

# TEXT\_SizewellC\_ISH7\_Part2\_Session2\_16072021

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00:05

Good. Good afternoon and welcome back now, Mr. trogons, who can tell me about Hinkley Point? Yes. Good afternoon, sir. I'm doing this because it could, it could be quite significant for for this process actually. So it's important I think I inform you of it. So, Hinkley, Hinkley Point, the decio and the the green licence and the water discharge activity permit or contain a condition requiring the application of an acoustic fish deterrent system. We haven't got onto acoustic fish deterrent systems yet. The Hinkley Point or HPC, which is the equivalent of acid c took the view that it couldn't safely instal an efdss Hinkley Point because of the risk to divers, and therefore applied to the Environment Agency for a variation of the water discharge activity permit to remove that requirement. If successful, they would follow an application similar to theory the the decio, four entry points See, the Environment Agency failed to determine that application within the statutory time limits. So HPC appealed that matter of the appeal against steam refusal went to a nine day environmental appeal inquiry at which I appeared for HPC. That inquiry concluded on the 24th of June. It's the matter was recovered by the Secretary of State for the environment, Food and Rural Affairs because of its public importance, that that inquiry over its some eight days of evidence, canvassed in very considerable detail, many of the issues which we're touching on it at a high level, now, equivalent adult values LVC, head efficacy, fish return systems, etc. Obviously, we have no control over when that decision of the Secretary of State will be issued, it may be issued before the end of this examination. It may not. So I think it's important I alert you to that of the plane if it is issued. We'll be putting it before the before the examination. But I think it's it's to make it perhaps a broader point, which is that these issues which which touched on of necessity, given the process for DCs at a high level have been the subject of exhaustive and forensic examination with evidence cross examination in the in the normal way, plainly, in responding to to the evidence of Dr. Henderson matters like that, whilst we do our best in writing, it's plainly impossible to replicate the level of microscopic scrutiny that one would get at an inquiry. So I think it's that's just an important point to be aware of. I think it's an inherent feature of the process we're engaged in as compared with a normal inquiry, and there's no getting away from that. But we have to do our best within the strictures of being brief, putting things in writing and so on. But I think the examining authority should be under No, no illusion that there is a huge amount of technical material sitting under that on these points, which we're, we're canvassing today. So that simply to inform you and give you a heads up if you like that, if we do get the decision, then it will be put in front of you.

04:07

Okay, let me just go back and make sure I got it absolutely clear because I can see the importance of it. At Hinkley Point C. You have a provision which requires us to have acoustic fifth deterrence, and that's in the DCA.

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Yep, it's in the decio. And in the the licence for the water discharge activity, and also in the Marine licence granted by the MMO

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is three is three separate places. And you've got three separate documents there. You haven't gotten in court, you got an incorporated DMR or separate marine life.

04:47

I think No, I think it's I think it's separate. I'll check that. I'll come back to if I'm wrong that I believe it's separate.

04:53

Okay. The application you made was to the Environment Agency. So you were trying to change Should discharge consent

05:02

to remove the requirement for an acoustic fish deterrent system? That's right, which was a condition. Effectively, Grampian Stark condition of the permit.

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So the acoustic of fish deterrent, which is at the inlet part of the cooling system was required in relation to your your discharge permit, which is at the other end, but I can see that they're all

05:26

connected. Yeah, it's, it seems odd, but that's, that's how it works. Yes,

05:30

that's right. And if you're successful in that, now appeal. Now, you will still have to go back and change your decio. And if it is separate your marine licence? That's correct. So yes, right. Okay. But those are those two processes are on hold Where have you initiated them at all or

05:53

there's no, we are awaiting the outcome? Because essentially, the the Environment Agency, we're making the running on this. The environmental agencies only objection to to the removal of the requirement was essentially that some they carried out that HRA assessment, and they couldn't conclude conclude an absence of adverse effects on integrity of the seven estery SBA grammes or site and a number to other sa C's for the the why on the ask, in relation to migratory fish. So it's obviously it's a very, it's a very different setting, concerned with an estuary rather than the coast. But many of the same issues plainly, come up.

06:47

Right. Okay. Thank you. And so in relation to what we have here, your clients obviously not proposed an acoustic fish deterrant. But you I guess you're saying to me, that when we are looking at acoustic of

fish determined that the matter has been, what the matter in a Hinkley Point context has been examined up hill and down Dale? Yes. Right. And procedurally, so we have to slot slot this in, within the within the onset process. Where you Okay, so we have called the number of is H is in relation to things which we think needs to be examined. And one of those is, you know, the the wide sort of biodiversity. And you haven't got a result from that appeal. You've got the material which you put into that appeal, which you're not offering me at the moment. And I don't know that I'm asking for it either. But

07:58

I think you have to be careful what you wish for, sir. And

08:01

I'm being very careful what I wish for here. If you haven't got a result, from the Secretary of State, do you have a view at the moment as to what you want to do?

08:16

Well, we can we can come back and give a more considered view on that. I don't want to give a view view on the on the hoof. But the one thing I would say

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I know your view on the hoof either, because it is clearly quite difficult problem. But you're you're well ahead. You're well ahead of me in looking at the point at all. So

08:36

yeah, we come at a later point today to securing mechanisms. I can make some comments there as to the relationship I think probably will come up naturally on the agenda of the the current the application, which is currently before the Environment Agency for size, we'll see for the water discharge activity permits and how that relates to the decio process. That that is probably best left until we get onto that particular agenda item, I think. Okay.

09:08

Yep. Yeah, we probably ought to think about it again. Before we finish today with not we have a conclusion I'm not sure. All right, Mr. Scales got his hand up for the Environment Agency.

