



Together Against Sizewell C

Three new environmental permit applications for the proposed Sizewell C power station site, Sizewell, Suffolk, IP16 4UR

A response from Together Against Sizewell C:

Sizewell C is, at the time of writing, at least 15 years away from being ‘deployed’, if it ever is. For these permitting consultations to be carried out so far in advance of such a contentious and uncertain development coming to fruition is bizarre, especially in light of the fact that authorised discharge levels are likely, in that period of time, to be dramatically reduced as more evidence is brought to light on the issue of low level radiation and its effects on health, especially the health of children, and force the authorities to accept the inadequacies of the current regime.

TASC 30 September 2020

Opening statement on EA’s website in respect of the three permitting consultations:

Any company that wants to operate a nuclear power station will have to show that it can build, commission, operate and decommission it safely and securely, whilst protecting the environment and managing radioactive waste.

TASC response:

EdF does not meet any of these criteria and therefore does not qualify as a competent developer. It has admitted in the DCO documentation that it does not have the funds with which to construct the plant or even fund the compulsory purchases required. If it can’t build the plant, then how can it possibly satisfy EA’s criteria? It has not shown that it can build, commission, operate nor decommission an EPR safely: both Flamanville and Okiliuto are behind schedule and massively over-budget, hardly demonstrating competence in any of these areas. No company with aspirations to be a nuclear plant operator can possibly meet the decommissioning criterion: no UK plant has ever been decommissioned, so how can EdF demonstrate to EA’s low-bar standards that it can do so? As for conventional safety, EdF has a track record of imposing lax Covid-19 controls on its workforce at the Hinkley site. In June 2020, a silo collapsed on the Hinkley site. In terms of radiological safety, any discharge resulting in exposure to the workforce or the public is unsafe, as the EA itself admits. How, then, can EdF demonstrate that it can safely and securely operate a nuclear power station?

A new Radioactive Substances Activities environmental permit application (reference EPR/HB3091DJ/A001): this is for the proposed disposals of radioactive waste to air, water and by transfer. Following our determination of this application, we will only issue an environmental permit if all legislative requirements are met. Any granted permit will require the operator to minimise the radiological impact on people and the environment.

TASC response:

The meeting of legislative requirements which appear to be the criteria used to determine the application, represent a false standard in that the legislative requirements themselves are based on flawed science, ignorance and a refusal of the regulatory authorities to engage with the growing body of evidence which strongly suggests that contemporary exposure limits are woefully underestimating the true impact of ionising radiation. The 'linear no threshold' principle which underpins authorisations for radioactive waste discharges has long been discredited as flawed: the relationship between 'dose' and 'risk' from that dose can no longer be relied upon and therefore even tiny doses, such as those from alpha-emitting 'hot particles' of plutonium and uranium, which are incapable of detection by 'groundhog' machines which scour the beaches of Cumbria to suck up such material, are now thought to deliver a concentrated dose to a small group of cells within the body after ingestion or inhalation.

In the light of these uncertainties, minimising the radiological impact on people and the environment is itself a hollow statement and offers no comfort to those living and working in close proximity to the plant. The EA should set a level of exposure which they are confident is safe and hold operators to that limit rather than asking them to adhere to the 'as low as reasonably achievable' principle which simply allows discharges to increase to the level of funding a company is prepared to commit to reduction strategies. That presents the problem of determining what is a 'safe' level and, as there is no absolute safe level and as the basis on which radiological protection is founded is deeply flawed, it would seem that no company can meet these criteria with confidence. The EA should have the courage to acknowledge these uncertainties, draw them to the attention of the Department of Health, BEIS and other agencies such as the Committee on the Medical Aspects of Radiation in the Environment, and urge a thorough examination of the glaring inconsistencies in the 'linear no threshold' approach and the discrepancies between theoretically predicted outcomes from radiological incidents and the actual health consequences experienced.

The EA operates a yardstick by which it assumes that the maximum risk presented by any nuclear facility must cause no more than one fatal cancer in a million people (the 10⁻⁶) principle. This is a placatory and entirely theoretical yardstick which has more to do with encouraging acceptability in the population than it has to do with science. It can no more be demonstrated than can the other fatuous claim made by regulators about the safety of the dose to the workforce or to the public as a result of an accident.

A new Combustion Activities environmental permit application (reference EPR/MP3731AC/A001): this is for the proposed operation of diesel generators to be used to provide back-up electrical supply at the site. Following our determination of this application, we will only issue an environmental permit if all legislative requirements are met. Any granted permit will require the operator to minimise the impact of this plant on people and the environment.

