

Wendy McKay

Our Ref: 20026727

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Your Ref: EN010012

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By email only

Dear Ms McKay

Planning Act 2008 – Section 88 and the Infrastructure Planning (Examination Procedure) Rules 2010 – Deadline 3: Comment on responses to ExA’s Q1 Questions

Application by NNB Generation Company (SZC) Limited for an Order Granting Development Consent for the Sizewell C Project

For Deadline 3 (24th June) the Examining Authority (ExA) have requested comments on responses to the ExA Written Questions (ExQ1) provided at Deadline 2.

Our comments on responses to ExQ1 are contained in Appendix A.

Yours sincerely



Simon Barlow
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Appendix A: Comments of responses to ExQ1

Bio.1.57	The Applicant, Natural England	<p>[APP-224], section C.a.a.c, especially paras 14.7.62; 65 and 67.</p> <p>(a) It appears that avoiding hydrological effects on Minsmere European Site (sic) is dependent on careful monitoring and control measures. Please explain where these are described and how they are secured in the DCO and / or the s.106 agreement. This should include how they are to be funded. Cross-referencing to the Mitigation route map would also be helpful. Is “Minsmere European Site” (e.g in para 14.7.67) intended to refer to all the European designations – SAC, SPA and Ramsar? There are several uses of the phrase in the singular in the Chapter and in questions below.</p> <p>(b) Is NE content with these measures?</p> <p>(c) To what extent is the continued operation of the Minsmere Sluice needed?</p> <p>(d) The ExA notes that some IPs have suggested the lifetime of the sluice is shorter than the lifetime of the Proposed Development. Please will the Applicant and NE comment on that, indicating whether they agree and what action is needed in relation to that, if any, is needed to ensure the Proposed Development does not have any likely significant effect.</p>
	Applicant	<p>(a) No significant hydrological effects are predicted on the Minsmere European Site or other habitats during either the construction or operational phases (refer to Volume 2, Chapter 19 of the ES [APP-297]. This conclusion is not dependent upon the proposed hydrological monitoring and the implementation of prescriptive control measures.</p> <p>Continued hydrological monitoring is proposed, as outlined in the Sizewell C Water Monitoring and Response Strategy (Volume 3, Appendix 2.14.A of the ES Addendum [AS-236]). This states that the purpose of continued monitoring is to demonstrate that changes in the water environment are consistent with the impact assessment. Recognising that timely intervention will be required if an unacceptable change is observed, the strategy sets out the approach to mitigation. The Water Monitoring and Response Strategy and the Water Monitoring Plan define the specific measures that will be secured by Requirement 7 of the draft DCO (Doc Ref. 3.1(C)), along with the relationship to the environmental permits and licences that would be necessary. The Water Monitoring Plan would be prepared by SZC Co. and submitted to East Suffolk Council for their approval, following</p>