09:22

Thank you. So I thought it's just worth clarifying, perhaps our view on on some of those those aspects raised. I'm glad the observation was made that size will see as a different sort of environmental receipt receiving environment. And I don't particularly follow the excuse me, the, the argument that's just been made that all of these matters will be considered in Hinkley space and therefore, the result of that would dictate the size walls base. My understanding is we've considered the the aspects of the methodologies and and other points that we've made within our written representations and that the inquiry in employee space doesn't change any of the comments that we have made. So we think that they're still still outstanding. And it was just really to say, we feel it's two very different applications in terms of what's been proposed and the receiving environment. So I'm not sure if it quite has the the importance that's been been highlighted here.

10:43

Thank you. In that case, I'm going to go on to the questions which I want to ask anyway about the acoustic fish deterrence. So I'm going to start by asking fish guidance systems who came to him for hearing some questions? a dolphin Lambert. Thank you. Morning. So afternoon, good afternoon. So we last saw each other in floor hearing. And I i from that I have big points that I've taken away are that it's difficult to retrofit acoustic fish turret systems. Yes, there may be difficulties in maintaining them three kilometres out to sea. But your position is that they can be overcome. Although you may not know that at the moment quite how and that's the general point about acoustic efficient utterances that they can reduce the quantities of fish being drawn into the system. So if I've correctly understood that put me right, if I haven't, that my next question is, Can you remind me as to what extent you consider the reduce the fish being drawn and other organisms being drawn in?

12:11

Yeah, okay. Can I Do you mind if I take a step back to start off with Mr. Truman was very kind to provide a bit of history about pinkley. One of the other facts, which I think is pertinent to this, which came up at Hinckley was that EDF in their submissions, made the comment that they made a commercial decision at the end of 2017, not to instal the AfD. And prior to that, here at Sizewell in consultation to the AfD was proposed. And there were a number of documents which EDF had actually prepared, outlining why an AfD was actually required and how it benefits the overall mitigation system. Since that decision was made in consultation three and thereafter here at Sizewell the AfD has been excluded. So I think we just have to go forward knowing that EDF have a commercial have made a commercial decision that they don't want to instal an AfD. And there are a number of arguments they're obviously putting forward to try to justify that. So to answer your question, yes, there are, it's very different, including in size. Well, sighs Well, there are large amounts of sprat and herring, and these are what's described as fragile fish. They're also described as hearing specialists. So they respond really well to an acoustic system. And part of the basic philosophy behind a mitigation system on a cooling water intake is that you have a low velocity intake, and you have an AfD and AfD is able to deflect so typically would say, I think the results which we've had elsewhere, but 88% of sprat 95% of herring, we'd expect to be deflected away. sighs well, of the fish, which are expected to be drawn into the intake, I think it's about 55 56% of all of those are Spratt and another 20% are herring. So overall 75% of the fish which are going to be drawn 75 76% of all the fish which will get drawn into potentially get drawn into Sizewell could be reflected if an fd was actually installed.

14:33

Just what we just I, I was writing taking notes, just give me give me the percentages, which you had for sprat and herring and then

14:40

an AfD will deflect about 88% of of sprat Yeah, and 95% of herring, okay. And overall, as a general community of fish would expect it to deflect about 60% it's not just hearing and spread, which actually here the vast, vast majority here actually patients are sensitive to sound. And we'll hear they respond to different levels. But the sprat and the herring are really sensitive. And so we get very high deflection efficiencies. And the advantage of that is that because they are fragile, and as EDF have put in their

submissions, without an AfD, we can expect them all to die. And that's, I think, an accepted fact with everybody. But obviously, with the AfD, we could actually prevent that from actually happening. There are the fish which will respond less well. But they then tend to be more robust till you get to the extent of the fish which, which do hear sound, but don't respond particularly well. And those are the benthic flatfish, but obviously, they are more used to being physical contact. And so they can then actually then go through a fish return and be recovered relatively easily with with no damage. But all the herring and the sprat will actually get killed going through that fish return system. So that's why the integral part of this direct cooling and preventing fish from being drawn in is the combined effort of having an AfD and a low velocity intake head, removing one and the other one doesn't work properly. And it works both ways, as EDF see France have set themselves that an AfD on its own will only protect some of the fish 60% at best. But obviously, other way around if the FDA is not installed, then we can expect the vast majority of fish which have been drawn into the intake of sizewell will die.

16:47

Okay, thank you. Right, I think as well, that answers my question, conciseness concisely. I do anything else, I need to hear from you. Is there anything else you want to say to me? And I've got What floor hearing? No, I

17:05

mean, there are obviously some concerns over safety. And I think it's important for people to understand that, I think, yes, you can carry out a risk assessment and identify that there are risks if divers do the work. And yes, we made the comment before about how we can reduce those. But the design is that really early stages, they based the risk assessment on a particular deployment at Hinkley, where the SAM projectors are very modular, but just for example, if we instead of having a cluster of 6am, projectors that have to be removed, we increase that to nine. And it's very easy to do that, from an electronic point of view, one that reduces the number of cables and things which are actually then moving around. But it also then reduces the risk to people in the time it takes to remove the system by third. The other part that we've actually talked about is that we have this new pressure compensation system, which forms part of the system which is available now. I know EDF have made comment in their submissions that the service interval is 12 months or possibly 18. But that was based on the old system from four years ago. And the issue we have is that there hasn't really been any dialogue between EDF and ourselves for the last four years. That's why we're having to talk to you so much. But extending that service interval from 18 months to three years, which is feasible, because we've had other projectors, which have operated for three years elsewhere. Actually, then obviously, half the amount of work that's involved and so reduces the risk significantly. And so there are a number of ways very easy to identify now where we can actually reduce any potential risk. And obviously the one which we talked about at some length both here and at Hinkley is the use of aro V's. I'm advised that there are aro V's available which could do the work and you have to remember again, Hinkley and size will have a different water velocities are only about two thirds at size. Well, the maximum that they are at Hinkley, our o visa used out in the North Sea at a fairly regular occurrence out on the oil and gas industry. So if they don't meet this exact requirements, to be frank, you know, there's there's plenty of time to actually be able to carry out any development work and what you were making it the floor. And you know, I would also say the system's already exists. So if we really wanted to, we could be installing a system

three, six months time to demonstrate that it's actually suitable to do the job. It's not something which is we're having to completely invent. It's not it's not novel, the systems already exist and are ready to go.

