

First decide to treat spent fuel from Sizewell B and any new light water reactors separately from stocks at Sellafield, both current and that which will be sent to Sellafield from gas cooled reactors and possibly military sources.

Second decide to investigate the possibility of geological disposal beneath the site or under the sea with access from Sellafield or the site where the spent fuel is generated. If this is possible then it should be easier to argue that geological disposal at the site is safer than the alternative which is to store above ground. The only extra disruption to the local community will be the construction of the repository.

The two 1.6GW(e) stations planned for Hinkley Point C will produce 7,200 spent fuel assemblies assuming the predicted high burn-up is consistently achieved. The actual number could be as much as 20% higher than this. It represents about one fifth of the size of the geological disposal site size needed for all the existing high level legacy waste.

If a second station is also built at Sizewell the waste repository would be similar to that for Hinkley.

These station repositories could be started or explored and tested at the same time as the new stations are constructed so reducing the disruption to the local community. However the repository would not need to be commissioned until about 90 years after the commissioning of the power station and would not be closed at least until 90 years after the closure of the last power station on the site.

This proposal has the added advantage that the full cost of nuclear power from these sites will be transparent.

The site may not be ideal from a geological standpoint and may therefore require costly engineering to meet geological isolation requirements but this is no different from the current policy.

The other potential disadvantage is that it may make new sites for nuclear power stations more difficult to obtain.

If a site is totally unsuitable from a geological perspective then spent fuel could be transported to another power station site however this could mean that planned repositories have to be larger than that based on the output from the site stations alone.

This does not solve the Sellafield problem if locations that could be accessed from the site are totally geologically unsuitable and cannot be engineered safe. I trust this is not the case as so much effort has been expended on the "West Cumbrian Option".

Hope this helps

REDACTEDREDACTEDREDACTEDREDACTED
Lancaster University REDACTEDREDACTEDREDACTED.