		<p>consultation with relevant stakeholders. Together these provide a robust and effective framework of controls for the management of water levels for the duration of the project.</p> <p>(b) No response is required from the Applicant.</p> <p>(c) SZC Co. recognises concerns of stakeholders regarding the long-term viability of Minsmere Sluice. It neither owns the structure nor has included it within the proposed order limits.</p> <p>(d) No significant hydrological effects are predicted in the vicinity of Minsmere Sluice (refer to Volume 2, Chapter 19 of the ES [APP-297]). Minsmere Sluice is an Environment Agency owned and maintained structure that controls drainage from the Minsmere New River, Leiston Drain and Scott's Hall Drain. It provides controls and limits the ingress of salt water and is tide locked when water levels in the North Sea are high. At low tide drainage of the upstream fluvial system via Minsmere Sluice is via gravity. As set out in (d) below, the Minsmere Sluice was refurbished in 2013 with a 50-year design life and the ongoing operation is set out in the coastal policy.</p> <p>(e) SZC Co. notes that the Shoreline Management Plan (SMP) policy⁴² for the wider coast (MIN12.3 and MIN12.4) in the vicinity of Minsmere Sluice is managed realignment, whereas the position for Minsmere Sluice is for it to be maintained. Consistent with the policy stated in the SMP, the Environment Agency refurbished Minsmere Sluice in 2013 and this work was completed with a 50 year design life. This is the current policy for coastal management that the Sizewell C Project will need to comply with.</p>
	Natural England	<p>(b) We have addressed groundwater impacts in relation to the Minsmere to Walberwick sites within our Relevant Representations (PINS ref: RR-0878, our ref: 306236, dated 30th Sep 2020):</p> <p>“Drawdown during the construction phase is limited to the very southern edge of the site adjacent to the platform and is temporary in nature. The drainage strategy and code of construction practice will mitigate against issues of increased discharge or run-off from the MDS during construction and operation. This also applies to the Sizewell Link Road. However, there is an important assumption here that the Drainage Strategy and Code of Construction Practice will be rigorously implemented. We recommend that these mitigation measures are secured in the requirements of the DCO. We advise that there is unlikely to be significant hydrological impacts on the following sites:</p> <ul style="list-style-type: none"> • Minsmere to Walberswick Heath and Marshes SAC

		<ul style="list-style-type: none"> • Minsmere- Walberswick SPA • Minsmere- Walberswick Ramsar site • Minsmere- Walberswick SSSI” <p>(d) The Minsmere Sluice is managed and maintained by the Environment Agency who would be best placed to answer this question.</p>
	Environment Agency	<p>(d) The Environment Agency owns and maintains the Minsmere Sluice. The lifetime of the sluice is shorter than the lifetime of the development.</p> <p>The 2013 Minsmere sluice refurbishment project was appraised over 50 years, this does not represent a 50 year design life.</p> <p>The 2013 Project Appraisal Report states:</p> <p><i>3.2.12 Due to rising sea levels, it is expected that within 50 years the Minsmere Tidal Sluice will no longer be able to drain the hinterland via gravity. At this point in time a change to the existing management approach will be needed (this could be either a pumped system, drainage completely abandoned, an alternative location of the sluice and / or line of defence). There are numerous factors that will contribute to this decision (as outlined in the Minsmere Sea Defences Technical Report, Black & Veatch, 2009), but under the current decision framework it is expected that we will withdraw from flood risk management and allow natural coastal change to happen. To reflect this, we have assumed an appraisal period (in terms of whole life costs) of 50 years, assuming that we continue with the current management approach over this time frame.</i></p> <p><i>Objective 1 – Refurbish the Minsmere Tidal Sluice so that it can continue to provide a coastal and fluvial flood risk management function for the Natura 2000 site, in accordance with the Habitat Regulations. Refurbishment works to enable the maintenance frequency to be reduced from annual maintenance to five to eight yearly</i></p>

		<p><i>maintenance. Refurbishment to be sufficient to avoid the need for further capital investment over the next 20 years.</i></p> <p>The 2013 project refurbished elements of the sluice chamber. The outfall element of the system is likely to need some, potentially significant, works in future years.</p> <p>Our strategic objectives for the site remain in alignment with the Shoreline Management Plan policy. Subject to shoreline erosion rates being as predicted in the Plan and funding availability we anticipate being able to continue maintaining Minsmere Sluice into the long term (<2055). Beyond 2055, coastal erosion or sea level rise (possibly both) will likely render the location unsustainable due to sea flooding frequency or drainage limitations.</p>
Bio.1.218	The Applicant, MMO	[APP-317] Construction discharges of un-ionised ammonia, section C.c.f, para 22.7.151. Please will the Applicant explain why the magnitude of the impact is assessed as low “as discharges could occur throughout the construction phase”. That duration suggests the opposite. The ExA also notes the criteria in table 1.3 of appendix 6R [APP-170] where the Applicant says: “Medium - Medium-term temporary impacts, one to 12 years”. “Low - Short-term temporary, less than a year”. Please will MMO also comment.
	Applicant	Various factors are considered when assessing impact magnitude: spatial extent, amount of change and the duration of the pressure (see Volume 2, Chapter 22 of the ES [APP-317], Table 22.3). For this assessment, the spatial extent of the pressure is very small (i.e., EQS concentrations are exceeded only up to 6.3m from the point of discharge; see [APP-317], paragraph 22.7.150), which would generally mean that impact magnitude is very low. However, as the pressure could last for the duration of the construction phase, the impact magnitude has been increased to low.
	MMO	The MMO has received and reviewed the Applicant’s response. We are satisfied with the applicant’s response, the spatial extend of EQS exceedance is very small.
	Environment Agency	Any proposed water discharge activities (WDAs) related to or generated by construction or cold commissioning related activities at SZC will be subject to separate environmental permit applications by the Applicant. The Applicant is yet to submit any construction or cold commissioning related WDA permit applications, although pre-application discussions between the Applicant and Environment Agency are on-going.