19:58

Okay, thank you very much. Some days, I get turned out to the reimagined organisation. Good afternoon. Miss Williams, and thank you. So you are asking for more studies on the cooling system before the possibility of an acoustic fish to Jared is abandoned. And we've also talked about studies which you've asked for on the effectiveness of the Lv SC, and the fish return system. Where you asked for, for data without dlpfc sensitive analysis there. Yeah, and we want to ask you, what additional evidence about the P f d? Can you briefly explain to me what your position is on sub summarise what your position is on having AfD or not?

20:56

So, ultimately, we at that MMO would like to see some more evidence in relation to the acoustic vegetarian options before it's decided whether they are excluded. We've not they're not applied for? Well, precisely. So we've essentially asked for specific assessments on the feasibility of installing and operating them outside as well see, whilst an optimum sound field may require a large number of sound projectors is unclear whether a functional system could be established using fewer sound projectors. The MMO conclude ultimately, from what we reviewed that whilst an acoustic fish tank might further reduce impingement for some species. And we do encourage the use of mitigation measures or like to reduce impacts in their entirety. The absence of one in our opinion should not be an impediment to consenting the project at the moment, as we conclude that ultimately, the impacts without the FDA are not significant.

21:55

Thank you. Thank you. And whilst I've got you there, in the in the wider context, is there anything else which use which you see gone on fish stocks?

22:08

Now, we're pretty content on the Fisher testaments and fish stocks? Obviously, I'm happy to discuss that with you. Under the separate agenda points, but ultimately, you're correct there, though. It's just those two outliers that you identified beginning of this section. Okay.

22:23

Thank you very much. Thank you. That's that's useful. Natural England. Do you want say anything about acoustic fish? deterrence?

22:32

Yes. Hi, jack canes natural England. Yeah, so our concerns official terms relate to the general concerns that we outlined earlier under the HRA discussion point, and that we will remain in Germany concerns among consideration of best available mitigation for size we'll see in this regard. And we advise that the uplink should consider exploring revisiting mitigation opportunities to further reduce fish mortality rates. And so including fish deterrence, especially for those species with the highest impingement rates among them sent the fish for recovery and return mortality rates. so creepy. It's such as Breton airing,

and this relates both to HRA concerns and wider EIA concerns. And if you if you require any further detail on that, we've got my colleagues to hand as well,

23:19

no bond on the principal. So what you're saying is where you don't accept that there's no adverse impact, whether it's under HRA or whether it's under the environmental impact assessment regime, you say, look at look at AfD as well. Yeah, that's correct. Okay. Gotcha. Environment Agency. Do you want to say anything?

23:48

Thanks, Mr. Brock. Yes. I think we could add a bit more colour to this. I think as we've we've established at a strategic level, there's there's uncertainty around how many fish will be impinged, and also what the impact of that impingement might be. But I think Aside from that, my reading of the NPS is is that quite high bar is set in terms of good design, and the need for best practice and mitigation. So that's both within MPs one and sorry, n one. And n six, sorry, product, don't worry. So and, and basically, I think as the application stands, there's, there's very little assessment about whether AfD can be accommodated. So AfD is one of the tools in the toolbox, as it were in reducing the impingement of fish so they up Canada's proposed an LDC and FRR, which may mean fish are impinged can be returned or their mess mortality might not be what it was, but the AfD and other repulsive technologies would help stop the fish themselves getting into the system. So So and the Environment Agency also has some guidance documents on cooling water options for the nuclear new building, and lists such repulsive technologies as being suitable mitigation measure. So, I do understand that the applicant is preparing the report to be submitted into the examination really to justify why AfD and repulsive technologies can't be accommodating on size for but I suppose our position at the moment is there's there's little evidence to, to demonstrate why that is the case. And the the, the NPS is have the high bar in terms of the need to have good design and provide best practice and mitigation irrespective of the impacts almost. I don't know if that's, that's helpful. Yeah. Okay.

26:25

I'm sure that you've explained this high bars elsewhere in the documentation, but as it's in my mind, now, we've got to make a summary anyway, the references would be helpful and also to your guidance on this, that you just use.

26:42

Indeed, I have them in front of me or I can in writing,

26:45

I would simply have to take a note and enter it somewhere else. You've got to do something. So that'd be great. Fantastic in in writing, please. Thank you, Mr. scared. I'm grateful to you. Jackie Miller, your hand is up. And then participant is now joining. I was expecting that you carry on Isabella.

27:07

Thank you. And just to introduce myself, I'm Jackie Miller of RSPB representing RSPB and Salford Wildlife Trust today, sorry, I forgot to do that earlier. And just to say that we very much support natural



England and in the anti environment agencies comments and do defer to them on the technical detail of this issue. But I just wanted to say that given the importance of the fish species affected, particularly herring and sprat, which are key prey species, for turns and read through to divers of the outer Thames Estuary, although estuary and minsmere Walberswick sbas, and for example, a short foraging range of little turns and other 10 species, we feel there is a need to understand whether further mitigation of fish mortality is possible. And therefore, we would request or recommend that further assessment is provided showing the level of fish mortality. with and without acoustic fish deterrents to show the level of mitigation that would be achievable. Thank you. Thank you very much. Mr. Barlow. I see your hand is up.

