

**Radiation (Emergency Planning and Public Information) Regulations
2019**

Consequences Report for Hunterston A Decommissioning Site

The following report is provided to the North Ayrshire County Council in accordance with REPIR 2019, Regulation 7(5), with the particulars of the report in accordance with REPIR 2019 Schedule 4.

Factual Information

(a) The name and address of the operator:

Mr J Grierson, Regional Closure Director,
Magnox Ltd.,
Hunterston A Decommissioning Site,
West Kilbride
Ayrshire
KA23 9RA

(b) The postal address of the premises:

Hunterston A Decommissioning Site,
West Kilbride
Ayrshire
KA23 9RA

Hunterston A is a decommissioning nuclear power plant site, without a significant presence of irradiated fuel.

(c) The date on which it is anticipated that work with ionising radiation will commence:

Work with ionising radiation is already underway at the premises.

Recommendations

(a) The proposed minimum geographical extent, if any

There is no distance beyond the site's boundary fence within which urgent protective action to mitigate harm from the unintended release of radioactive material may be needed.

It is recommended that no detailed off-site emergency planning is required.

Rationale

(a) The rationale for the above recommendation on the minimum distance for which urgent protective action may be needed is as follows:

Assessment carried out by Magnox Ltd has established that there is no event, whether caused by error or omission by the operators or caused by external factors, which can credibly result in the release of sufficient radioactive material from the Hunterston A site to the atmosphere to cause public serious harm. As such, there is no scenario where urgent protective action to reduce public dose uptake is needed.

There is a region close to the site where protective actions to mitigate public dose uptake could be considered in the highly unlikely event of a large aircraft impacting the site. If the impact were directly onto waste bunker 1 (a relatively small facility on the site), the resultant aviation fuel fire will cause the release of some radioactive particulates into the air. For members of the public within 500m of the site boundary, their dose could possibly exceed the lower ERL for sheltering (the point where the option to shelter the public should be considered) but nowhere beyond the site fence will it exceed the upper ERL for sheltering (the point where urgent protective action should normally be taken).

It has been established by assessment that in the most unfavourable weather conditions, the consequences of a large aircraft impact directly on to bunker 1 could lead to a dose of up to 32mSv.

This is for a member of the public who is as close as possible to the event, and who remains there for the whole period that the fires continue. However, if the weather was typical for the location (i.e. a moderate breeze), the dose would only be up to 9mSv and then only if the wind was blowing directly towards the person. The majority of this dose uptake will arise whilst the fires in the bunker continue to burn, with the dose uptake caused by inhalation of the radiologically contaminated smoke. Whilst it would be appropriate to consider asking the public at this close location to take shelter to avoid dose uptake, given the true nature of the event (a catastrophic aircraft impact with a debris radius likely to be of the order of a few hundred meters) and the trivial health significance of the predicted dose, it would be difficult to judge this action should be a priority.

The consequences of the scenario reduce with distance. For weather which is typical for the site, the dose received during the whole course of the event will only exceed 5mSv within a distance of 170m from the bunker (effectively, this covers a 200m stretch of the public road passing the site; and only when the wind is blowing from the East). For people beyond this distance, the dose is sufficiently small it is unnecessary to take any action to mitigate the dose. It is likely that any actions taken by the authorities, such as requiring the public to shelter or to evacuate the area, will do more harm than that arising from the unmitigated dose.

Bunker 1 is currently being emptied of radioactive materials. It is anticipated that by the end of 2020, the bunker will have been emptied and after that time there will be no further scope for an event, of any credible nature, to result in a significant release of radioactive material from the Hunterston A site.