



UK Health
Security
Agency

Environmental Hazards and Emergencies Department
Seaton House, City Link
London Road
Nottingham, NG2 4LA

nsipconsultations@phe.gov.uk
www.gov.uk/ukhsa

Your Ref: EN010012
Our Ref: 59152CIRIS

Mr Gareth Leigh
Head of Energy Infrastructure Planning
Department for Business, Energy & Industrial Strategy
1 Victoria Street
London
SW1H 0ET

8th April 2022

Dear Mr Leigh,

**Nationally Significant Infrastructure Project
Sizewell C Nuclear Power Station
Examination Procedure**

UK Health Security Agency confirms that a letter reporting our agreement with the Statement of Common Ground was sent to the applicant on 1st June 2021. This response is included as Appendix 1 to this letter.

Yours sincerely,

On behalf of UK Health Security Agency
nsipconsultations@phe.gov.uk

Please mark any correspondence for the attention of National Infrastructure Planning Administration



Public Health
England

Environmental Hazards and
Emergencies Department
Centre for Radiation, Chemical and
Environmental Hazards (CRCE)
Seaton House
City Link
London Road
Nottingham NG2 4LA

nsipconsultations@phe.gov.uk

www.gov.uk/phe

Your Ref: EN010012

Our Ref: CIRIS 57068

Ms Rebecca Calder
Planning Manager SZC Project
EDF Energy – Nuclear New Build
The Qube
90 Whitfield Street
London
W1T 4EZ

01 June 2021

Dear Rebecca,

**Nationally Significant Infrastructure Project
Sizewell C Statement of Common Ground, PINS reference EN010012**

Public Health England (PHE) held a meeting with yourselves on 29 April 2021 to discuss the proposed Statement of Common Ground (SOCG). An updated SOCG was received from yourselves on 17 May 2021. PHE does not typically sign the statement of common ground document but prefers to provide our comments in the form of a letter. This has always been acceptable to the Planning Inspectorate (PINS).

Following receipt of the updated SOCG, we have reviewed your comments and have provided responses as detailed in Appendix 1.

Yours sincerely,

On behalf of Public Health England
nsipconsultations@phe.gov.uk

Please mark any correspondence for the attention of National Infrastructure Planning Administration.



Appendix 1. Updated Statement of Common Ground, Position of Parties

Ref.	Relevant Rep.Matter	SZC Co.'s Position	PHE's Position	Further Action Required	Agreed / Not Agreed / In Progress
PHE 1	Thank you for your consultation regarding the above development. Public Health England (PHE) welcomes the opportunity to comment on your proposals at this stage of the project. Our records show that we have previously responded to the following enquiries / consultations regarding this proposal: PHE has considered the submitted documentation and we can confirm that we have registered an interest on the Planning Inspectorate Website and have commented on the following matters.	Noted. No further action	No further action.	None.	Agreed.
PHE2	The potential for minor air quality impacts on a number of human receptors has been highlighted in the Environmental Statement (ES) of different components of the project, as well as during assessment of wider project elements. This includes particulate matter emitted during	The judgement placed on defining health significance was one of professional opinion, underpinned by the evidence provided in the ES (Doc Ref. 6.3), and reinforced though a precautionary approach where all residential receptors are considered uniformly sensitive.	With respect to the phrase ' <i>air quality objectives protective of the environment and health are met</i> '.	See PHE's position.	