28:15

Yes, sir. Thank you very much. Simon Barlow on the new connubial project manager for the ties will see project at the employment agency. Cameron Scott has been doing an excellent job of leading our evidence state, but there was one mention I wanted to make another feature were accusing Fisher Karen had relevance. And that is, and we have talked about it to a certain extent today, and that is our permit for the water discharge activity. Yeah, one of the things we will be looking at as a result of that permit determination, as well as the impacts of the chemical content, and the thermal content of the water that goes out of the cooling water system is the amount of moribund or dead biomass, ie the fish that didn't survive the fishery recovery return system process that will be injected into the marine environment that really matter. We are obviously therefore very interested on the amount of fish that are impinged because the amount of fish that are impinge potentially equals a degree of the amount of pollution that is spat out at the end of the press recovery return system operating matter. So therefore, an acoustic efficient tear into where it's to reduce substantially the amount of fish that would be in pinched in the first place would have a direct relevance to that assessment. So that is an extra area where acoustician would have relevance to the assessment processes in place. As you know, that determination process ongoing sir, and remains So, but it is certainly an area where they would have they would have a substantial just been to our assessment. Oh, thank you. But that's a separate a separate process there. It is indeed. Yes. Yeah. conclusions of it and they have such regulations. This includes all of it may have a bearing on the incumbent They shouldn't be doing project, have the tabulation assessment for the project. So Oh,

30:03

yeah, yeah, I'm grateful to you to explain to me where the white one silver why it's relevant for you to think at the front end of the system as well as the back end. Thank you. Okay. I didn't see any other hands up as quick scroll down often. That's fine. So I'm going to come back to you. Mr. Truman's?

30:26

Yes, I've got just three or four very brief points to make in response to that. The first is that the the MMO is quite right to say that they did ask for a further report justifying the absence of an AfD that will be provided a deadline of five, we'll pick up in that the comments made by Dr. Dr. Lambert, I would just say, we do take exception to his comment that this was a commercial decision, I wouldn't want those listening to be left with that that impression. At Hinkley Point C. It was a decision which was based on two factors. One was safety, the very real risk of health and safety of the divers who would have to maintain this equipment who was installed. And secondly, the assessment as to the absence of



any significant harm to fish from operating the cooling water system without an AfD. So as I made the point to the inspector in relation to the Hinkley Point appeal, that if this was something that could be fitted, then HPC would be fitting is the driving factor is the the real risk of death to the workforce who'd have to maintain this in the conditions in the Bristol Channel. The conditions at Sizewell are not markedly different to that particularly in terms of the fast tidal currents and so on. But we'll deal with we'll deal with all of those all of those points. We'll also deal with how this ties in with with policy, but just for your your notes. I think what scared was probably referring to but I think inaccurately, unfortunately, was even one paragraph 5.3 point seven, which states that as a general principle, development should aim to avoid significant harm to biodiversity and where significant harm can't be avoided than appropriate compensation measures should be sought. So it's plainly not saying how to apply best practice as a matter of course, it's to do with whether it's needed to avoid significant harm, but we'll cover that off. We'll also cover off the the point made about the the little term that's that's certainly the the most sensitive bird species to in this regard, because it forges for a very limited radius for its nest. It's dependent on very small fish in the very upper surfaces of the water. So if there's a bird species that's going to be affected by loss of fish, it's it's the little term that has been covered comprehensively. We believe in the assessments, we'll make the points on that we also deal with the issue raised by FDA on the moribund and dead biomass, we'll give you the we'll give you the references to where that's covered in the various assessments. So I think that's probably with hopefully an appropriately light touch how we'll deal with those with those matters. Thank you,

33:48

I'm grateful to you, whilst you were speaking to other hands have gone up. So I'm just going to go back to those two individuals. Dr. Dr. Lambert. Thank you, sir. All right. Hang on boys. No, wait, wait. The the rules of engagement as it were. This is you know, it's hearing and there is a level of formality of the rules of engagement are that you have your go to say things and then I am obliged to give the applicant the right of right of reply. The rules of engagement also allow you to put things in writing to me in your in your submission. So with bearing those things in mind, and I don't want to be unfair to you at all. Do you want to make your point now or would you like to put it in writing to me? Now

34:42

just a question if I may, so I will put some points in writing for deadline five I yes. I note the fact that EDF submitting a report on the AfD for deadline five as well. I believe I just want to check we do have the right to respond. to that report at a later date, is that something where we can review and make our comments on that?

35:07

I am not going to. There is quite a lot of what I like record, dingdong, earlier in recent rich This is I'm getting some advice it yes in writing you have a right to reply. Thank you very much. Thank you for. Thank you. Mr. Thompson. I make the same caveats to you, or caveats, comments to as I did to Mr. Lambert.

35:31

Absolutely. quite happy to abide by them. And if I may, I will not put on my camera as I have a very poor internet connection. In fact, I've lost the connection several times. That's fine. Thank you. We we

have some of the same concerns. I will not repeat them, I will put them in my written response to you. The comment I would make is the statement was made that condition size will not markedly different to Hinkley Point for divers operations. I would like to see some evidence of that because from my experience of the two sides, the current the tidal currents at Hinkley Point and the reduced visibility do actually create quite a different condition to those at Sizewell so I'm not sure that that can be taken as read. Okay, thank you. Right now.

36:21

Finally, I want to come on on this before we move on to the general fisheries, fish dots, EA V's and cyber Laurie spin your laser we need to come back to the question of the differences between the applicants and IPS on the conclusions of no adverse effect on integrity which was set out in their shadow, HRA report and agenda. But this now is in relation to fish and migratory fish. So the differences between your relation to those, I simply want to have a grasp on what the differences are. May I start with natural England, please?

37:05

Are there draconian natural England? See, I think I think we set those out earlier in the Okay, under the previous item. If you have any specific questions I can, I can ask our specialist to step in.

37:19

Okay, that's fine. I want to just wanna make sure we haven't missed anything. Thank you, Mr. Hains. I will go to the MMA now.

37:31

Hello, Williamson, for the MMO here. We're also contend that our comments are captured in the previous discussions. But yeah, again, we do ultimately defer to natural England on this matter.

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Thank you very much. Back to Mr. Scared Environment Agency.

37:52

So just to confirm, is this from a HRA perspective?

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Yes, this is the this is I'm looking at differences between you and the applicant on their conclusions have no adverse effects on integrity. In the shadow h HRA report, it may be that you've told me that you need to already.

