coordinator, and Marsha Ackman, buyer, made

that happen, with Marsha on site working regular hours during most of the pandemic. We thank them!

TECO'S system inventory was in excellent shape. Our 8,000-sq-ft on-site warehouse holds more than 13,000 spare and critical parts, including motors for condenser water pumps, chilled-water pumps, cooling tower fans, boiler feedwater pumps, raw water pumps and water well pumps. Our detailed inventory tracking system alerts us when reorders are needed.

"TECO has more than 3,000 vendors," says Phyllis. "Each and every one of them is important. In the early days of the pandemic, some had to shut down due to internal COVID outbreaks. Many sent their employees home to work. In some cases I was talking to one of their representatives from my dining room, and she was working from hers half a continent away. There were a few small companies that were hard to reach at first, but they got back on track. We stayed on top of parts and supplies. We were never without anything we needed to keep chilled water and steam flowing." ^{24/7}

Hurricane Laura's projected path meant a pandemic-driven, middle-of-the-night 4.5-hour grocery shopping trip for Phyllis Sousley, who delivered her purchases right to the Central Plant.

The Storm Season

TECO is no stranger to preparing for hurricanes. But 2020 marked the first time TECO had to get ready for inclement weather while also dealing with a pandemic.

Fittingly, a record-breaking 30 named storms worked their way across the Atlantic during the 2020 season. But it was Hurricane Laura that got our attention.

We knew that we were set when it came to equipment, spare parts and supplies. But we also needed food in case the storm hit and we had to shelter in place to run the system. (Forty people were on site during Hurricane Harvey.) Laura's projected path meant a pandemic-driven, middle-of-the-night 4.5-hour grocery shopping trip for Phyllis Sousley, who delivered her purchases right to the Central Plant.

Hurricane Laura ended up passing by Houston, leaving behind provisions in the TECO kitchen for future use.



Accounts Payable. Gratitude flows both ways.



12:15 p.m.

“We can serve our customers because our business partners serve us. They deserve to be paid on a timely basis. We have received a number of calls thanking us for staying on track with payments. We know they have bills to pay too. Together we all made it work.”

When Jenice Ricks began working from home March 18, 2020, she had just about everything she needed. Her home work area was equipped nearly as well as her office at TECO. There was just one small hitch. Since she wasn't on site, she couldn't get the usual invoices in the mail or hard copy warehouse packing slips – both needed in her role as senior accounts payable coordinator.

There was a simple, but time-consuming, solution: Each day an essential worker at TECO's Central Plant scanned vendor invoices and packing slips and emailed them to her so she could confirm orders had been received and keep payments flowing. And she did. TECO did not delay or miss a payment during the pandemic.

“We think of our vendors as business partners,” says Jenice. “We can serve our customers because our business partners serve us. They deserve to be paid on a timely basis. We have received a number of calls

thanking us for staying on track with payments. We know they have bills to pay too. Together we all made it work.”

The situation highlighted the importance of electronic options. TECO had activated ACH payments just before the pandemic hit. Soon after, more and more vendors began submitting their invoices electronically and opting to receive ACH payments. Prior to TECO's ACH conversion, TECO would cut more than 100 checks every two weeks. By the end of 2020, greater ACH use brought that number down to 26, streamlining payments and recordkeeping. Now, nearly 90% of new vendors are opting for ACH.

“As 2020 progressed, I was able to get safely back to my walled office at TECO a few days each week,” says Jenice. “It helped me stay on top of everything, but it was so, so quiet. I miss my co-workers. It will be wonderful to see each other again. What a celebration that will be.” ^{24/7}



A Signature Improvement

If TECO employees were to vote on their favorite pandemic-era improvement, it would most likely be adopting DocuSign eSignature, the platform that offers a way to sign documents electronically.

As most companies, TECO requires different signatures for different levels of approvals. Some require a vice president's signature; some, the CEO's; and some, the signature of a TECO Board member.