	<p>construction and nitrogen dioxide (NO₂) associated with road traffic activities. The supplied methodology indicates that the final conclusion on significance rests with the expert's professional judgement. However, where increases (albeit small) in concentrations of air pollutants have been identified at receptors locations, the level of detail justifying why no further mitigation is required is very limited. Further detail would be useful.</p>	<p>With reference to air quality, following a review of the air quality assessment outputs, the relative change in concentration and exposure for NO₂, PM₁₀ and PM_{2.5} at all receptors are orders of magnitude lower than is required for any quantitative exposure response assessment, from any construction and operational activity (including at the main development site, from transport beyond the site, at all associated developments and from the combined heat and power facility).</p> <p>As detailed in Para 28.6.146 of Chapter 28 (Book 6, Volume 2), from a health context, the only significant operational emission was from the periodic testing of the Loss of Onsite Power (LOOP) backup generators. However, even here, the change in concentration and exposure is orders of magnitude lower than is required to quantify any manifest health outcome. This risk was set into context through a hypothetical assessment which demonstrated that even if a quarter of the population within East Suffolk would reside at the location with the maximum change in emission concentration for an entire year, there would still be no measurable health impact. This hypothetical assessment applied the higher risk ratios from the WHO Health Risks of Air Pollution in Europe – HRAPIE Project, over those outlined by the Committee on the Medical Effects for Air Pollution as they are higher,</p>	<p>As there is no threshold, PHE would suggest re-wording this to "where the air quality directive limit and target values are met"</p>		
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		<p>and further reinforce the highly precautionary assessment.</p> <p>The geographic and temporal distribution of emissions sources was such that the concentration and exposure do not present a cumulative risk (i.e. the distribution spatially and in time does not present any risk of cumulative exposure or public health impact).</p> <p>These findings set the basis to the professional judgement on significance, where all air quality objectives protective of the environment and health are met, and the relative change in concentration and exposure are insufficient to quantify any manifest health outcome (be it adverse or beneficial) forming a very low impact.</p> <p>When applied alongside the inherently precautionary approach where it is assumed that that the entire population within the study area are of uniformly high sensitivity to changes in air quality, the significance is still negligible.</p>			
PHE3	The modelling method for traffic (roadside) also assumes that emissions will decrease in proportion to the legislated requirement. The applicant would benefit from undertaking appropriate sensitivity analysis to assess the effects of model	As above, the change in construction exposure of non threshold emissions such as NO ₂ , PM ₁₀ and PM _{2.5} at any receptor modelled is orders of magnitude lower than is required to quantify any manifest health outcome (be it adverse or beneficial).	Resolved, no further comments.	No further action.	Agreed.

	<p>assumptions, particularly at the discrete sensitive receptors where increases in air quality have been predicted. As stated in our section 42 consultation response, reducing public exposures to non-threshold pollutants (such as particulate matter and NO2) below air quality standards has potential public health benefits.</p>	<p>Sensitivity analysis is not required, and best demonstrated through the hypothetical assessment of risk for the LOOP backup generator emissions. Even when overestimating population exposure (where it is assumed a quarter of East Suffolk live outside for an entire year in the highest process contribution), the relative change is still insufficient to result in a measurable health outcome. The proposed project does not materially impact upon air quality standards protective of health, and the relative change in concentration exposure remain orders of magnitude lower than is required to quantify any manifest health outcome.</p>			
PHE4	<p>We support approaches which minimise or mitigate public exposure to non-threshold air pollutants, address inequalities (in exposure), and maximise co-benefits (such as physical exercise) and encourage their consideration during development design, environmental and health impact assessment, and development consent.</p>	<p>Noted.</p>	<p>Resolved, no further comments.</p>	<p>No further action.</p>	<p>Agreed.</p>
PHE5	<p>It is also not always clear whether activities or processes which are subject to alternative regulatory assessments have been included within the cumulative assessments.</p>	<p>Emissions permitted under other regulatory regimes have been considered as part of the baseline modelling to which emissions from the proposed development have been added. Cumulative assessment with other projects that do not form part of the baseline assessment is presented within</p>	<p>Resolved, no further comments.</p>	<p>No further action.</p>	<p>Agreed.</p>