		<p>Once the application(s) has been submitted to us and has been duly made, the environmental impact of any potentially hazardous chemicals or elements within the proposed construction related WDAs will be assessed during the determination of the permit application.</p> <p>We may consider any supporting information provided regarding construction or cold commissioning related activities as part of the in-combination assessments for the The Conservation of Habitats and Species Regulations 2017 and The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 for the SZC operational WDAs permit application, which is currently in determination by the Environment Agency.</p> <p>The SZC operational WDAs permit application takes into account the proposed discharges related to/generated by hot functional testing and operational activities.</p>
Bio.1.244	The Applicant, MMO	<p>[APP-317] Section D.c.c.c Assessment of impingement losses, Table 22.113. Please will the Applicant explain why it has drawn seabass and thin-lipped grey mullet into this table. The figures for seabass seem simply to be 10% of those in Table 22.112. The figures for grey mullet are the same as in the table. The ExA notes the reference to Appendix 22I. Please will the Applicant summarise the point being made on this by that Appendix and give the paragraph and page numbers which are relevant. Please will the MMO also comment.</p>
	Applicant	<p>We agree the title of Table 22.113 of Volume 2, Chapter 22 of the ES [APP-317] is not explicit in describing what it shows. Table 22.113 [APP-317] reflects additional species-specific assessment steps - these are detailed in Section 6.5 (Further consideration of impingement effects on eel, bass and thin-lipped grey mullet) of Report Number TR406 (see Chapter 2, Appendix 2.17.A (Supplementary Information on Fish Assessments) of the ES Addendum [AS-238] which provides an update to the version provided in Volume 2, Appendix 22I of the ES [APP-326]. Please see also Appendix 7L of this Chapter.</p> <p>Report TR406 [AS-238] provides updated impingement estimates for both species accounting for the estimated thin-lipped grey mullet SSB and provides estimates of seabass SSB effects with/without the distribution in the GSB accounted for. In both cases impingement estimates are provided with and without mitigation measures. Further summary for each species is provided here:</p>

