...at every level, we embrace the evolution of energy production...
Abbott Power Plant ready to serve...

Combined heat and power + emissions reduction equipment = significant environmental benefits*:

Reduces carbon dioxide emissions by 101,000 tons per year, equivalent to taking 18,000 cars off the road (10% lower than the proposed U.S. Environmental Protection Agency standard).

Cuts nitrogen oxide emissions by 560 tons per year.

Abbott 1940

6 megawatts (MW) electric generating equipment capacity, with 1.5 MW peak load
240,000 lb/hr steam production equipment capacity

Abbott Today

84 MW electric generating equipment capacity, with 77 MW peak load
1,235,000 lb/hr steam production equipment capacity

Electric generating capacity up 1300% since 1940
Steam generating capacity up 321% since 1940

Abbott Power Plant begins operation with three boilers and two steam-driven generators. Plant dedicated to namesake William L. Abbott, an 1884 Illinois mechanical engineering graduate, trustee and “dean of electric light and power industry.”

1940

1949

Expands water treatment facilities and expands building.

1950

1954 - 55

1957

1958

1961

1944

Adds turbine generator and expands building.

Adds coal boiler and expands building.

Adds turbine generator and expands building.

Adds coal boiler and turbine generator and expands building.

*compared to conventional electric generation and heat-only systems
The warmth of a residence hall after crossing a wintry quad. The lights that shine brightly at Memorial Stadium. The power behind decades-long research aimed at agricultural or medical breakthroughs. All made possible by Abbott Power Plant, providing electricity and steam service essential for the development and growth of students at the University of Illinois at Urbana-Champaign (Illinois).

Since starting operation in 1940, Abbott has run 24 hours a day, 365 days a year and expanded right along with the Urbana-Champaign campus. Today we serve 19.4 million sq ft of building space used by 43,000 students and 11,000 faculty and staff.

Abbott is reliable, responsible, and ready to energize the future, providing uninterrupted service, using environmentally sound technologies, and planning to meet Illinois’ changing energy needs. We support the Illinois Strategic Plan and Mission by striving to be the best at what we do, offering transformational learning experiences, and serving as a campus energy leader.

We start by saving energy – saving energy saves money and the environment. Abbott has always used highly efficient, environmentally responsible combined heat and power (CHP) technology. That means Abbott produces both steam and electricity from the amount of fuel used by conventional power plants just to produce electricity. So Abbott is almost twice as efficient.

Abbott uses gas turbines, natural gas-fired boilers, and coal-fired boilers, recovering reject heat from electric generation to help produce steam. The plant pipes steam underground across campus to provide buildings with space heating, domestic hot water, sterilization, and more. Once used, the steam condenses into water and returns to the plant where it is recycled and reused, a sustainable proposition!

With so many people, places, and processes depending on our services, Abbott is resolute in our commitment to being a best-in-class energy provider. We continue to adapt to the changing energy landscape, add effective new technologies, and share our story with students of all ages, connecting textbooks to actual system operation. Indeed, Abbott is ready to energize the future – whatever that may be – for many decades to come.

“The university... was founded not to recreate nor dwell in the past, but to actively imagine and actively engage with the world around us to deliver a better future. ...We have changed to meet the needs of each generation.”

- Robert J. Jones, Chancellor, University of Illinois Official Sesquicentennial Opening February 2017

- 2017 Demolishes oldest stack and adds two natural gas boilers and two related stacks.
- 2015 Adds two heat-recovery steam generators, two gas turbines, and three steam turbines.
- 2003-05 Adds two heat-recovery steam generators, two gas turbines, and three steam turbines.
- 1981-86 Converts three natural gas boilers back to coal and adds nation’s first jet bubbler reactor (JBR) flue gas desulfurization system.
- 1980 Converts three fuel-oil boilers to natural gas.
- 1980 Removes four original coal boilers, adds three fuel-oil boilers, and converts three coal boilers to fuel oil.
- 1979 Adds gas-burning capabilities to three fuel-oil boilers.
- 1971-72 Adds coal boiler and expands building.
- 1962 Adds two heat-recovery steam generators, two gas turbines, and three steam turbines.
That’s especially important when it comes to Illinois’ mission-critical research projects worth more than $640 million. Without seamless steam and electricity service, these vital projects – in fields ranging from medicine to agriculture to engineering – could be jeopardized and millions of dollars could be lost.