		Volume 10, Chapter 4 of the ES (Doc Ref. 6.11) [APP-578].			
PHE6	<p>At Section 42/Scoping stage, PHE provided the following response:</p> <p><i>“[The ES] must ensure that the chapter relevant to human health is sufficiently comprehensive and not significantly reliant on cross referencing to multiple other chapters.</i></p> <p><i>“The ES should clearly identify the vulnerable populations that are being scoped into or out of any assessment and provide clear justification. The assessments and findings of the ES and any EqIA should be cross referenced between the two documents, particularly to ensure the comprehensive assessment of potential impacts for health and inequalities and where resulting mitigation measures are mutually supportive.</i></p> <p><i>“It is important that mental health and wellbeing is included within the HIA or population and human health assessment within the EIA. The previous third stage consultation of the draft PEIR included references to the assessment of effects on mental health of the local community and workforce. There should be parity between mental and physical health in the HIA, including suicide.”</i></p>	<p>The coverage of human health is through a dedicated Health and Wellbeing chapter (Book 6, Volume 2, Chapter 28) that draws from and builds upon the outputs of the supporting technical disciplines alongside an appropriate baseline to investigate how a community might respond to the individual health pathways directly attributable to the construction and operation of the proposed development. This has been applied to firstly inform and aid in the refinement of the application to design out and manage potential public health hazards, while exploring opportunities to facilitate health benefit uptake tailored to local circumstance, priority and need. The consequent health assessment then investigates and assesses the potential outcome, and provides an evidence based professional judgment on significance separate from the supporting technical disciplines.</p> <p>Chapter 28 has sought to minimise unnecessary repetition through cross referencing to the supporting technical disciplines (air quality, noise, transport, socio-economic, radiological etc). This is necessary to prevent the health chapter repeating large swathes of the ES and its technical appendices, and to prevent an</p>	Resolved, Local liaison arrangements in place to identify and agree mitigation for unintended consequences or unforeseen impacts.	No further action.	Agreed.

	<p>The applicant has not addressed PHE's above recommendation as discussed in more detail below.</p>	<p>unwieldy document for stakeholders and the public alike.</p> <p>The baseline clearly establishes local health circumstance, and the assessment has applied a consistently conservative approach, where all residential receptors are considered sensitive to every health pathway assessed. On this basis, relative sensitive is reported, and vulnerability is considered a constraint for all of the health pathways assessed.</p> <p>Regarding equality, the construction and operation of the proposed development does not discriminate against any protected characteristics, and while the health and wellbeing assessment is inclusive, considering community wide effects (including any circumstance that might result in a disproportionate outcome upon any sensitive group), the Equality Statement (Doc Ref 5.14) considers the protected characteristics detailed in the Equality Act. Neither the ES nor the Equality Statement report any disproportionate risk within the communities and protected characteristics investigated, and both explore ways to improve equality opportunity and cohesion. The interface for this is discussed in Chapter 28, Para 28.3.5.</p> <p>As detailed in Chapter 28, para 28.3.5, the health and wellbeing assessment considered both physical and mental health, through</p>			
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		<p>the consideration of both social and environmental determinants of health via a hazard source-pathway-receptor assessment approach. Mental health outcomes are reported in terms of stress and anxiety from changes in social structure and environmental change, and are further addressed through a discussion on risk perception. Planning, mitigation and community support initiatives are all geared to addressing the tangible aspects with the potential to impact upon mental health, partly as this allows the greatest opportunity for intervention, but largely as there are no quantitative exposure response functions that could be applied for mental health outcomes from what is proposed.</p> <p>On this basis, the PHE recommendation was applied to test how the proposed project might influence both community and construction workers' physical and mental health. Design and mitigation are further applied to address all tangible aspects with the potential to impact upon mental health, and further expanded upon to address unsupported perceptions of risk, that can in itself, lead to unnecessary stress and anxiety.</p> <p>SZC Co. notes that it is important to PHE to know there are mechanisms in place with local stakeholders to liaise, discuss and respond to any issues arising. The Draft Section 106 Agreement [PDB-004] - latest</p>			
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		<p>draft at Deadline 2 will be (Doc. Ref 8.17(B)) sets out:</p> <ul style="list-style-type: none">• Schedule 4 - sets out the proposed structure and membership of the Community Safety Working Group which will provide governance for the funds in Schedule 5.• Schedule 5 - sets out “Local Community Safety and Community Health Measures” which are measures undertaken or commissioned by ESC that focus on the promotion of community safety, wellbeing, cohesion and health and the “Public Services Resilience Fund” for SCC to deliver Local Community Safety and Community Health Measures; Social Care Resilience Measures; and School and Early Years Resilience Measures.• Schedule 6 - sets out the residual healthcare contribution and the proposed structure and membership of the Health Working Group, which will provide governance for the healthcare contribution.• Schedule 17 - which sets out overall governance. <p>Exact monitoring measures are yet to be agreed but additional detail on these will be added to the Section 106 and / or terms of</p>			
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		reference for the working groups in due course.			
PHE7	The Volume 2 Chapter 28 Human Health and Wellbeing submitted as part of the DCO application heavily references and relies mainly on assessments of socioeconomic and environmental conditions (e.g., air quality, noise & vibration, traffic) found elsewhere within the ES. While these undoubtedly have an impact on health and wellbeing, the chapter only presents a cursory review of the proposal's effects on wider health and wellbeing, which include stress, anxiety and quality of life, and did not address mental health or health inequalities as recommended by PHE at the Section 42 stage of this application. Based on lack of information presented, the assessment in this regard needs improvement.	See PHE6 above.	As 6.		
PHE8	Furthermore, Chapter 28 Human Health and Wellbeing did not sufficiently cross-reference the Equality Statement also submitted as part of the DCO application. The Equality Statement presented differential effects for vulnerable populations for five broad categories, but this did not include wider health and wellbeing and health inequalities, while Chapter 28 Human Health and Wellbeing took a cursory view of wider health and	The interface between the health and wellbeing assessment and the equality statement is discussed in Chapter 28, Para 28.3.5 . The health and wellbeing assessment is inclusive, considering community wide effects, including any circumstance that might result in a disproportionate outcome upon any sensitive group. With regards to sensitivity, inequality and the potential for disproportionate impacts, para 28.3.16 sets	Following discussion accepted, no further comments.	No further action required.	Agreed.

