

Sellafield's tallest stack cut down to size

All that remains of the First Generation Reprocessing Plant stack is a 9 metre stub.

A painstaking 30-month project has removed 52 metres of the structure.

The stack had to be demolished by hand because of its proximity to hazardous nuclear buildings on the Sellafield site.

The stack

That meant traditional explosive techniques were out of the question.

Instead, workers cut away the concrete and steel stack using hand tools.

They did it while standing on a platform which clung to the chimney using friction alone.

Before demolition could start, the platform had to climb to the top of the chimney, like a monkey shinning up a tree.

It took 10 months to inch its way to the peak: 122 metres above the ground.

Then, metre by metre, teams standing on its 3 storeys cut away the stack.

Every time the platform needed to move down, it took an entire day to loosen, readjust, and then reattach the 84 pads that kept it in place.

The project is part of the 100-year Sellafield decommissioning programme being carried out by Sellafield Ltd on behalf of the Nuclear Decommissioning Authority (NDA.)

It's a collaboration between Sellafield Ltd, demolition partner Nuvia, steeplejacks Delta International, and lift operator Alimak.

Another dozen or so companies have provided specialist skills and equipment.

John Daniel, construction manager for the project, said:

The team have been working on this project for just over 1000 days.

This was a tough task, which had to factor in the Cumbrian weather. In fact, our plans were impacted by the weather on 300 days.

Despite this, the team have delivered the project safely and effectively.

They have removed over 400 tonnes of concrete and 30 tonnes of

steel, while carrying out over 200,000 individual tasks, and 340,000 checks. Strong human performance behaviours have been an important part of this success.

Having done its job, the climbing platform will now be dismantled. A decision will be taken soon on whether to remove the final few metres of the stack or whether to focus on other priorities and come back to job later.

Explosive, compressed air, or water-related demolition techniques are usually used to remove chimneys.

When the 4 Calder Hall cooling towers were demolished in 2007, in a less built-up area of the Sellafield site, it took about 2 minutes.

But those options weren't available this time.

And the tricky nature of the job wasn't the only complicating factor.

Because the chimney provided ventilation to other buildings, a new stack had to be built elsewhere on the site and those ventilation lines re-routed.

The new chimney – known as the Separation Area Ventilation project – began operating in 2016.