		<p>Seabass</p> <p>Seabass are not uniformly distributed across the GSB with evidence suggesting juvenile seabass are attracted to the warm water effluents of Sizewell B in winter. Sampling was undertaken inside and outside of the Sizewell-Dunwich Bank, and close to and distant from the current and proposed intake/outfall locations of Sizewell B and C, respectively. The survey identified a statistically significant difference in seabass distribution in the GSB with 95% of seabass recorded inside the Sizewell-Dunwich Bank. The attraction of juvenile seabass to thermal discharges and in relation to an operational Sizewell C is considered in more detail in the Report TR406 at section 7.2.4 [AS-238]. The assessment accounts for the reduction in impingement due to the offshore location of the intake headworks which is considered to be 90%.</p> <p>Grey mullet</p> <p>There is not a directed commercial fishery for grey mullet in the southern North Sea and therefore the landings data (120 t in Report TR406 [AS-238]) will substantially underestimate the SSB. The mean length in the commercial catch has been estimated to be in the range 36 to 42cm. At this size the annual natural mortality (M) is in the range of 0.5 to 0.4 and the calculated sustainable harvesting rate is approximately 33% - 39% SSB (Section 5.1.1 of Report TR406 [AS-238]). Mullet impingement numbers at SZB show no significant trend over the period 2009-2017 and provide no evidence that fishing on the stock is unsustainable. It is therefore considered unlikely that mortality on the stock is 33%+ in the southern North Sea and instead a conservative assumption has been made that landings represent 20% of SSB. Resulting in a conservative SSB prediction of 600t against which a population estimate is made in Table 22.113 [APP-317].</p>
	MMO	The MMO have received and reviewed the response by the Applicant and are content with the response provided by the Applicant and with the additional assessment information provided by the Applicant in the ES Addendum.
	Environment Agency	<p>Grey mullet</p> <p>We do not consider that there is sufficient evidence made available to justify the decision to use a SSB prediction of 600t. We cannot confirm that this is sufficiently precautionary or that there will not be a potential for a decline in WFD status.</p>

Bio.1.248	The Applicant, MMO	<p>[APP-317] Section D.e.a Commissioning discharges of hydrazine on fish discharged from the FRR, para 22.8.842.</p> <p><i>“The duration of the exceedance is short, with concentrations exceeding the acute PNEC for no longer than 3.25 hours at a time.”</i></p> <p>What is the time gap between such concentrations? What would be the minimum acceptable gap?</p>
	Applicant	<p>Hydrazine discharges would not be continuous. The treatment tanks would be discharged once a day meaning the plume could be transported towards the FRR once within a 24- hour period depending on the direction of the tidal currents during release. Whilst the FRR is at an in-situ location the discharged fish that survive FRR passage are mobile, either transported by the tide or actively swimming. Therefore, an acceptable exposure gap is not strictly applicable in this instance as fish are highly unlikely to be at the same location at the FRR outfall at the time of the subsequent plume passage, approximately 24 hours later. Instead, fish sensitivity to hydrazine toxicity for the exposure conditions, assuming they are released into the passing plume, is considered based on model outputs of the plume behaviour.</p> <p>The Canadian Federal Water Quality Guidelines for hydrazine in the marine environment is 200ng/l for low likelihood of adverse effects and this threshold was never exceeded during the model simulation at the surface or the seabed. Maximum predicted concentrations at the seabed are less than 10% of those at the surface. At the surface, the acute PNEC is predicted to be exceeded a maximum of 21 occasions during the month-long model simulation, for a duration of between 0.25 and 3.25 hours at a time. At the seabed, the acute PNEC is exceeded a maximum of 15 occasions during the modelled month for a duration of between 0.75 and 2.75 hours at a time. The total duration above the acute PNEC at the FRR represents 5.1% of the month-long simulation and is not continuous.</p> <p>The acute PNEC is based on data for the most sensitive group of organisms tested (algae) and is derived from continuous exposure for up to 6 days. Available evidence suggests that fish are one of the less sensitive groups to hydrazine exposure. Therefore, the short duration of exposure and relatively low concentration would result in</p>