	<p>health inequalities but did not define vulnerable populations as recommended. Additionally, by defining all groups within the population as high sensitivity, there is a risk of missing differential impacts and effects across groups. Therefore, the assessment of potential impacts of the proposed development on population health and inequalities across the life-course and within vulnerable groups, is unclear. Consequently, we are unable to evaluate whether the proposed mitigation measures are appropriate.</p>	<p>out how sensitivity can vary within a community, and can further vary by individual health pathway. The rationale is then provided as to why a precautionary approach has been applied, where every resident is considered highly sensitive to every health pathway.</p> <p>In short, the assessment is working on the basis that every resident is vulnerable to everything. Contrary to the PHE concern, this does not mask any disproportionate effect, quite the opposite, it means any impact other than minor would be considered significant, and justifies greater mitigation and community support initiatives than would otherwise be required. As a consequence, any inequality or vulnerability that is not specifically captured within demographic, health and health care statistics, is still accounted for in the professional judgment on significance. In addition to this, the health and equality teams have been working in conjunction to inform the equivalent assessments, but also support health and equality engagement.</p> <p>With regard to the final PHE point on mitigation sufficiency, a compressive package of mitigation and support initiatives have been detailed covering every tangible aspect with the potential to influence physical and mental health, and a health working group is in place, and will be</p>			
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		retained throughout the construction period.			
PHE9	<p>The DMRB standards for highways (LA112) was updated in January 2020, and therefore supersedes the methodology used within this ES. The new DMRB contains a mitigation hierarchy for dealing with issues affecting walkers, cyclists and horse riders.</p>	<p>The assessments had been undertaken, consulted and reported on before the LA112 standards were updated in January 2020. We are aware of the change in guidance but it does not provide a breakdown of the assessment in line with the impacts considered (i.e. severance, amenity, fear and intimidation etc). Therefore, for the purposes of the ES, we have continued to use IEMA guidance. The methodology for the ES was agreed as part of EIA Scoping. In line with the EIA Regulations, the ES must follow the methodology established through EIA Scoping. We note however, there are some useful elements in terms of level of traffic on a road that could impact for PRoW users and this will be reviewed by SZC Co.</p>	<p>Resolved. Acknowledge ongoing discussions with the local Highways Authority in relation to this scheme and cumulative effects.</p>	<p>PHE to defer to conclusions of local highways and leave them to resolve any issues.</p>	
PHE10	<p>Please see below some specific comments in relation to the radiation aspects of the Sizewell C Project Volume 2 Chapter 25 Radiological Considerations Para 25.3.40</p> <p>Fetal doses related to the fishing family are also considered in the Human Radiological Impact Assessment but are not discussed here Para 25.6.21. It needs to be clear from which site and discharge route (aqueous, gaseous or both) the doses relate to.</p>	<p>The Radiological chapter (Book 6, Volume 2, Chapter 25) provides a summary of the results from the Human Radiological Impact Assessment, and as such not all results are included. A copy of the full radiological impact assessment is included as an appendix. This ensures that the reader can have access to both a summary and the full assessment.</p> <p>In terms of fetal doses, this was only assessed in terms of a Screening Assessment and as such was not included as part of the main summary. The results of the Screening</p>	<p>Accepted, no further comments.</p>	<p>No further action.</p>	<p>Agreed.</p>