When employees were on site, it wasn't hard to walk down the hall and get someone to sign a purchase order. But as everyone dispersed, the approvals were still needed, and we had to find a secure signing method. Enter DocuSign.

The platform has provided an efficient way to track approvals and expedite the process. It has also proved convenient for board members who can now sign documents no matter where they may be.



9:30 a.m.

Construction. The work must go on.

Fact: TECO weathered Hurricane Harvey, providing uninterrupted chilled-water and steam service.

Also fact: Harvey dumped a record-setting amount of rain that had lingering consequences.

TECO had a 1969-era 16-inch-diameter steam line in a tunnel under one of the medical center's busiest intersections. Harvey's rain flooded the tunnel, submerging the pipe, damaging the casing and insulation, and exposing the steam pipe to water and causing it to boil. Although the pipe remained intact, a steam burp damaged at-grade soil near the road above.

Rather than just replace insulation and casing, TECO opted to install an all-new piping configuration to provide even greater reliability and easier pipeline access (see sidebar). But there was a caveat: The project absolutely had to be completed before the heating season.

To expedite the project, TECO used a design-build approach. Burns & McDonnell served as engineering consultant, Tellepsen as contractor. Construction began in September 2019 in a congested, constricted area adjacent to a major nursing school. Crews worked around the school's delivery schedule as well as class schedules so noise did not disrupt lectures.

And then everything changed. When COVID closed much of

the Texas Medical Center in mid-March 2020, the busy intersection wasn't so busy any more. The school shut down classes and deliveries slowed, allowing construction to move full speed ahead with fewer restrictions.

It transformed the way we performed the project. "We were even more dedicated to keeping crews healthy," says Jess Harper, PE, CEM, LEED AP, supervising senior project engineer. "In-person meetings went online. Job site crews underwent daily temperature screenings. Sanitation stations were added. All workers had to wear masks if working within 6 feet of one another. Yet Tellepsen finished the job before the heating season with no reported COVID cases on the job site." ^{24/7}



The Best Choice

It's no surprise that reliability drove TECO's new piping plan. We also needed a design that (1) could be constructed as quickly as possible and timed to allow shutdown of the line during an off-peak period, (2) accommodated a geographically constrained area, and (3) would allow us to isolate the piping so it could be relatively easily replaced as needed.

The resulting \$9.9 million project required installing a bore pit on one side of Holcombe Boulevard, adjacent to The University of Texas Cizik School of Nursing, and a

receiving pit on the other by the Texas Medical Center garage, with two hand-dug wood-box tunnels between.

The contractor was able to install all infrastructure in advance of the customer service shutdown to make the final tie-in during October 2020. Only one of TECO's 37 steam customer buildings – a non-critical-load educational facility – required a coordinated one-week shutdown for the connection. Service continued uninterrupted to the rest because of our distribution system's looped design.

FY2020

ACCOMPLISHMENTS

FINANCE AND ADMINISTRATION

- Exceeded budget expectations for FY2020* and presented FY2021* budget that was approved by Board of Directors.
- **Rebated \$9.3 million to all customers at end of fiscal year in addition to not invoicing customers for service in April 2020, which was a customer benefit of \$6.2 million.**
- Completed FY2020 financial audit with no notable comments regarding FY2020 financial results, accounting methods, process or internal controls.
- Maintained TECO's financial closing on third business day of the month.
- Met on a regular basis with Board members outside of regularly scheduled meetings and met with senior executives for many customer institutions.
- Prepared accurate forward-year rate forecasts in March 2020 for institutions that needed them for early-in-the-year budgeting.
- Conducted employee survey for 2020.
- Produced and distributed TECO's 2019 Annual Report, "The Energy Behind What's Next," marking the system's 50th anniversary.
- **Managed through the COVID-19 pandemic while maintaining no service interruptions.**