		limited toxicity. ExQ1: 21 April 2021 Responses due by Deadline 2: 2 June 2021 Page 234 of 259 ExQ1 Question to: Question: Furthermore, hydrazine has low bioaccumulate potential (paragraph 22.6.147 of Volume 2, Chapter 22 of the ES [APP-317]). Whilst para. 22.8.842 acknowledges that fish exposed to impingement stress may be less tolerant to chemical stress, the low concentrations and transitory nature of the plume, indicates additional mortality would be minimal.
	MMO	The MMO have received and reviewed the response by the Applicant and are content with the response provided by the Applicant.
	Environment Agency	<p>Any proposed water discharge activities (WDAs) related to or generated by construction or cold commissioning related activities at SZC will be subject to separate environmental permit applications by the Applicant. The Applicant is yet to submit any construction or cold commissioning related WDA permit applications, although pre-application discussions between the Applicant and Environment Agency are on-going.</p> <p>Once the application(s) has been submitted to us and has been duly made, the environmental impact of any potentially hazardous chemicals or elements within the proposed construction related WDAs will be assessed during the determination of the permit application.</p> <p>We may consider any supporting information provided regarding construction or cold commissioning related activities as part of the in-combination assessments for the The Conservation of Habitats and Species Regulations 2017 and The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 for the SZC operational WDAs permit application, which is currently in determination by the Environment Agency.</p> <p>The SZC operational WDAs permit application takes into account the proposed discharges related to/generated by hot functional testing and operational activities.</p>
Bio.1.249	The Applicant, MMO	<p>[APP-317] Section D.e.b Interaction between thermal discharges and chlorine toxicity, para 22.8.845.</p> <p>This para closes with the following: “Therefore, no further consideration is made of the possible synergistic effects for seabed plumes”. Why is this? Please will the Applicant unpack this. 25.8 ha at the seabed will be >23°C (though below 28°) with both stations operating, which is said to be a “limited” area. With respect all areas are limited. And EQS for the TRO plume will be exceeded.</p>

	Applicant	This point is fully addressed below, please see the response provided to Question Bio.1.250.
	MMO	The MMO have received and reviewed the response by the Applicant and are content with the response provided by the Applicant.
	Environment Agency	<p>The environmental impact of any thermal or potentially hazardous chemicals or elements within the proposed SZC operational discharges are currently being assessed as part of the Environment Agency's determination of the SZC operational WDA permit application. This will include the review and assessment of any thermal and chemical plumes and mixing zones to determine whether or not there will be any areas of EQS (or alternative assessment value i.e. Predicted No-effect Concentration) exceedance at the sea surface and seabed.</p> <p>We have yet to determine whether or not the proposal is acceptable as the operational SZC WDA permit application is still in determination.</p>
Bio.1.250	The Applicant, MMO	<p>[APP-317] Section D.e.c, Assessments of effects on fish receptors: thermal discharges and chlorine toxicity, para 22.8.849 concludes that "<i>The inter-relationship of the TRO and thermal plumes is not predicted to increase the significance of effects concluded for the pressures alone</i>".</p> <p>How does the evidence point to this?</p> <p>Temperature dependent toxicity is suggested to be a result of increased uptake rates and physiology at higher temperatures. A 5°C increase in temperature has been shown to halve the LC50 concentration of free chlorine and chloramine in 30-minute exposures in some planktonic invertebrates. The concentrations tested in this study were in the 100s of microgram range and temperatures near the thermal tolerance.</p> <p>Temperature elevation has been shown to increase toxicity of chlorine TRO in fish. In one case an approximate halving of the lethal concentration of TRO was observed with an increase of temperature between 10 and 20°C. However, the studies reviewed generally report temperature effects on toxicity in acute studies with durations of hours to a few days and with exposure concentrations in the 100s of micrograms. In the same review, in some cases fish were reported to actively avoid much lower TRO concentrations than would be lethal over several days' continuous exposure.</p> <p>At the immediate point of discharge the maximum temperatures at the surface are between 7.5 and 8°C above ambient. As a 98th percentile the 5°C above ambient temperature contour is 30.6ha in a relatively symmetrical</p>