		Assessment showed that the dose to a foetus from discharges of Aqueous and Gaseous Effluent from Sizewell C would be 17 $\mu\text{Sv}/\text{year}$. This constitutes less than 6% of the statutory (source and site) dose constraints of 300 and 500 $\mu\text{Sv}/\text{year}$ and is considered to be low.			
PHE11	Para 25.6.47 states that "This is significantly below (0.4% of) the amount of radiation exposure from natural sources in the UK (2700 $\mu\text{Sv yr}^{-1}$)." The dose of 2700 $\mu\text{Sv yr}^{-1}$ includes medical radiation so this statement is not correct.	This is a typographical error and should have read "... (0.4% of) the amount of radiation exposure from background sources in the UK (2700 $\mu\text{Sv yr}^{-1}$)...."	Accepted, no further comments.	No further action.	Agreed.
PHE12	Volume 2 Chapter 25 Radiological Considerations Appendices 25A-25C Appendix 25A: Construction Sediment Radiological Impact Assessment From Dredging Operations Para 1.1.12 states that "In context, the limit of the effective dose for any member of the public (10 $\mu\text{Sv}/\text{y}$) is <0.4% the average annual background radiation of 2.7mSv/y (Public Health England, 2011)." This dose is not the background dose as it includes the contribution from medical exposures. This dose is the average United Kingdom (UK) radiation dose. The reference should be Public Health England, 2016. Para 1.1.13 states that "In England, RSR is delivered by the Environment Agency on behalf of the Department of Energy and Climate Change (DECC)." This needs to be updated.	Background Dose is defined by the International Atomic Energy Agency as "Dose or dose rate (or an observed measure related to the dose or dose rate) attributable to all sources other than the one(s) specified." As defined by Public Health Englands in the UK the average exposure to member of the public in UK is 2700 $\mu\text{Sv}/\text{year}$. As such the statement is correct.	Accepted, no further comments.	No further action.	Agreed.