OPERATIONS

- Provided 100% chilled-water and steam reliability to customers.
- Managed peak power requirements during the periods Electricity Reliability Council of Texas (ERCOT) measures peak power consumption, saving TECO more than \$3 million during these periods.
- Successfully followed Energy Policy initiated by Board of Directors in 2006, which helps TECO lock in fuel purchases at the lowest-possible cost.
- Continued Operator Training and Certification Program as scheduled. Five operators received or upgraded their City of Houston stationary engineer license in FY2020: two received their First Grade Engineers License and three received their Third Grade Engineers License.
- **Successfully completed, on schedule and budget, capital projects to enhance performance, efficiency and reliability.**
- Conducted 3,763 manhours of training in FY2020.
- Experienced only one recordable incident in FY2020. Prior to the July 14, 2020, incident, TECO had gone 776 days without a recordable incident and 1,995 without a lost-time accident.
- Achieved Workers Compensation Experience Modifier of 0.71, which continues to be below the industry average.
- Continued Major Equipment Replacement Program (MERP) and the insurance reserve fund. MERP ensures funding will be available for future equipment replacement as needed assuming normal equipment life cycles. By regularly allocating money to insurance reserve fund, TECO can raise deductibles and reduce insurance premiums.
- Continued to operate and maintain The University of Texas Health Science Center's Research Park Energy Plant, South Campus. TECO remotely monitors plant operations 24 hours a day, and operators visit the plant daily, bringing UTHealth significant economic savings and improved operational benefits.
- Had no citations relating to environmental, safety or regulatory requirements.
- Completed installation of a replacement steam line and tunnel with tie-in to existing system in October 2020.

CUSTOMERS

- **Conducted 2020 customer satisfaction survey, with 100% of respondents replying that TECO's chilled-water and/or steam service met their expectations very well (highest rating) over the past year. The same was true in 2019 and 2018.**

* Fiscal year September 1 - August 31

FY2020

METRICS

“ The ongoing reliability of the chilled water and steam service to our hospital operations and knowing that we have a trusted partner ensuring timely delivery to us is extremely important.”

“ I have received no complaints or concerns from our engineering team. The reliability has been excellent and has relieved a lot of concern related to central management for us as an institution.”

“ Thank you to the entire TECO team for everything you do for us.”

Chilled Water

Steam

CUSTOMERS

Number of customers	17	.....	15
Number of buildings served	50	.....	37
Square feet served.....	23.7 million	.....	19.7 million
Energy sales	359,975,000 ton-hr	.....	1,063,545 Mlb

ENERGY SOURCES

Paul G. Bell, Jr. Energy Plant - Central Plant

Number of boilers, chillers/fuels.....	14 chillers	.....	7 boilers
	electricity & natural gas		natural gas & diesel
Thermal storage tank.....	8.8 million-gallon	.....	n/a
	chilled-water storage tank		

South Main Plant

Number of boilers, chillers/fuels.....	13 chillers	.....	2 boilers
	electricity		natural gas & diesel

OPERATIONS / DISTRIBUTION

Capacity	120,170 tons	.....	980,000 lb/hr
	(including thermal storage)		(with heat-recovery steam generator & duct firing)
Supply temperature	40° - 43°F	.....	450°F
Supply pressure	55 - 75 psi	.....	400 psi plant
			250 psi distribution
Return temperature.....	52° - 55°F	.....	150°F
Water volume in system.....	12.4 million gallons	.....	n/a
Steam pressure.....	n/a	.....	400 psi
Piping type.....	Welded steel coated	.....	Welded steel, Schedule 40
	with coal/tar epoxy		with insulation
Piping diameter.....	6 to 60 inches	.....	2 to 16 inches
Piping distribution trench length.....	7.7 miles	.....	7.7 miles
	(portions of the line have three pipes)		