		<p>position around the outfalls. Within this area TRO concentration above 50µg/l and 20µg/l occur over sea surface areas of ~9ha and 98ha, respectively as a 95th percentile. In small areas of the thermal plume with temperatures of 5°C above background and in which TRO concentrations are >20ug/l increased TRO toxicity may occur. However, the plume conditions sufficient to cause synergistic effects are transient and exposure times of actively mobile organisms or those passively moving with the tides would be short. Therefore, synergistic effects are feasible over limited spatial areas. Furthermore, mobile fish species may be able to avoid TRO plumes (paragraph 22.8.741 of Volume 2, Chapter 22 of the ES [APP-317]). The conclusion that “The inter-relationship of the TRO and thermal plumes is not predicted to increase the significance of effects concluded for the pressures alone” is considered appropriate</p> <p>References</p> <p>Capuzzo, J. M., (1979). The effect of temperature on the toxicity of chlorinated cooling waters to marine animals — a preliminary review. — Marine Pollution Bulletin, 10, 45–47.</p> <p>Cooke, S.J. and J.F. Schreer (2001). Additive Effects of Chlorinated Biocides and Water Temperature on Fish in Thermal Effluents with Emphasis on the Great Lakes. Reviews in Fisheries Science, 2001, 9 (2), pp. 69–113.</p>
	MMO	The MMO have received and reviewed the response by the Applicant and are content with the response provided by the Applicant.
	Environment Agency	<p>The environmental impact of any thermal or potentially hazardous chemicals or elements within the proposed SZC operational discharges are currently being assessed as part of the Environment Agency’s determination of the SZC operational WDA permit application. This will include the review and assessment of any thermal and chemical plumes and mixing zones to determine whether or not there will be any areas of EQS (or alternative assessment value i.e. Predicted No-effect Concentration) exceedance at the sea surface and seabed.</p> <p>We have yet to determine whether or not the proposal is acceptable as the operational SZC WDA permit application is still in determination.</p>
Bio.1.251	The Applicant, MMO	[APP-317] Section D.e.f Assessments of effects at the sea-area or regional stock/population level: hydrazine and temperature changes, para 22.8.852. This states:

		<p><i>“The inter-relationship of the hydrazine and thermal plumes is not predicted to increase the significance of effects concluded for the pressures alone. This conclusion applies to all fish receptors assessed”.</i></p> <p>Please will the Applicant explain how it reaches this conclusion. The ExA notes that in the previous paragraph it is recorded that "Considering the decay of hydrazine, increases in water temperature were found to enhance the toxicity of the compound for fish taxa".</p> <p>Does the assessment of no significant effect in the last sentence of para 22.8.853 to change as a result and if not please explain why.</p> <p>Can the MMO throw any light on this?</p>
Applicant		<p>Hydrazine would be discharged into the cooling water flow at the seal pit in a single daily pulse of approximately 2.32h duration resulting in an initial hydrazine concentration of 69ng/l in the cooling water flow or as the alternative daily discharge scenario of 4.6h of 34.5ng/l. In both cases the concentration in the cooling water discharge itself is below the Canadian Federal Water Quality Guidelines for low likelihood of adverse effects toxicity of hydrazine in the marine environment (200ng/l). Once in the receiving waters, dilution and decay results in the acute PNEC (4ng/l as a 95th percentile) occurring over areas of 17.4ha and 13.8ha for the 34.5ng/l and 69ng/l discharge scenarios, respectively.</p> <p>Increases in water temperature have been shown to increase toxicity of hydrazine to fish, however, effect concentrations are orders of magnitude above the acute PNEC. As stated in Question Bio.1.248, the acute PNEC is based on data for the most sensitive group of organisms tested (algae) and is derived from continuous exposure for up to 6 days. Available evidence suggests that fish are one of the less sensitive groups to hydrazine exposure.</p>

