

“Spin – Off from decommissioning.”

Application to New Build

A presentation to the IDN – Vienna
4 November 2008

- by -

A.F. McWhirter

United Kingdom Atomic Energy Authority

What is decommissioning ?







So what's the big issue?



A Nuclear Site Licence !

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible
- Waste volumes exceed any original design intent

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible
- Waste volumes exceed any original design intent
- Staff knowledge of operating history lost

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible
- Waste volumes exceed any original design intent
- Staff knowledge of operating history lost
- Staff trained to operate are not trained to decommission.

*Let the licence
Guide you !*

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date.

Ensure that a proper drawing registry with configuration control is set up to manage drawings during design, construction and operation (LC 6, LC19)

- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible
- Waste volumes exceed any original design intent
- Staff knowledge of operating history lost
- Staff trained to operate are not trained to decommission.

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned

Using modern 3-D software and where possible actual equipment, rehearse the decommissioning operation as it is planned to be conducted. (LC 35)

- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible
- Waste volumes exceed any original design intent
- Staff knowledge of operating history lost
- Staff trained to operate are not trained to decommission.

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'

Ensure in the design of new plant that facilities are constructed within the plant to facilitate decommissioning or leave access points to allow their introduction. (LC35)

- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible
- Waste volumes exceed any original design intent
- Staff knowledge of operating history lost
- Staff trained to operate are not trained to decommission.

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route

Material selections should be made based not just on fitness for purpose but also on disposal ability. Record this for the benefit of environmental legislators. (LC32, LC33)

- Wastes become mixed making disposal impossible
- Waste volumes exceed any original design intent
- Staff knowledge of operating history lost
- Staff trained to operate are not trained to decommission.

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible

Plan properly for the normal and fault operation of plants and design in suitable containments to cover all foreseeable circumstances. (LC 32, LC33, LC34)

- Waste volumes exceed any original design intent
- Staff knowledge of operating history lost
- Staff trained to operate are not trained to decommission.

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible
- Waste volumes exceed any original design intent

Produce a detailed decommissioning plan with waste volumes estimated, temporary storage arrangements, containers, conditioning and disposal arrangements built in. (LC32, LC33, LC35)

- Staff knowledge of operating history lost
- Staff trained to operate are not trained to decommission.

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible
- Waste volumes exceed any original design intent
- Staff knowledge of operating history lost

Don't rely on staff memory. Produce detailed operating method statements, and stick to them. Record all activities. (LC6, LC25)

- Staff trained to operate are not trained to decommission.

A small selection of decommissioning difficulties / challenges

- Drawings are missing / out of date
- Items were not designed to be decommissioned
- Plant was assembled when 'inactive', but has to be dismantled 'active.'
- Wastes arising have no approved disposition route
- Wastes become mixed making disposal impossible
- Waste volumes exceed any original design intent
- Staff knowledge of operating history lost
- Staff trained to operate are not trained to decommission.

Decommissioning should be seen as a routine operation. Treat decommissioning as a major plant modification and use the approved modification procedure. (LC10, LC20, LC22, LC35)

Rehearse decommissioning just as you rehearse Emergency Arrangements!

Benefits for New Build

Drawing registration and quality procedures for decommissioning provide better design management during construction.

Benefits for New Build

Drawing registration and quality procedures for decommissioning provide better design management during construction.

If it's easy to remove something during decommissioning, it's easy to install it during construction.

Benefits for New Build

Drawing registration and quality procedures for decommissioning provide better design management during construction.

If it's easy to remove something during decommissioning, it's easy to install it during construction.

Building in the facilities for remote handling usually involves more space. This is equally useful during construction and operation.

And Finally !

In most countries, no new nuclear power plants have been built for several decades.

And Finally !

- In most countries, no new nuclear power plants have been built for several decades.
- There is a shortage of staff with nuclear knowledge

And Finally !

- In most countries, no new nuclear power plants have been built for several decades.
- There is a shortage of staff with nuclear knowledge
- It is possible to use the experiences of decommissioning to train staff in some of the aspects of nuclear technology that will be required during the construction of new plant

***The main issue for
nuclear construction
is working in a licensed
environment.***

***Use decommissioning
to train staff in operating
under a licence !***

www.hse.gov.uk/nuclear/silicon.pdf