Power

Paul G. Bell, Jr. Energy Plant - Central Plant

Combined heat and power system.....	48 MW
Standby generation.....	14 MW

South Main Plant

Standby generation.....	2 MW
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Customer responses from 2020
TECO Customer Satisfaction Survey

FY2020

FINANCIAL AND OPERATING STATISTICS

Rates and Units

Fiscal year September 1 - August 31

	FY2020	FY2019
CHILLED WATER		
Rate (\$/ton-hr).....	\$ 0.1669	\$ 0.1893
Rate (\$/MMBtu).....	\$ 13.91	\$ 15.77
Peak Demand (tons).....	78,600	77,042
Average Demand (tons).....	41,093	39,399
Load Factor	52%	51%
Peak (sq ft/ton)	301	308
Production (sq ft/ton-hr).....	0.066	0.069
Production (ton-hr).....	359,975,226	345,138,138
Cooling Degree-Days (3,510 normal)	3,699	3,694
Fuel Consumption MWh.....	297,571	280,900
(natural gas and electricity)		

STEAM

Rate (\$/Mlb).....	\$ 14.58	\$ 15.95
Rate (\$/MMBtu).....	\$ 13.72	\$ 13.28
Peak Demand (lb/hr).....	378,856	321,057
Average Demand (lb/hr).....	145,160	141,435
Load Factor	38%	44%
Peak (sq ft/lb).....	52	56
Production (sq ft/Mlb).....	15.5	15
Production (Mlb)	1,271,605	1,238,697
Heating Degree-Days (1,081 normal)	1,032	1,290
Fuel Consumption MMBtu (natural gas)	1,752,842	1,604,776

Revenue and Expenses

Fiscal year September 1 - August 31

	FY2020	FY2019
OPERATING REVENUE		
Chilled Water.....	\$ 67,664,759	\$ 66,978,064
Steam.....	\$ 17,951,859	\$ 17,654,382
Other.....	\$ 4,150,089	\$ 4,794,993
Total Operating Revenue	\$89,766,708	\$ 89,427,439

OPERATING EXPENSES

Fuel

Electric.....	\$ 6,718,184	\$ 2,516,195
Gas	\$ 6,441,804	\$ 7,694,146
Fuel Oil	\$ 69,199	\$ 70,072
Other Operating Expenses.....	\$ 58,306,455	\$ 56,756,320
Total Operating Expenses.....	\$ 71,535,642	\$ 67,036,735

Customer Rate Reduction	\$ (15,510,127)	\$ (6,200,000)
Net from Operations.....	\$ 2,720,939	\$ 16,190,704

TECO completed fiscal year 2020 with operating revenues 6.9% over budget and operating expenses 12.1% under budget. Operating revenues were over primarily due to unbudgeted demand revenue from new customer buildings. Most of the favorable operating expense variance was achieved because (1) fuel and water costs were 27.6% below budget due to operating efficiencies and (2) personnel costs were 10.8% below budget due to a combination of favorable health insurance costs and capitalized costs.

These favorable variances along with additional unbudgeted operating revenues allowed for a total customer rebate of \$15.5 million (18.5% of budgeted operating revenues) for fiscal year 2020. After discussion with TECO's Chairman Brad Howell and the Executive Committee, TECO decided that it would not invoice customers for the month of April. This essentially created a mid-year rebate of approximately \$6.2 million. In August 2020, an additional \$9.3 million was rebated to customers.

TECO's income from operations in fiscal year 2020 was \$2.7 million.

TECO achieved its below-budget fuel cost without deviating from its energy policy, which provides fuel price stability so that rapid increases in fuel costs do not affect TECO's rates during a budget year.

The company met all of its planned cash, internally set financial, and debt covenant requirements for fiscal year 2020.