		<p>At Sizewell, seasonal chlorination would be applied. When hydrazine is added to chlorinated seawater, the hydrazine is oxidized to nontoxic nitrogen, sodium chloride and water. An initial hydrazine concentration of 69ng/l fell to 8.4 ng/l in the presence of chlorinated seawater at the planned TRO concentrations for SZC (Volume 2, Appendix 21E of the ES [APP-315]). The combination of elevated temperature and chlorine TRO would increase hydrazine degradation. The elevated temperature and presence of TRO has the potential to enhance the interactions between the stressors. However, as hydrazine exposure occurs for short periods the dynamic interaction between TRO, hydrazine and temperature causing a reduction in hydrazine concentration but also potentially contributing to synergistic effects would be temporally as well as spatially limited.</p> <p>Synergistic effects on the toxicity of hydrazine to fish in the receiving waters would only occur in the very near field and have negligible difference beyond the effects already assessed for the pressures individually. The sensitivity of fish to operational hydrazine discharges is assessed in paragraph 22.8.788 onwards of Volume 2, Chapter 22 of the ES [APP-317]; the effects of fish sensitivity to thermal discharges are assessed in paragraph 22.8.673 to 22.8.787.</p> <p>The assessment of localised displacement due to the synergistic effects of hydrazine and temperature changes in paragraph 22.8.853 of Volume 2, Chapter 22 of the ES [APP317] are not anticipated to be greater than for the pressures alone. Localised behavioural responses to thermal discharges would override any behaviours to hydrazine.</p>
	MMO	<p>The MMO have received and reviewed the response by the Applicant and are content with the applicant's response. The discharge of hydrazine will occur a maximum of once per day for a few hours. The modelling that has been undertaken is conservative and the Predicted No Effect Concentrations (PNEC) is also conservative. On this basis it is extremely unlikely that any significant effects will occur to fish that might be exposed to the intermittent plume. As the applicant notes, reported effects concentrations for fish are orders of magnitude greater than the PNEC. On this basis synergistic effects between hydrazine and the thermal plume are considered extremely unlikely.</p>

	Environment Agency	<p>The environmental impact of any thermal or potentially hazardous chemicals or elements within the proposed SZC operational discharges are currently being assessed as part of the Environment Agency's determination of the SZC operational WDA permit application. This will include the review and assessment of any thermal and chemical plumes and mixing zones to determine whether or not there will be any areas of EQS (or alternative assessment value i.e. Predicted No-effect Concentration) exceedance at the sea surface and seabed.</p> <p>We have yet to determine whether or not the proposal is acceptable as the operational SZC WDA permit application is still in determination.</p>
Bio.1.252	The Applicant, MMO	<p>[APP-317] Section D.e.g, Assessments of effects of localised displacement: hydrazine and temperature changes, para 22.8.853.</p> <p>This simply states that <i>"It is unlikely that this inter-relationship would increase the significance of the effects of localised displacement"</i>. Please will the Applicant explain why.</p> <p>Can the MMO throw any light on this?</p>
	Applicant	<p>The thermal discharge is anticipated to be the overriding factor causing the stimulus for fish displacement behaviours. Concentrations of hydrazine even in close proximity to the outfall are very low (please see response to Question Bio.1.251) therefore the assessment of displacement due to thermal discharges remains appropriate. For clarification para. 22.8.853 should read:</p> <p>"It is unlikely that this inter-relationship would increase the significance of the effects of localised displacement, beyond the effects predicted for the pressures [of hydrazine and temperature changes individually]. This conclusion applies to all fish receptors assessed. Effects are not significant at the sea or regional stock/population level."</p>
	MMO	<p>The MMO has received and reviewed the Applicant's response and are content with it. As the Applicant notes, reported effects concentrations for hydrazine for fish are orders of magnitude greater than the PNEC. On this basis synergistic effects between hydrazine and the thermal plume are considered extremely unlikely.</p>

	Environment Agency	<p>The environmental impact of any thermal or potentially hazardous chemicals or elements within the proposed SZC operational discharges are currently being assessed as part of the Environment Agency's determination of the SZC operational WDA permit application. This will include the review and assessment of any thermal and chemical plumes and mixing zones to determine whether or not there will be any areas of EQS (or alternative assessment value i.e. Predicted No-effect Concentration) exceedance at the sea surface and seabed.</p> <p>We have yet to determine whether or not the proposal is acceptable as the operational SZC WDA permit application is still in determination.</p>
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