So Abbott has detailed contingency plans to provide continuous service to all customer buildings should the unexpected occur – whether a natural or manmade disaster or equipment malfunction.

Our plant professionals keep Abbott operating non-stop, working rotating shifts. They know Abbott inside and out and adhere to a rigorous equipment maintenance program that ensures all equipment runs at optimal efficiency year-round. Our team members also collaborate with equipment vendors so everyone remains up-to-date on best practices and operating protocol.

Yet another key to reliability is fuel flexibility. Although natural gas is currently our primary fuel, we’re not limited to just one fuel source. Abbott can use three different kinds of fuel – natural gas, coal, and fuel oil – whatever fuel is most available and cost-effective at the time. So customers can rely on us, no matter the energy industry landscape.

Although Abbott provides electricity to the majority of the Urbana-Champaign campus, Ameren Illinois also serves a portion of the campus, providing another layer of reliability.

“I’ve been an instrument technician at Abbott since 2006. It’s a really important job, making sure all instruments are calibrated correctly and running at peak performance. If they’re not, that can affect plant efficiency and reliability. That’s why we dig deeper to find potential trouble before it starts. We don’t want equipment failing in the middle of the night!”

- Bobby Carlson, Instrument Technician, Abbott Power Plant
Has **reliably** served electricity and steam to customers with **no unplanned outages since 2009**.

77% **natural gas**

23% **coal**

for **reliability & cost-effectiveness**
Abbott Power Plant is committed to a responsible, sustainable future for Illinois, our community, and our state. We strive to be a positive, active role model that demonstrates how promises are kept.

For example, Abbott is a dedicated environmental steward. We are fortunate to have a combined heat and power legacy on which to build. Using CHP saves energy and reduces emissions. Without Abbott’s CHP system, the university would have to buy all of its electricity from the utility grid, which mainly relies on conventional power plants. Unlike Abbott, conventional plants exhaust waste heat into the environment rather than re-use it, making them less efficient and less environmental responsible. That’s especially true in central Illinois where roughly 61 percent of grid electricity comes from coal.

At Abbott, our primary fuel source is natural gas. As needed, we can use coal or even fuel oil, which serves as a backup. To ensure responsible coal use, Abbott was the first in the nation to install a jet bubbling reactor (JBR) for flue gas desulfurization. Together with electrostatic precipitators, the JBR cleans the flue gases, reducing emissions to extremely low levels. Abbott routinely beats EPA emission limits for carbon dioxide, nitrogen oxide, and mercury levels. Abbott champions Illinois’ Institute for Sustainability, Energy, and Environment, which developed the Illinois Climate Action Plan (iCAP), and we’re honored to serve the first Big Ten university to sign the American College & University Presidents’ Climate Commitment.

Yet our measure of accountability extends beyond the environment. We are responsible stewards of our physical assets and human resources, all essential for a sustainable future. The Abbott team works together to cost-effectively get the job done for optimal service delivery.

Committed to a responsible, sustainable future

“We use steam from Abbott Power Plant to provide space and water heating for residence halls, dining halls, and apartments that serve more than 10,000 students. We also use Abbott’s electricity. Before starting here, I spent 38 years in power generation and construction. My observation is that it seems way more economical to centrally produce steam at Abbott and distribute it than for every user to self-generate steam with a local boiler. The additional redundant equipment required for reliability would also be a huge cost.”

-Dennis Watson, Assistant Director for Housing, Maintenance Operations at University Housing, University of Illinois at Urbana-Champaign

“Abbott currently has a solid environmental compliance record that can be attributed not just to plant renovations, but top leadership’s commitment to continual, accountable improvement. That combination is a game changer.”