OPERATING EXPENSES

12.1%

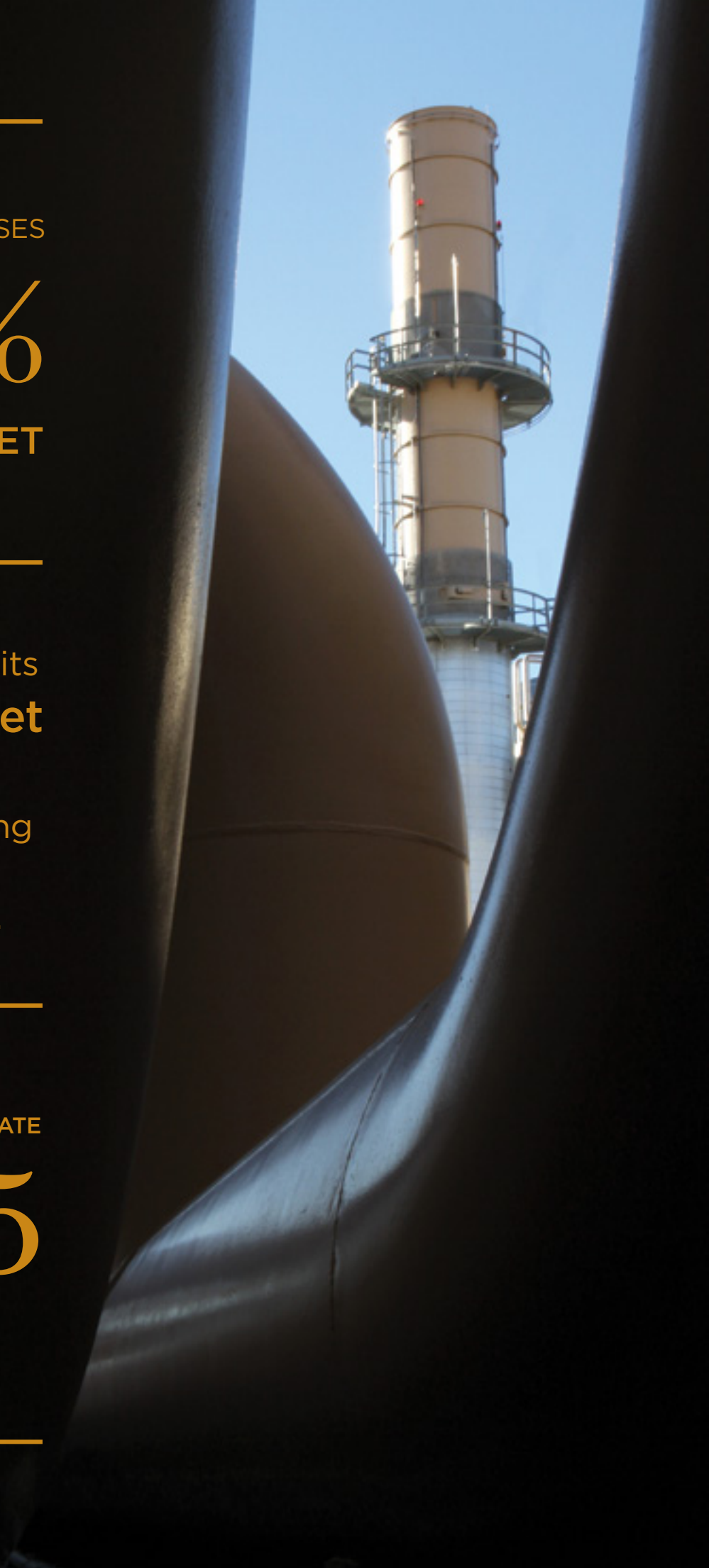
UNDER BUDGET

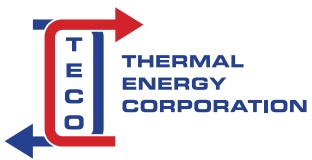
TECO achieved its
**below-budget
fuel cost**
without deviating
from its
energy policy.

TOTAL CUSTOMER REBATE

\$15.5

MILLION





A TEXAS MEDICAL CENTER INSTITUTION

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