38:10

Indeed Yes, I'll come in too late to migrate efficient EIA and to be fit and eels Rex context rather than HRA.

38:22

Right. Thank you. And are there any other interested parties? Fine, almost trolls. I think that means that for everybody that probably nothing for you to come back on because everybody says they've already said it. So I get to move on that case to item C which is fisheries, fish stocks, EA B's and sub alaria Spinoza. In that order. Now then glass, el entrainment. You say or your clients say Mr. treatments, and it's in as 238 a record report called s p p 104. That all of the environment agencies questions about glass eel and treatment are answered and that glass yield in treatment would have negligible effect on the local el populations. I don't need to keep you on the camera I just want to make sure that you were briefed as to what I'm going to ask the questions about a couple of the others so can I go first of all to the Environment Agency and bring you back Mr. Scared

39:41

does that make sense there are still they've answered all your questions. Do you accept that all you still got points which are apart on

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mine stunning is we do have points for a part on in my colleague Kirk mark. Will will take those if that's okay.

39:58

And and if he could The Regency house which he wants to raise about migrate refresh that would be helpful certainly I'm sure as quite a bit thanks system

40:10

Hello sir Good afternoon coke Markham Environment Agency. Yeah, where to start? Let me just find where we are. So the operation of Saiful see nuclear power station will not be compliant with the regulations 2009 as they cannot use a screen on the cooling water intake that will prevent the entrainment of glass eels. The Environment Agency has outstanding concerns over what the total entrapment losses will be from the operation of size. We'll see what impact this could have on the Anglian River Basin district it will stock This is predominantly over the uncertainty that exists on what enshrinement losses will be to glass eels. We are also unable to accept the effectiveness of some of the mitigation that has been put in place to reduce impacts to impinge deals such as the lvnc reduction factor. Through our review of numerous technical reports and issued through the beam's programme, we are unable to determine what the survival rate will be for any eels that are entrained through the cooling water system, due to several uncertainties that have been identified to the EMU. The enjoyment mimic unit used to simulate the passage of a grassy hill through the cooling water system and assess what its survival would be. applicant originally started by saying there would be 100% survival of glass eels passing through the system. I think they now are in a position where they have stated they'll be at 2.8% survival. We have looked at this in further detail. We are of the opinion that if they take into account the mortality of both the drum and band screens that it will reduce to about 75% survival. And if they use the L 95 confidence interval, that reduces it down to 68% survival. That still doesn't take into account certain things that could affect survival rates. And we do not consider that to be a precautionary figure. There's a lot of uncertainty over what the actual enjoyment level will be of grass hills from size We'll see. We're of the opinion, that site that the applicant has undertaken to limited an amount of sampling to determine what the impact will be. When we've looked at their glassy or specific

surveys, they've only undertaken 8.75 hours of sampling over 11 days in a single year. We feel that this potentially missed peak migration period for glass eels in that period. They already sampled in daylight, where there's quite a lot of evidence to demonstrate that glass eels are likely to migrate at night as they do in estuarine environments. And when we have approached the applicant over this, they try to produce a worst case alien treatment assessment in a technical report named beams SPP 104. And for my review of that, it uses speculative calculations, which are built on assumptions, they do not appear to apply to all the sensitivities that could influence the level of enjoyment for those deals. And we are in a position where we cannot conclude what the level of enjoyment will be from the operation of size We'll see. So, I will say company indicated at a meeting to us that it would not be possible to monitor glass your enjoyment at size we'll see due to constraints with the station design and available space for monitoring equipment. Without in treatment monitoring conducted at a sufficient intensity, we will not be able to confirm what the actual impact ills and the Anglian River Basin district stock are once the station becomes operational size will see has indicated so the applicant has indicated to us in some recent meetings that they are willing to provide some mitigation for migratory species, including golf sales, in the form of increased fish passage in the water bodies adjoining the size will see area, namely the old, the old and the blys. This is a welcome step. And we do feel that this could help to offset some of the impacts and we will work with the applicant to develop those plans. We have a similar concern over smell, which is our other species that we're mainly concerned about. And I'll just get to that on my documents if you allow me to. Of course that's fine. Thank you so much. Also migratory By the way, they are Yes. Okay. Thank you all. So

45:03

yeah. So the Environment Agency has a statutory duty to maintain, improve and develop smelt fisheries and conserve their aquatic environment under the environment act 1995. They're also species listed under the bap biodiversity action plan list, and there are key indicators species under the water Framework Directive. smelt have been described as vulnerable, rare and very sensitive to anthropogenic environmental changes. And smelt populations have historically been impacted to a point causing the collapse and loss of discrete populations of the species from some water bodies on the East Coast, for which their recovery has taken a long time. And some bodies have not recovered from this historical collapse. The applicant has hypothesised that smelt abstracted in the cooling water system from size we'll see will be part of a larger population belonging to the southern North Sea. We have no evidence to suggest that that would be the case at this time. And whatever stock comparative is used for smelt, it would need to be proven that the level of immigration from a wider stock could offset the level of exploitation from the cooling water intakes at size, we'll see if it was not to risk the population that is present within the orange old water body and risk the unsustainable exploitation of that population and the potential collapse of it. I think I'll leave it there. I could go into more detail. But if you've got any more specific questions, if you'd like me to expand on on the size of the impact, I couldn't do that, sir.

46:46

There's only one thing which I would like to let you to deal with in your post hearing submission. Can you just put a paragraph in to explain to me the origin and importance of the EU regulations? So I've got them in context. It may be that it's buried somewhere in either in the in the examination library. I

haven't dug it out yet. But that would be helpful to me. Yes, of course. Okay, that's that that will thank you very much for making that neck clear. I'm going to go now to the eastern inshore fisheries body.

47:28

Thank you, Stephen Thompson eaten angelfish and Conservation Authority, Eastern Africa. So this is about glass eels. Bluefields, we, we defer to the Environment Agency and natural England in connection with with my feels. We have nothing we can no substantively add on this particular subject, although we do have other comments on other items in Section E. Okay. Glass, other migratory fish. Again, we differ from by armed agencies and have superior knowledge and information on this. Thank you.