-David Wilcoxen, Associate Director, Environmental Compliance, University of Illinois at Urbana-Champaign

Every step of the way, Abbott emphasizes job safety, educating employees about preventive safety practices and Zero Accident Performance (ZAP). We are steadfast in our commitment to having Abbott employees return home every day in the same condition they reported to work. It is the right thing to do.
Holds mercury level emissions to just 7% of EPA’s proposed allowable limit.

More than 90% of sulfur dioxide is removed from the coal that’s burned.

Used 58% less water in 2016 than 2008.

Cut carbon dioxide emissions 21% from 2010 to 2016.
Abbott regularly updates our utilities master plan, which revolves around the Illinois campus master plan. By knowing where new buildings will be located, we can be sure we're ready to meet their energy requirements.

Abbott also carefully tracks the lifespan of our major plant equipment, evaluating maintenance and repair costs versus capital investment and efficiency returns. That way we are financially prepared to make necessary capital investments on a timely basis. Abbott recently installed three new high-efficiency natural gas boilers to replace older, less-efficient units. We have already mapped out campus growth projections and potential plant investments through 2049!

To carry out present-day operations while adapting to what lies ahead, we offer all employees an extensive, ongoing training program, with new employees learning the ropes and working alongside seasoned professionals.

But it’s not just employees who are ready to learn. Abbott works closely with Illinois engineering professors and is proud to host plant tours for Illinois engineering students to supplement to their classroom experience and help prepare them for related careers.

Plus, Abbott regularly opens our doors to those outside the campus community. Girl Scout and Boy Scout troops visit the plant and often participate in hands-on experiments demonstrating steam and power production principles. More than 1,000 people tour the plant each year. We encourage elected officials, environmental groups, and more Illinois students to stop by and discover what’s inside!

Abbott Power Plant and the University of Illinois at Urbana-Champaign are firmly linked and working together as sustainable stewards of our energy, environmental, physical and human resources. With a foundation grounded on energy efficiency and environmentally responsible practices, Abbott is committed to remaining reliable, responsible, and ready to energize the future.

“Our job at Abbott is to be ready – for anything. We work to exceed expectations, make sound decisions quickly, pay attention to detail, and keep strategies and goals in mind. We are always looking for innovative technologies and procedures that will improve service to our customers and increase plant efficiency.

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“Abbott is a great place to take engineering students for field trips. A plant tour helps students connect what they learn in the classroom to engineering practice in a real-life setting. I also take Girl Scout troops through the plant as part of their STEM (science, technology, engineering, and math) program. The girls are naturally curious, and it’s fun to see them get their ‘Girl Power.’ Abbott’s staff have been very helpful and welcoming to all.”

- Ashlynn Stillwell, Ph.D., Assistant Professor, Civil and Environmental Engineering, University of Illinois at Urbana-Champaign

“My position requires attention to detail. It’s satisfying to know that efficiently handling shipments and invoices is integral to making Abbott work. At every level, we embrace the evolution of energy production and are dedicated to increasing steam production capacity, improving energy efficiency, and reducing emissions. Abbott’s administrators embody preparedness and retain staff that execute that vision.”

- Brandon Boswell, Utilities Receiving Clerk, Abbott Power Plant
Kept electrical and steam energy costs at or below targeted levels since 2006.

Held operating department costs under budget since 2012.
Proud to be of service

A building on the National Register of Historic Places. A structure housing the “Fort Knox” of soybean seeds. A LEED Platinum-certified residence hall. What do they have in common? All are Illinois buildings that receive electricity and steam service from Abbott Power Plant. Want to learn more? Check out these examples from 260 diverse buildings of all ages that Abbott energizes each and every day.

**Harker Hall**
Opened 1878
1305 West Green Street, Urbana
33,189 sq ft, five stories
Oldest continuously occupied building on campus; on National Register of Historic Places. Home of University of Illinois Foundation. Surviving a late 1890s fire, the Italianate building has undergone several restorations. Previously home to the Mechanical Engineering Laboratory, Department of Chemistry, School of Law, and more.