TASC response:

There is not much to be said about this proposed permit application beyond pointing out the irony of using diesel back-up in what is supposed to be a state-of-the-art nuclear plant, especially as diesel is being phased out as an environmentally harmful material. It would be useful if the EA made public the level of particulate contamination from the diesel generators and the public health threat they pose.

A new bespoke Water Discharge Activities environmental permit application (reference EPR/CB3997AD/A001): this is for the proposed discharges of cooling water and liquid process effluents during operation of the power station. Following our determination of this application, we will only issue an environmental permit if all legislative requirements are met. Any granted permit will require the operator to minimise the potential for pollution, thereby protecting the environment and human health.

TASC response:

The intake and discharge of cooling water for a notional Sizewell C is a contentious issue in that there are three major areas of concern: radioactive contaminants in water discharges after it has done its job of cooling, thermal pollution from heat picked up during the water's journey around the reactor and the effect on fish and marine life due to the huge daily intake of water.

Details of these areas of concern are unknown to the author of this response and therefore only generalisations can be made at this point.

Radioactive contamination: the water picks up neutron contamination through the reactor activity on its way through the machine. The effect on the marine environment, on people swimming in the sea affected by the contamination is unknown.

Thermal contamination changes water temperature and can force marine life to migrate away from the area, causing a change in the biodiversity of the location. It can cause oxygen depletion and increased bacteria levels. It can also cause algal blooms, in extreme cases resulting in a reduction in light penetration and hence the photosynthesis process.

Marine life has a natural rhythm of growth and metabolism. The rapid increase in water temperature can affect this pattern negatively, causing an unnatural speeding up or a slowing down of the metabolic rate, resulting in a change in feeding habits and the upsetting on the balance in a stable marine ecosystem.

Many nuclear reactors around the world have been brought close to closure due to the rise in cooling water caused by climate change. The further increase in water temperature brought about by thermal pollution will only serve to exacerbate this problem as time passes and as the effects of climate change become more apparent.

Sizewell C, if it is ever built, is likely to require a massive 120,000 litres of cooling water every second. If a fish and marine life deterrent system is not fitted, probably due to the fact that cash-strapped EdF refuses to pay for it, the effect on fish will be catastrophic. Huge numbers of fish and other marine wildlife will be sucked into the intake pipe and spat out into the marine environment in a mutilated state. Surely this cannot be allowed to happen and the Environment Agency will rightly be accused of impotence and forelock-tugging to the nuclear industry if it allows such an environmental crime to occur.

Text of a recent email to Alan McGoff, policy lead for new nuclear build at the Environment Agency:

At the recent EA/NGO telephone conference to discuss EA environmental permitting for a notional Sizewell C, you kindly suggested that any information I wished to pass on to you relevant to low level radiation would be taken up with Public Health England.

To that end, I draw your attention to the weblink for the Children with Cancer UK-funded report on ionising radiation which clearly demonstrates that evidence from around the world points to far greater health impact than predicted from currently accepted dose/risk models (see: <http://www.llrc.org/children.htm>). I would be pleased to hear PHE's reactions to this report and, more specifically, to the question:

With reference to the communication recently submitted to Health Physics by Dr. Busby



[of radiation limits...](#)

(attached) will EA ask PHE to appraise the dose from uranium234 to the Life-Span Study population and will they consider the impact of that information on the reliability of ICRP risk factors as applied to the SZC fuel cycle cradle to grave?

In terms of more general questions, I would appreciate EA's response to the following:

1. At what point does the EA say to government that the environmental impact of a notional Sizewell C on the proposed site is too great?
2. What yardsticks does the EA use in terms of tonnage of fish killed, acres of AONB destroyed, hours a day of noise and dust created, potential impacts from coastal erosion etc before it advises HMG that the development should be halted?
3. What will be the total gaseous alpha emissions and total particulate alpha emissions from the notional Sizewell C plant in terms of volume over the lifetime of the plant?
4. In what isotopic form will these emission be?
5. What size will the particulates discharged be?
6. How will the size of the particulates be monitored?
7. How will the EA calculate the health impact of these discharges?
8. Will the EA calculate a range of potential health impacts using ICRP/PHE recommendations as well as those from the European Commission on Radiation Risk (ECRR) – i.e. optimistic and pessimistic?

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9. Will their calculations and results of expected health impacts be made public and if not, why not?

I look forward to your responses at your earliest convenience, Alan, and thank you in advance for your considered replies and for those from PHE.

With kind regards,

Pete Wilkinson

Chairman TASC