

# Pressure tube removal: A primer on the Darlington Refurbishment's next segment



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**What's happening?** Pressure tubes (PT), which hold the nuclear fuel bundles that are key to making electricity, were severed from the Unit 2 reactor at Darlington Nuclear Generating Station last fall. Now, they are being removed.

**What is the duration of this work?** The scheduled duration is 34 days, including transition in, commissioning and transition out.

**What tools will be used?** This work series relies on engineered tooling mounted on the Re-tube Tooling Platform (RTP) that are controlled remotely from the Re-tube Control Centre. Tools mounted on the RTP for this work include the heavy worktable, the Super Shield Plug Insertion and Removal Tool (S-SPIRT), calandria tube (CT) guide ram installed on a pallet on the west face, and PT removal head and PT/CT flask installed on a pallet on the east face.

This will be the first time the tools will be synchronized to work together on both sides of the reactor face simultaneously and will require a greater level of coordination. Work to date has allowed the tools to work independently on each face.

**Who will do the work?** The accountability for this series is the Joint Venture group, comprised of Aecon and SNC-Lavalin, as part of the Re-tube and Feeder Replacement project. The main trades executing this work are millwrights and boilermakers, with periodic support from electricians and operators. Many of these individuals were also involved in end fitting removal and are familiar with similar tool operation and flask movement.

**What does the work entail?** Four hundred and eighty PTs will be gripped using the PT removal head, and pulled from lattice sites from the east face into a PT/CT flask. On the west, the CT Guide Ram will support the end of the tube as it is being pulled out and suspended in the calandria while it's being gripped by the PT removal head on the east.

This is followed by removal of debris and channel inspection.

**What happens to the removed pressure tubes?** The removed PT will be taken through the Darlington station to the Re-tube Waste Processing Building using the same route that was used to transport removed end fittings.

**What happens next?** Some PT may contain dummy fuel bundles. If this is the case, a robot removes the dummy fuel bundles and places them into a low level waste container. PTs are then crushed and volume-reduced into two-inch by two-inch square coupons, transferred to the appropriate waste container, and sent to the Re-tube Waste Storage Building for short-term storage.

**How will this work series succeed?** Success of this series is largely reliant on a timely transition to begin the series of work, reliable tooling performance, heightened coordination between crews working together on both reactor faces at the same time, and maintaining waste processing operations.