**Engineering Hall**
Opened 1894
1308 West Green Street, Urbana
93,216 sq ft, six stories
Administrative center for College of Engineering. College of Engineering has more than 9,100 undergraduates; 3,400 graduate students; 650 researchers; and nearly $230 million in research expenditures. Illinois’ Civil Engineering department ranked #1 in U.S. News and World Report in 2016.

**Memorial Stadium**
Opened 1924
1402 South First Street, Champaign
60,670-seat stadium with weight room, training facility, meeting space, luxury suites, club areas, press box and event space. Built as a memorial to Illinois men and women who gave their lives for their country during World War I. Legendary Harold E. “Red” Grange was on first team that played in stadium. Also hosted first-ever Farm Aid concert in 1985.
Illini Union
Opened 1941
1401 West Green Street, Urbana
301,440 sq ft, nine stories
Community center for students, alumni, faculty, staff and guests. Supports an inclusive community and provides students with growth opportunities. Designed in shape of I in honor of university. Features café, bookstore, two clock towers, Illini Union Hotel, meeting rooms, lounges, food court, tech center, bowling alley, and other amenities.

Krannert Center for the Performing Arts
Opened 1969
500 South Goodwin Street, Urbana
Classrooms, gathering spaces, and four performance venues with combined seating of 4,000. Recognized as nation’s premier university-based performing arts center, hosting hundreds of thousands of patrons since inception. Serves as classroom, laboratory, and public square for exchanging ideas, creating new works, and embracing live performance.

National Soybean Research Center (NSRC)
Built 1952; opened as NSRC, 1992
1101 West Peabody Drive, Urbana
98,223 sq ft, six stories
Engaged in research, outreach, and education related to soybean production, nutrition and international development. Leads the way in developing innovative soy processing and marketing techniques. Serves as “Fort Knox” of soybean seeds, storing 20,000 varieties from back to the 1800s. Also houses Illinois’ Institute for Sustainability, Energy, and Environment.

National Center for Supercomputing Applications (NCSA)
Opened 2005
1205 West Clark Street, Urbana
141,708 sq ft, six stories
Serves as university hub of transdisciplinary research and digital scholarship. Provides campus with integrated cyber-infrastructure – computing, software, data, networking, and visualization resources. Experts provide hands-on training for undergraduate and graduate students and post-docs. Houses Blue Waters supercomputer, one of the most powerful in the world.

Bousfield Residence Hall
Opened 2013
1214 South First Street, Champaign
Eight stories, 484 beds
Named after Maudelle Bousfield, first African-American woman to graduate from Illinois (1906). Features double- and single-room, suite-style living in coed, layered setting. LEED Platinum-certified building features green roof, efficient exterior building envelope, and real-time energy metering for student monitoring.
VISION
To support the university’s vision and Strategic Framework 2016-2026 by being the best-in-class, preferred energy provider for the University of Illinois at Urbana-Champaign, focused on energizing the future by being reliable, responsible, and always ready to serve.

MISSION
To provide safe, environmentally responsible, reliable, cost-competitive energy – both steam and electricity – to buildings on the campus of the University of Illinois at Urbana-Champaign, satisfying the energy-related and related educational needs of Illinois students, faculty, researchers, and administrators.

STRIVE CORE VALUES

SAFETY
At Abbott, safety always comes first. It is the first and most fundamental of our Core Values. Safety Rules: Safety over production. If it isn’t safe, don’t do it!

TEAMWORK
The best way to achieve our common goals is to cooperate! We need to be an effective team, a group of people acting together in an atmosphere of trust and accountability.

RESPECT
At Abbott, we work together to be best-in-class in all aspects of energy generation and customer relations. But we can only be best-in-class if we demonstrate respect to all.

INTEGRITY
Integrity is our word, it is our bond. As Abbott employees, we are expected to say what we mean and do what we say. How we do our work is as important as the work we do.

VALUE CREATION
Abbott creates value by putting our mission and vision into action every day. We produce steam and electricity that help make campus life – and invaluable research – possible.

EXEMPLARY LEADERSHIP
Regardless of our job, we are all leaders. We demonstrate exemplary leadership through our daily acts, sets of skills and abilities, energy, and enthusiasm.

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