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Innovative fix at LANL keeps pit production milestones in sight

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A collaborative team of nearly 100 employees across LANL made a tremendous effort to repair a key piece of equipment in the Plutonium Facility at Los Alamos.

Los Alamos National Laboratory (LANL) is well on the path to the W87-1 plutonium pit first production unit. When a piece of equipment in the Plutonium Facility (PF-4) went down in May, teams across the Laboratory who support work in PF-4 rallied to develop an innovative fix.

In PF-4, trolley systems are used to transport special nuclear material and transuranic (TRU) waste across and out of gloveboxes. On May 3, a trolley in a pit production process room in PF-4 stopped working, and it initially wasn't clear why. Trolley systems are built into the facility, not easily accessible, and often take camera and scope systems to view in detail, so finding a fix could take many months. But with pit production milestones in sight, LANL formed an Issues Response Team to aggressively address the issue to avoid disruption to production.

Using high-definition cameras, the team accurately diagnosed the electrical issue that caused the trolley cart to stop working. They leveraged the facility's critical spares stock and 3D printing capabilities to prototype new parts.

Employees also had to find a way to keep pit production moving despite the obstacle. The team developed a short-term workaround to use bag-out processes to move production parts and TRU waste while the trolley was being repaired. This included the design, fabrication, and installation of a new bag-out port in a production room.

By June 4, just four weeks later, the trolley was up and running after the warp speed efforts of PF-4 employees.

“This is an excellent example of the improvements LANL has made with regard to more efficient and speedy recovery following off-normal events by focusing and leveraging the right resources to solve the problem,” said Ted Wyka, manager of the National Nuclear Security Administration's Los Alamos Field Office. “An issue like this would have previously taken much longer. It also showed excellent partnering by the Field Office in this response and recovery.”