

Particles Clean-up



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Manager: **Phil Cartwright**

Completion date: **2020s**

Cost: **£18-25M**

Supported by: **Nuvia Ltd, Fathoms**

Completion date and cost are current estimates, subject to NDA approval

Fragments of irradiated nuclear fuel and irradiated steel, known as particles, were released into the sea, mainly via the active liquid drainage system, during reprocessing at Dounreay.

The total number of particles released is not known. Wave and tidal currents move particles around in the seabed sediment, mainly in a north-easterly direction from the old diffuser. Since 1983, over 1,400 particles, similar in size to a grain of sand, have been found and retrieved from the seabed and from nearby beaches.

Dounreay Particles Advisory Group (DPAG)

An expert body was established by the Scottish Environment Protection Agency (SEPA) in May 2000 to provide independent scientific advice to SEPA and Dounreay. The group has categorised particles as minor, relevant or significant based on their activity and potential health effects.



Beaches

Several local beaches are monitored regularly to a programme regulated by SEPA. When a particle is detected it is recovered and taken back to site for analysis. The risk to the public is considered low, so none of the beaches used by the public has been closed.

Offshore

A succession of seabed surveys by divers and a remotely-operated vehicle have built up a map of the particle population offshore. Particles, which are generally more active than those found on public beaches, have been found on the foreshore and seabed close to Dounreay, and fishing is banned in this area.

Clean-up

Following public consultation on the options, the site is proposing to clean-up areas offshore which are known to contain the highest activity particles. This work is expected to be carried out over a four year period with a further three years of re-monitoring and recovery. The information gained will provide a better understanding of an acceptable end point for particle clean-up. Onshore monitoring and recovery will continue until the seabed clean-up is shown to be effective.



A typical beach monitoring machine



Remotely operated vehicle for seabed monitoring



Dounreay foreshore



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