47:58

That's very kind, natural England. Do you wanna say about yields and the migratory fish?

48:07

And I Yes, sir. J. K in central England. Yeah, we we obviously do have an interest in eels from a continent conservation point of view. But yeah, we defer to the vom latency there under the EU regulations. We do have some comments on the tweet shed. I'm here. Now can pass over to my colleague, Alison hatebreed. And

48:32

thank you, summer. Thank you. Hello, sir. My name is Alison atteberry. from natural England. I just want to check you can hear me all right. My Internet's been a bit dodgy today. No, it's behaving well at the moment. Fantastic. I just wanted to draw a quick bit of attention to tweet shared and that gentleman's comments on the estimation of the baseline population. So just just right, are they are they migratory? They are okay fine, keep going. Yes. So, they are migratory and an annex two species. So the HRA concern as well. And the report SPP 100 addresses, smelt and shed and that's from from EDF. So I think we can add more detailed writing. But I just wanted to highlight here that this we have a concerns around the methodology in calculating the scales of assessment for that particular species, as well as the wider fish species, which should be mentioned already.

49:45

So knowing about the fact you've got a concern about the methodology, I mean, I, I hope that you're discussing that with the with the applicants and trying to either find find a meeting point or agreement different set of data clearly.

50:01

Yes. So we mentioned it in our written representations. And I think the EDF comment in reply was they would put in writing something in for deadline five. So I just wanted to make you aware that something else is coming in. And that is an ongoing conversation.

50:15

So not agreed yet. Not agreed yet, but we're working on it. Thank you. Thank you very much. Thanks. I hope your your internet holds up. Right.

50:32

Is there anybody else who wants to contribute on glass eels and migratory fish and train that? know Okay. Mr. Truman's I'm going to go to equivalent adult values. Next, as you want to say about graph eels in the

50:54

past, we'll come back on the points made about the class seals. So we do feel that some the survey work has been thora demonstrates a low density. We're due to come back on smelt. An update of SPP 103. Deadlines six. And with regard to natural England, were due to respond to their deadline to comments on trade shard? deadline five, so I think that will be picked up there. The the only point perhaps on eels is that notwithstanding our our conclusions on the absence of impact on eels we are pursuing, as as was indicated, mitigating measures by way of yield passes. If you're interested in having a couple of minutes just to understand those discussions and where they're going then Mr. Roast can can deal with that.

51:53

I think I'm gonna decline that, that that that kind of I'm pleased that the discussions are are proceeding. So as I as I hear this, I detect that there are a lot of a lot of issues about a lot of different Marines, the marine species, and I can only make to the point which I made earlier, which is, you know, please proceed with your discussions otherwise, it can be quite a lot less than Secretary state. Guess that's understood. Yeah. Let us may turn out to be called an adult values. And the discussions dispute about about that. I think I'm gonna go to the Environment Agency first, Mr. chairman said then you can come back and reply to everything all in one all at once. So if the agency would like to come up because I think they're the source of it, I think you all who are raising this and if I fingered you unfairly then then do say so. Now, so hang on. So, the applicant is telling me as to three eights if you want reference, they have produced a new report which is sp p 102. Revision one that responds to your suggestions that spawning production for gone EA V for more appropriate and the E v methodology which is proposed in reports Tr 383. That's simply quotation from there as and they say that the report demonstrate the use of spoiling production for gone AV does not enhance the quality or the reliability of the sizable sea fish abstraction assessments. They go on to say as described the SP SPF EA says boring production forgone EA v would provide incorrect assessment conclusions and would increase assessment uncertainties. Now, you also say in your worthiness state, the common ground that you've got says that the applicant is is waiting for your feedback from an Excel modelling tool to been developed and shared with you around EAP parameters and the assessment and scales of assessment. We've got losses of fish and how we represent them being dealt with as well. This is clearly a somewhat complex methodological dispute and I really don't want to get it I'm sorry, but I can't get involved in all the details of it at the moment. I think what I would like to do there for at this hearing is to try to hone down. So I got a clear view from both sides. What what the dispute is and if or how there is going to be a resolution as we go forward. I think I also detect that's a water Framework Directive issue if the agency doesn't agree, and you have suggested that derogation may then be needed. So can I hear your view please on that on that question, which I have just asked and then I will go around around the room and finally back to to Mr. Mr. trogons. How are you? What are what are what what give me a clear view of the of the issue, and how or if there's a resolution going forward?

55:34

Certainly, sir, may well ask my colleague Kuch Markin to come in here again.

55:45

Hello, again, Circuit Markham Environment Agency. So yeah, as a very high level summary. The main issue we have with the AV calculation method used by the applicant is that it doesn't take repeat spawning of species that are able to reproduce for more than one spawning event into account. Individuals of many species of fish survive to spawn in US subsequent to the one they first matured, they're what we refer to as repeat spawners. They also produce more eggs in subsequent years as they increase in size. And some species select more successful breeding locations in subsequent years. And the method used by the applicant does not take repeat spawning into account. I could sort of demonstrate if you wanted to sort of change of impact that could make to the assessment as it stands, if that would be useful. Would that be too much detail? Okay, girl. So, if we take some of the figures provided by the applicant, I'll use Spratt as an example. Is there a species that have been covered by quite a lot of things that with the mitigation provided by the applicant, which would include the reduction factor of the LV SC intake and the AV calculation, their predicted impingement is 1.8 million just over if you take away the LV SC factor. As we, as we've heard, no one thinks there's enough evidence to determine that that work. And you remove the AAV calculation for that species that then goes up to 6.9 million. If you look at herring, same set of parameters, with the mitigation applied for HIV, and LVNC, it's currently predicted to be 665,000. If you remove those factors, it goes up to 2.6 million. So these issues can make a big difference to what the impingement losses will be. And we think that repeat spawning needs to be taken into account.

