



BANNG
Blackwater Against New Nuclear Group



Comments on the UK HPR1000 reactor design and technology

Comments on Stage 2 of the GDA process from the Blackwater Against New Nuclear Group (BANNG)

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Introduction

Currently Bradwell is the only location under consideration for a UKHPR1000, but the GDA process does not include consideration of the suitability of the Bradwell site for a high output reactor (or multiple reactors). The GDA process is however seen as 'assuming' the suitability of Bradwell for a new high output NPS and the developers naturally make every effort to support this view in order to reduce opposition. This submission focuses on some of the main reasons to rule Bradwell out before embarking on consideration of the general details of reactor design.

Flood Risk

The site is already at high flood risk level 3. The accelerating deterioration of polar ice fields over recent years was not predicted to occur so soon and the uncertain sea level rises from this mean reliable predictions for inundation of this area and its environs over the next 150 to 200 years are impossible, making it a very high risk choice of location.

Radioactive waste and Spent Fuel

Spent fuel will require safe storage on site for a total of some 160 years or even indefinitely if no UK GDF is available. Defending this hazardous waste alongside the decommissioning reactors many years after electricity has ceased production will become a difficult, costly, and perhaps impossible burden for future generations.

Cooling

The Blackwater Estuary is relatively shallow and has a very low refresh rate due to its length, coupled with minimal freshwater inflow. Cooling of the 250 Mw Bradwell A nuclear power station caused environmental damage and bleaching of the seabed for several miles either side of the cooling inlet and outlet. Native oysters also disappeared from the northern shore of the Bradwell coastline. Six months after the closure of the power station in 2002 this coastline

began to regenerate along with new oysters. The old power station required 1.88 million tons of cooling water per day and whilst the cooling water requirements of a single Hualong One have yet to be divulged (although it must be known by the designers). It is clear that at some 1.2 Gw output it will be higher, probably in the region of 4 to 5 million tons per day, inevitably leading to greater environmental and ecological damage. Use of 4 or 5 kilometre cooling pipes (EA Evidence 'Protection of biota from cooling water intakes at nuclear power stations: scoping study, 6th Aug 2018) will not dramatically improve access to plentiful water at all tidal times due to the extensive mud flats and shallows to the east of the development site. The risks to existing oyster and fishing industries from the considerable volumes of cooling water required with temperature and pressure damage, together with biocide use, impingement, entrainment and entrapment of marine life throughout the marine food chain should also rule out this proposal in this particular location.

Environment

The Blackwater Estuary has multiple environmental protection area designations throughout, extending around the proposed site. It has recently been designated a Marine Conservation Zone. There is no reference as to how irreparable damage to these areas and their protected species will be avoided. This should not be considered as an afterthought but rather as a prerequisite to general design details. The disruption and damage from construction, landing jetties, excavations and general industrialisation of this coast further adds to ecological and amenity damage. Alternative cooling could be achieved with a number of cooling towers, but the consequent amenity damage and its negative effect on the adjacent pleasure beaches, sailing, tourism and holiday industries would cause major economic damage which is not recognised by Bradwell B, unlike their claims of economic benefit to all communities from a new new nuclear power station.

Major Incident

In the event of a major incident it would prove very difficult to evacuate local communities, with effects being experienced over a very wide area.

Infrastructure Involvement

There are many who question the wisdom of inviting a potentially hostile country with a highly questionable human rights record, and where dissident critical voices are suppressed or eliminated, to have control over such a major and potentially hazardous part of our national infrastructure and where a cooperative, open and trustworthy relationship will be required over possibly hundreds of years. It cannot make any sense at all. The timescales are just too long and the risks too high.

Prepared on behalf of the Blackwater Against New Nuclear Group (BANNG)

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On behalf of the Blackwater Against New Nuclear Group (BANNG)

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