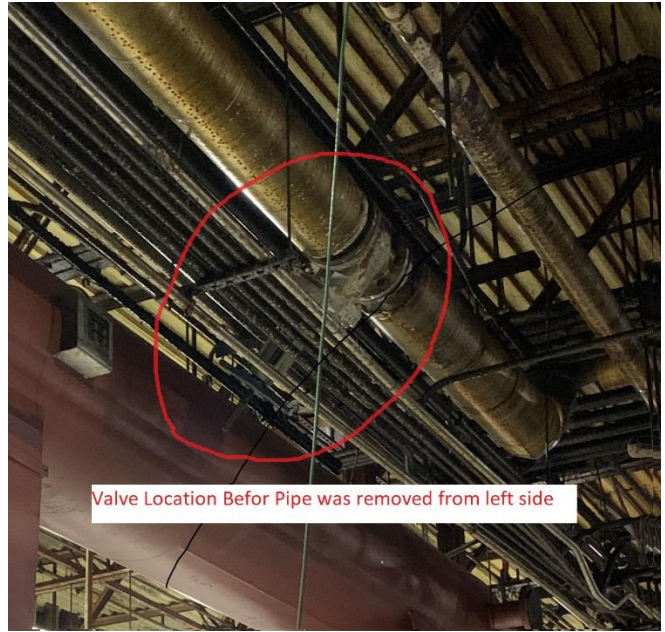


## Lessons Learned

<b>Date:</b> 6/6/2023 <b>Project:</b> Pasco LW Oberlin	<b>Region:</b> National Facility Service <b>Incident Title:</b> Lock Out Near Miss
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Summary	Picture
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Apollo was working on a boiler system for a customer which was taken off-line for a 3-week outage. Apollo was demolishing and removing heat exchangers which were a part of the boiler system. With the boiler being taken offline and a low-pressure steam line being completely removed for interference issues, a lock was not put on the closest isolation valve due to the fact the system was down and incomplete. The low-pressure lines needed to be redesigned to fit the new system. The foreman in charge of that project was pulled off before the entirety of the project could be completed. The foreman reports communicating the status of the system and isolation points before leaving to the crew that was staying to finish the work. In the following days the system owners communicated that the boiler was being fired back up and Apollo failed to verify system was safe before it was energized. When the boiler system started up, waters began spraying an employee with cold water from the incomplete low-pressure line. Had this not been the initial surge of water, it could've been hot and burned the employee with hot water.



What Went Right?	What Went Wrong?
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- No one was hurt-near miss only.
  - Foreman that started the project and left, communicated the status of the incomplete system before leaving.
- Click or tap here to enter text.

- Isolation locks were only put on one half of the system.
  - Foreman used physical disconnect as a form of isolation, believing the system was safe and did not have potential to be energized. Isolation valve was removed during demo.
  - Handoff was not thorough when leadership changed before project was complete.
  - Apollo did not hold the customer accountable for walking the system down and applying initial lockouts on the appropriate isolation valves.
  - The Apollo Project owner did not have locks applied on the system to mitigate the changing of crews and team members.
- Click or tap here to enter text.

Lessons Learned
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- Do not trust customers for controlling potential energy sources. We must follow our lock out tag out policy. Walk systems with owner and over lock on owner lock. If exceptions to the policy need to be addressed, involve safety management.
- Lockout isolation points regardless of energy source status. (i.e., empty tank vs. full tank.) Because owners can change status without our knowledge.
- Many systems can be back fed without the owner's knowledge. Use isolating valve closest to demo to ensure full safety.
- Treat everything as live energy sources.
- Whoever owns the project (is not leaving) needs to have their supervisor lock installed first and very last.