57:58

And he was he he doesn't he doesn't take in beats morning. No. Okay. All right. Thank you. Thank you, sir.

58:12

MMO, are you content to tuck in behind the agency on that? Or if you've got a separate view? I think I think you said your content during your statement of common ground.

58:24

Yeah. Hi. MMO. Yes, that's correct. Thank you so much bring you in. Naturally, then do you want to say anything about it?

58:36

Hello, I might say a quick word again, if that's alright. It's Allison from Natural England. And we do we tuck in behind the Environment Agency largely. Just wanted to highlight that we didn't address this issue specifically in our written representations because it is one of several examples of the amount of uncertainty attached to these impingement assessments and these assessments of fish mortality are a crucial part of the environmental impact assessments and is a large reason why Natural England is unable to agree with the findings.



59:13

Okay, thank you very much. Does the eastern shore fisheries as unconstant Association want to say anything?

59:27

Eastern inshore fisheries and Conservation Authority. Thank you. Thank you. We know we have nothing to add to the comments which have been made previously, but I do agree with them. Many things. Mr. traitements?

59:45

Yes, thank you. So well. How do we how do we resolve this? If the point is resolved in time, in the context of the Hinkley Point appeal, then it's a general methodological point. We should hold good whether it's Hinkley Point or sighs Well, of course, we may not have that resolution, the only way it can be resolved, I think within the the processes of this procedure is in writing, it's a written procedure. Simply there has to be thorough consideration of the written materials put in by both parties. And ultimately the sexual state will have to make his mind up on on who is right on it.

1:00:30

Or sitting on the on this on this method or on this methodology points of of pa v versus, as balling fish stops.

1:00:39

Well, the simple point on this is that it's to do with a century it's a risk assessment tool. One is trying to get a get a feel for what the impact of the juvenile fish being impinged would be. Given that we know that biologically, a very high proportion of those fish won't survive to adulthood and go on to sport. Now, in terms of risk assessment, the way that seafarers have approached it is to say that if one has a 1% or less effect on on fish stock, then that is not going to be problematic, because one sees have much higher variations in fish population through fishing, through natural mortality, through weather events, and so on. So, essentially, the the problem we have and this was canvassed at very great length in cross examination at at Hinkley Point is that if if you are taking an annual rate of loss, you're trying to say what's the annual rate of loss from this fish population, then Rei v method gives you an annual rate of loss, which you could compare with the size of the fish population. If, however, by using the SPF method you are, what you're doing is effectively rolling forward in time on a cumulative basis, the absence of that fish from the population not only in one year, but in all the future years in which it might have spawned. The very simple point is you're not comparing like with like, then you that's essentially the the heart of it. One can explain it in very clear or very complicated or very difficult ways. But that that is essentially the issue. I mean, we will try and set it out as clearly as we can in in writing for you. I think that the the examining authority, and state ultimately is going to have to review what's read and take a view on which appears to be the correct method, I would say that in relation to two species, trade, shad, and EI, we have on a very precautionary basis, assumed nav of one so EvenOr a juvenile trade shadow el, which is impinged is given the equivalent of an adult that's a very precautionary assumption in itself in relation to those species. But that is all set out in our in our written material. I really can't, I think, go further than directing you to that.

1:03:23

Okay. All right. Well, I will take you up on what I think was a an offer or a briefing note about it. Which is a briefing note, which takes us to it in as straightforward but not over simplistic manner, and refer me to the right material to the right materials, please.

1:03:47

We're very happy to do that. And we can in doing that draw on, I think legitimately the material that was put before the inspector in relation to Hinkley Point because they are exactly these points. Dr. Simon Jennings of C first gave evidence there explained it, I believe, very clearly there. We'll try and draw on that to give you a few like a potted version of aavs and the rights and wrongs of SPF. I'd assumed it was already in your application material. Yes, it is. But we'll we'll try and put it into a if you'd like a standalone clear, clear form.

1:04:28

Okay, thank you. Right. Okay, on fisheries, the fish stocks in general. And in the HRA context, I think I've got the the eastern inshore fisheries authority would like to see something and need they're on my list to do so.

1:05:03

Thank you, sir. Yes. In connection with fisheries policy as with any large scale activity in the sea, there is likely to be an impact on local fish locally other local uses of proceeds such as inshore fishermen. And we would just request that the ongoing consultation and correspondence communication with those other actors in the field continues in connection with fish stocks, I previously made the point about the area over which the impact local impact is considered, I think, to consider that over such a wide areas and ICS area is not appropriate. And I note the applicant's efforts in tightening down the area of which the impact is considered against which aren't which I think is a good move. Why is that not explained to me why it's not appropriate, because the the the impact from a local in the the effect from a local impact was considered over a very wide area, the ICS areas of the Southern North Sea are sometimes even wider of the whole fish population area. Evidence now is indicating that fish populations are in fact much more localised, in very, very many cases. So it may be that the impact rather than being diluted over the whole, Southern North Sea is actually being felled by a much more local population of fish. So rather than being if you like falling below a certain threshold of 1%, or naught point 1%, it may have been considerably more than that for a certain area of fish. It's not possible just for instance, to to assume that the impact will be a drop in a bucket would send spread throughout the whole of the bucket to the impact will will very likely be much more locally felt. And the applicant has gone very considerable way towards assessing that array. recognise and welcome that that work. If they've done that, then what is your criticisms? Thomson? I don't really have any i think i think that their work is that has been very positive. And I think it has, assuage a lot of concerns, my concerns. Thank you very much. That's helpful. Having said that, I must add that I think there is still some appreciable uncertainty about the possible impact. So those concerns are assuage on the on the assessed impacts is the level of assessed level of impact. But I do think there is a significant amount of uncertainty over that. And that'll be where my concerns rests, is that those uncertainties, I think need to be factored in for the future and consume consideration given to adaptive risk management as to what

should happen in the future. If the predicted impacts do not actually those do not do not actually come about if the impact is greater than that.