PHE13	<p>Appendix 25B: D1 Human Radiological Impact Assessment Para 30 states that “The different modules within PC-CREAM 08 model the contribution of radioactive decay chain products (‘progeny’) in slightly different ways. The DORIS, FARMLAND and RESUS modules do not explicitly model progeny that reach equilibrium with the parent radionuclides within one year; rather, such progeny are considered to be present at the same activities as the parent. This time is reduced to three minutes in PLUME, which allows important-short-lived radionuclides to be modelled explicitly. The first progeny not reaching secular equilibrium with the parent radionuclide is modelled explicitly in FARMLAND, RESUS and PLUME. DORIS considers all radionuclides in the decay chain and progeny that are not in equilibrium with the immediate parent are modelled explicitly [Ref 29].”</p> <p>It would be more accurate to state that “The different modules within PC-CREAM 08 model the contribution of radioactive decay chain products (‘progeny’) in slightly different ways. For the FARMLAND and RESUS modules only the first progeny that is not in secular equilibrium over a period of one year is modelled explicitly. In PLUME the first progeny, even if it is short-lived, is modelled explicitly so its</p>	We note the comment raised by PHE. Both statements are equivalent.	Accepted, no further comments.	No further action.	Agreed.
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	contribution to dose at short distances downwind can be determined. DORIS considers all radionuclides in the decay chain and progeny that are not in equilibrium with the immediate parent are modelled explicitly [Ref 29].”				
PHE14	Table 2-4 Footnote 7 – the link to ref 26 does not work and is this the correct reference?	This is a typographical error and should have read Reference 29.	Accepted, no further comments.	No further action.	Agreed.
PHE15	Para 124 – this paragraph discusses skyshine but does not reach a conclusion about whether the conclusions of the sensitivity analysis should be applied.	This is discussed further in Paragraph 145-147 and Table 3-2. It should be noted that the low level of radiation dose to the public from Sizewell C is dominated by Gaseous and Aqueous Discharges, and Skyshine and Direct Dose.	Accepted, no further comments.	No further action.	Agreed.
PHE16	Para 215 states “This is insignificant when compared to the annual skin dose limit of 50,000 Sv/y/cm ² under the IRR17.” Would it not be more appropriate to refer to the skin dose limit given in EPR 2016 Schedule 23 Part 4 (1) Para 2 (a)?	Schedule 23 Part 4(1) Para 2 (a) refers out to the Basic Safety Standards Directive. In the UK the Dose Limits specified in the Basic Safety Standards Directive are enshrined in Domestic Legislation via the Ionising Radiations Regulations 2017. As such the statement is correct.	Accepted, no further comments.	No further action.	Agreed.
PHE17	Section 8 discusses sensitivity analyses. The three specific assumptions and parameters analysed are: <ul style="list-style-type: none"> • Discharges - expected best performance discharges against proposed limits. • Habits Data - generic food ingestion rates against site-specific food ingestion rates. 	The sensitivity analyses were undertaken in line with joint guidance from the Environment Agency, Scottish Environment Protection Agency, Northern Ireland Environment Agency, Health Protection Agency and Food Standards Agency on "Principles for the Assessment of Prospective Public Doses arising from	Accepted given the scale of the likely doses.	No further action.	Agreed.

	<ul style="list-style-type: none">• Food Source – 100% locally sourced seafood against 50% locally sourced seafood. <p>Given the importance of the marine food pathway, it would be expected that the sum of the important parameters related to marine dispersion such as volumetric exchange rates would also be considered. Has this been done by the applicant?</p>	<p>Authorised Discharges of Radioactive Waste to the Environment". This identified the 3 specific areas you noted in the comments. Although this does not explicitly consider the marine dispersion, the following text is provided in paragraph 34 in relation to the conservatism used in the volumetric exchange rates. This is summarised below. All marine dispersion parameters <i>"are the PC-CREAM default values, except for the volume of the local compartment, which has been increased from 3.00E+08 m3 to 4.00E+08 m3 to ensure that the discharge point (roughly 3.5 km from the coast) is within the local compartment. Sediment distribution coefficients and all properties of the other ocean compartments modelled within PC-CREAM were also default values. The default volumetric exchange rate corresponds to a local compartment volume of 3.00E+08 m3. This has been retained as a new volumetric exchange rate cannot be derived without hydrographical data relevant to the area [Ref 29]. A local compartment of 4.00E+08 m3 would have a higher exchange rate, which would result in lower doses, so it is conservative to retain the default value [Ref 17]. The change in volume is small compared to the volume of the regional compartment, so the impact on the regional compartment is expected to be small."</i></p>			
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