



Tunnel at BGSU Repaired and Upgraded

BGSU has a Central Steam Plant that it uses to heat most of its campus. The steam is carried though the campus by steam pipes housed in underground utility tunnels. IPS was selected by BGSU to be the Design Build Contractor to design and repair the tunnel from the plant to Shatzel Hall. This included the replacement of the deteriorated heat plant tunnel top below Thurstin Street, and wall replacement where the secondary backup steam line enters this tunnel. IPS also identified and replaced deteriorated pipe rack supports in various locations throughout the entire tunnel, removal and replacement of five tunnel top expansion joints, insulating the condensate lines, plus installation of new LED lights and tunnel ventilation kiosks. The high pressure steam and condensate lines were active during the construction of the tunnel renovation. IPS protected the piping located under Thurstin Ave during the replacement of the tunnel top



and the walls in this area when the tunnel top was removed. IPS secured this area from accidental entry with proper protection (i.e. fencing, barricades, and signage) for the duration of the tunnel top replacement. In the heating plant tunnel, the roof concrete had significant damage due to water infiltration through the tunnel top and the high heat created by uninsulated or leaking pipes.

IPS specified the products and techniques to eliminate water infiltration before making any repairs to the tunnel structures. This tunnel top replacement under Thurstin St. required the removal of the roadway surface and the subbase located over the tunnel. IPS coordinated with local authorities on lane closures to keep traffic patterns safe and efficient. The new tunnel top was treated with a waterproof coating prior to the replacement of the roadway

subbase and the new roadway paving that was replaced. The road was replaced one week early. IPS reinforced new bars and repaired all the areas of deteriorated concrete. This allowed for expansion joint locations and waterproofing to prevent future water infiltration from occurring. IPS drafted a safety plan to address working around active steamlines within the tight working conditions in the tunnel.

IPS News 2018 -1-

SAFETY SPOTLIGHT

Safety Tips

Safe use of power and hand tools

- At IPS, we use a number of different power and hand tools to complete the scheduled tasks. Before you use any tool, you need to perform an inspection of your tools and make double sure your tools are safe to use. Always pre-inspect and pre-plan your job. Look for the obvious hazards and the hidden hazards. Plan what you are going to do the remove the hazards.
- Be sure to <u>select the right tool for the job</u>. (A wrench is not a hammer).
- Inspect all extension cords and power tool cords. If the cords are damaged, replace them immediately. Remember – whenever you use an extension cord – a GFCI is required to be placed at the power source (outlet) to protect the cord. This is a standard practice whenever possible, but it is especially important when working in a wet or damp environment.
- All power tools should be grounded or double-insulated. Don't use them if they are not. If the ground prong is missing from the plug, take the tool out of service immediately and tag it with a "Danger- Do Not Use" tag so no one else will use it either. If the tool wasn't made with a ground prong, make sure it is double-insulated. Look for the words "Double Insulated" or the symbol of a small square inside of a slightly larger square.



- * Keep all of the tool guards in place unless the tool has been unplugged for cleaning. Replace the guard before you reenergize the tool.
- ❖ Angle Grinders take special care − Match the type of work (grinding/cutting) to the wheel RPM and type to the grinder. Check your wheel, remove any wheels marked "CES" from service. Remember − a grinding wheel should never be used as a cutting wheel.
- * Bench grinder wheels also need to be matched to the RPM and type. Also set the guards correctly. Set the bench quard at 1/8" and top quard at ¼ inch, and use the eye guard.
- When using the tool don't wear jewelry, loose clothing, long hair or anything else that could get caught in the moving parts.
- Don't force the tool. If there is unusual resistance turn the tool off to find out why. Fix the problem before you proceed.
- Use the right personal protective equipment. Always use either safety glasses or safety goggles and use a face shield for grinding and where appropriate.

IPS News 2018 - 2 -

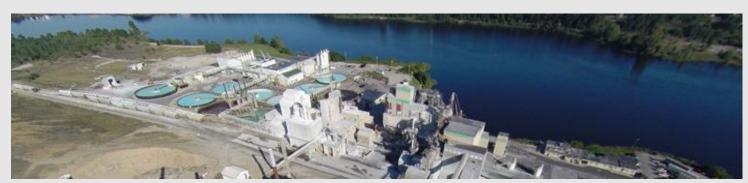
NEW AND NOTEWORTHY

IPS Refurbishes lime and stone facility in Ohio



A lime plant with several locations uses Ohio and Michigan as their major manufacturing facilities. One of the lime plant's divisions makes many different magnesium hydroxide products that are being used all across the globe and are a positive impact on the environment. IPS was contracted to remove and replace existing feed away belts from the coal day bin with a new assembly at one of their sites. They modified the existing platforms and grating to accommodate the new belt assemblies; replaced a coal day bin entry ductwork with new; replaced burner piping with new burner assembly; repaired cooling section grating and steel to account for structural degradation; replaced ID and coal fans with new fans; sealed and patched multicone assembly and replaced grit screw and feed end dams.

IPS worked with the plant to meet their deadlines scheduled around the clock on (2) 12 hour shifts to maximize efficiency of the outage. This included 1300 man-hours worked from Sunday to Sunday which was closely coordinated with the facilities maintenance crew to keep on schedule and get the most benefit from the outage. Realistic goals were set as the work progressed to meet the deadline of Sunday startup, but achieve as much repair as possible. More projects were completed during the outage than originally planned for due to workmanship and dedication of onsite personnel and coordination with the lime plant. This benefited the customer by reducing unplanned shutdowns in the future and keeping production maximized. IPS has been integrated into every planned shutdown for this lime plant for 2018 due to the success of our performance in 2017.



IPS News 2018 - 3 -

NEW AND NOTEWORTHY

IPS completes Electrical Installation of Toledo's Safety Instrumented System

IPS has successfully installed the electrical portion of Toledo Refining Company's new Safety Instrumented System, or SIS. These sets of engineered hardware and software controls allow critical refinery units to be put into a "safe state" in the event of a process incident,

which is paramount to safe, reliable operations.

Project scope included installing more than 10,000 feet of cable and making over 1,000 terminations to several instruments and devices in the refinery. IPS completed



the project on time, in conformance with quality standards.



Industrial Power Systems Inc. Recent Hires to their Management team



Stephen Vasquez has joined the IPS team as Business Development Manager. Stephen will be responsible to direct the day-to-day business development and marketing functions for the corporation as well as cultivate new business.

Stephen will report to Jeremiah Johnson, President of IPS. Prior to joining IPS, Stephen spent 7 years at the Toledo Regional Chamber of Commerce and was most recently Vice President of Program Development and Special Projects. With over 13 years of business development experience, he has also held positions at The United Way of Greater Toledo and Lourdes University (formerly College). Currently, Stephen sits on the board of the Ohio Virtual Academy, The Toledo Airshow. He is a graduate of St Francis De Sales High School ('99) and the Ohio University ('03).

IPS News 2018 - 4 -