1:07:40

That's in your written representation. It will be reading the stuff you're producing for me next week. Yes. Okay. Thank you. MMO. Anything else you want to say about fisheries and fish stocks in general?

1:07:59

Whether Williamson from the MMO here, not particularly, we're fairly aligned on this matter in terms of using the use of the IC stock data, of course, with those two outliers, which were the requests for further sensitivity analysis over dimensional fish using zero effectiveness for the Lv S II design and the FRR system. Other than that, we're fairly content on the topic.

1:08:23

So the criticisms which mr. Thompson has just been making are not ones which you make,

1:08:28

not in our representations or to the stage now, we will consider it further at the written wrap if we ask. Now, that's fine.

1:08:39

Okay, thank you very much. Natural England. Do you want anything more about fisheries and fish stocks and the HRA context of them?

1:08:58

not turning in Jack Haynes. Nada. I don't believe we have anything further to add.

1:09:02

You said already. Okay. I'm obliged, and the Environment Agency.

1:09:13

So it just it struck me some of the monitoring and securing mechanisms to to look at the impacts of fish might be might be useful. I don't know if that will be picked up in agenda I'm see kind of more broadly than the water quality or not sees.

1:09:35

Go on, tell me now just in case we don't deal with I think I've got more sort of mechanical and systematic issues about securing it's about mechanisms. What you want to say about monitoring,

1:09:49

I suppose very briefly, and we've highlighted in our written reps and Kirk suddenly addressed the uncertainties about about monitoring in some Some of his comments are ongoing monitoring or monitoring on ongoing monitoring. So So our understanding is that they're potentially potentially limited opportunities to monitor in terms of impingement versus entrainment. Also Kirk highlighted. If, if that

monitoring does show adverse impacts, then the ability for the applicant to optimise the system within the bounds of the DCR is very, very limited. And we've highlighted in our written reps that perhaps some further legal mechanism might be, might be suitable to, to help safeguard to those adverse impacts, because it's likely that compensation would be required off site to in order to to mitigate against those unforeseen impacts. And we understand the applicant is preparing further information on what monitoring they can do and what optimization they they could do if, if there were negative impacts detected through that monitoring.

1:11:17

Okay, well, I look forward to seeing what comes out from that. And doubtless it'll appear in your stain for common ground, either on the Yes, done or no, we're apart issue. Thank you. Does anybody else want to contribute finally on the question of fisheries, fish stocks and their relation to HRA?

1:11:44

Okay. So we'd love it, if I could. I beg your pardon. Dr. Henderson, could I just make a points on that? Yes, Dr. Henderson. So the the use of the firm local, as opposed to large regional stocks is very problematical inefficient if we search without a doubt. And there's been there's one glaring case in the case of sizewell, which I think hasn't been properly considered. Just down the coast in the river Blackwater. There's a local spring spawning herring population. There's also of course, a major autumn spawning North Sea population. Now, I have not seen an analysis, which breaks down the captures on size will be into local stock, namely, the Blackwater stock, versus the overall North Sea stock. These can be distinguished, they actually have different realistics things like vertical number. Also, of course, because the spring spawning local stock and the Blackwater sports in the spring, it's possible to see I've heavily laden fist with spawn, if you catch it the right time of year, you know, it's a flat water fish. So I think there's much more information required on just what proportion of the fish which are captured on size will be and will be captured by size we'll see actually derived from the local Blackwater stock, which was a particular stock which is managed separately from the main North Sea stock and has been of concern conservation concern in the past.

1:13:37

Okay, thank you. Mr. Mr. Scared, I've still got you on my screen. Frozen format. It may be that you're if you're still with us, the your your device has got a bit stuck. off your back moving occasionally. But if you could put on put switch your camera off, I'd be grateful. Oh, yeah, sir. I have to. Thank you. All right. Okay. It's probably that I had something at my end. Well, we passed. Everybody you need to get three, don't you? Yes, that's correct. If if possible. Okay, that's good. Class one. Now, I said, we're going to have half just half an hour for lunch, and then we'll have a will. If we do that, we'll get a run of an hour and a quarter. Want to get through as much as possible whilst you're still with us? I see what's going on. I'm told that somebody's hand is up by one of my colleagues. I can't see it here. whose hand is it? Let's go out please.

1:14:56

Hello, it's me again. Allison from natural England. Thank you. Go ahead. I just wanted to add a bit of support to Dr. handwritten statement just now is that natural England did highlight the Blackwater stock of herring to the applicant, on in our letter dated 29th of August 2019. And at the available version of

the impingement estimates at that time, there was to clear seasonal differences to seasonal peaks observed in the impingement data, which did appear to us to indicate entrainment from the two separate stocks at two different times of year. And that's significant, because hearing are some of the most highly trained species they also form a substantial amount of the prey of the turns for the HRA and they also are quite delicate and they do not survive the fish recovering return system. So they are assumed to have 100% mortality if they are taken into the the system. Okay, what was the other species you had? You said herring and Oh, that was just herring and there are to recognise populations. And I think EDF have recognised in their latest documents the existence of Blackwater herring, I would have to go back and ascertain exactly what the comments were. But I this is an example of this scale of assessment question that we remain concerned about.

1:16:30

Okay. Well, my concern, which I think you've got all, from previous remarks I've made is that there are quite a lot of Yes, of issues out outstanding. And we're going to need a clear statement of what is what is left, and we would encourage you were proper to reach agreement if you can on those things. So I tremens, I should come back to you on this. Before I do, I'm actually going to take in a journal of two reasons. One is if I journal for half an hour, then we'll get an hour and a quarter with the AI. And secondly, that my I didn't see that hand go up. And I've got Mr. scared. Still, it's still on screen, although you shouldn't be there apparently. And before the system falls over, we're useful if I shut it down and started up again. So we will adjourn now. It's 18 minutes past past one, and I would like us to come back please at 10 to two. Thank you very much. Thank you, sir.