

Innovative Engineering Solution for Nuclear Industry



Overview

BNFL needed to perform modification work on remote pipe connections.

Project

Hot Tapping Technique Provides Solution for Adding New Branch Pipe Remotely

TEAM Service

Hot Tapping

Location

British Nuclear Fuels (BNFL), Sellafield Plant

The Need and Challenge

BNFL needed to perform modification work on a pipeline within the Sellafield plant, involving the attachment of a branch outlet so that additional pipe work could be added. Remote operation was an essential as work needed to be undertaken within a radioactive area of the plant.

Solution and Outcome

Because of its range of specialty services, expertise and knowledge of the appropriate techniques, TEAM was called in. A purpose-engineered fitting

was produced, designed to be remotely clamped round the pipe, using master-slave manipulators. Unique clamping and guidance devices were designed to aid installation and stop the fitting twisting round or slipping down the vertical pipe.

In order to introduce the branch outlet a special mechanical hot tap tee, compatible with Sellafield's existing remote pipe connection systems, was developed. A bespoke drilling machine, purpose-modified for remote operation, was also developed to break into the existing pipe work, once the

clamping ring was securely in place. A further factor affecting design was the highly radioactive and chemically aggressive pipeline content, which meant that neither elastomer sealing connections nor metal seals were suitable. Instead TEAM engineers used graphite to provide the essential effective seal.

This hot tapping technique provided a simple solution to the problem of adding a new branch pipe remotely.

This work may have been performed by a company subsequently acquired by TEAM.