

### Swift Response to Underground Line Break Reduces Facility Downtime

#### Problem

During a scheduled outage at a major Midwest power generation facility, plant personnel discovered a lime slurry puddle, due to a break in an underground process line. The leak had developed around a concrete substation platform and was rapidly forming a large lime slurry puddle. The cause and exact location of the line fracture was unknown, but swift action was clearly required. Plant supervisory personnel explored several excavating options. However, the general location of the line break presented three challenges. First, it was physically located in a congested area within the operating facility where large bobcats or backhoes could not fit. Secondly, the area around the line break contained numerous additional underground utility and process lines 3-6 feet below the surface. Lastly, plant personnel were uncertain of the break location and what initiated it after referencing multiple aged process and instrumentation diagrams (P&IDs). Conventional methods of digging such as shovels, bobcats, backhoes and bulldozers all presented additional risks to damaging underground infrastructure. Therefore the precision control method of Hydro Excavation was selected along with the critical applications expertise from MPW to resolve this operational problem.

"MPW crews conducted themselves as professionals. We are very pleased with the work."

- Quality Control Manager.

#### MPW Solution

Personnel with specialized training were dispatched to the site, equipped with proprietary tooling custom-engineered for Hydro Excavation applications. A cross-functional team of operations, maintenance and utility specialists met with plant personnel to assess the area and to complete a Jobsite Safety Analysis. Safety issues were of concern because of pressurized underground lines. MPW used 2,000 p.s.i. pressurized water and vacuuming techniques to



*MPW's Hydro Excavation process provides a safer, non-destructive digging method to traditional means of exposing underground infrastructure. Backhoes, shovels and bobcats run the risk of damaging underground infrastructure and increasing the safety and financial risks associated with a utility strike.*

effectively uncover the leak without disturbing the underground lines. The water/soil mixture was carefully loosened and immediately removed with a high capacity vacuum truck. The excavated soil slurry was vacuumed and contained within the holding box of the vacuum truck and dumped on-site, minimizing restoration costs. The non-destructive process was repeated with surgical precision exposing critical process and utility lines. The fractured pipe was located 6 feet beneath the substation concrete platform.



*Minimal labor support is required to perform MPW's Hydro Excavation services due to the propriety equipment designed by MPW's in-house engineering and fabrication department.*

## Results

The line break was discovered approximately 4 ft. from where plant personnel had anticipated that it had occurred. The use of a backhoe or digging equipment to locate the break could have been catastrophic. The Hydro Excavation method proved faster, safer and far more efficient than conventional excavation methods. MPW technicians excavated a 3 ft. x 5 ft. x 6 ft. hole in extremely hard soil conditions with surgical precision. MPW avoided overhead obstructions and any damage to the adjacent process and utility lines, which requires costly repairs. Plant personnel inspected the dig and were able to immediately repair the break. The emergency dig exceeded expectations without injury to personnel. Due to MPW's swift response, the Hydro Excavation method proved to minimize safety and financial risks as well as reduce the anticipated downtime.



*Plant personnel and MPW technicians inspect the unearthed broken process line following Hydro Excavation, verifying no visual damage to adjacent utility lines.*



*View: Underground line break exposed beneath the substation concrete platform. The removal of soil slurry made it possible for plant personnel to immediately repair the broken line, further reducing downtime.*