

**From:** [REDACTED]  
**To:** [Wylfa Newydd](#)  
**Cc:** [REDACTED]  
**Subject:** Submission of evidence/comment on Appendix 1-10 dated 12-02-2019 PINS Ref EN010007 Revision 1 Deadline 5  
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**Attachments:** [image001.png](#)  
[Comments on Appendix 10.1 19\\_02\\_19 DK.docx](#)

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Dear Sir/Madam,

Please find attached our comments on Wylfa Evidence.

Appendix 1-10 dated 12-02-2019 PINS Ref EN010007 Revision 1 Deadline 5.

Best wishes,

David Kay and Mark Wyr.

Professor David Kay FRSPH, FRGS, MCIWEM, FLSW

Professor of Environment and Health

CREH, Aberystwyth University,

[REDACTED]

+44 1570 423565 (Office Tel and Fax)

[REDACTED]

<http://www.aber.ac.uk/en/iges/staff/academic-staff/dvk/>

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To the Planning Inspectorate [Wylfa@planninginspectorate.gov.uk](mailto:Wylfa@planninginspectorate.gov.uk)

19th February 2019

We have examined some of the assumptions in the evidence which underpins Appendix 10.1 and these comments derive from that exercise. Please note, that whilst we would question whether some of the flow and faecal indicator organism assumptions are really characteristic of the 'worst case scenario', we do not believe that the insertion of other credible assumptions would result in a different conclusion than that drawn by the authors of 10.1.

Detailed comments

1.2.2 18.5 or 18.0 l/s

Line 3

The footnote to Table 2-1 below explains that this is FFT for each of the plant(s) and is hence an overestimate. It would however be useful to see real flow data plotted to ensure the plants were at no risk of producing untreated bypass flows if and when influent raw effluent exceeded the 18.5 l/s FFT limit.

Line 7

It is surprising that the worst case is not produced when wind and possibly waves enhance connectivity.

The statement here seems to contradict 2.3.1 (6th un-numbered bullet) below where onshore (Northerly) wind direction is assumed to influence the worst case model.

1.2.3 Line 3

Do we have coordinates for these modelled locations?

1.2.4

Line 1

See Line 1 and 7 comment above regarding the 'worst case'.

Line 5

Technically *E.coli* should be italicised throughout.

Line 5

Ok this is probably true in terms of the statistical of the GM value but is it also true for the 95 and 80 %iles values?

1.3.3

This may have been covered in earlier correspondence, but mention of what exactly the empirical basis of the survey data is and detail on what data it contains would be useful to the technical community.

2.1.3 Line 2-3

The words 'bespoke water level and current measurements around the Wylfa Head and offshore areas' Are these bed and/or boat mounted ADCP surveys? If so, what type and how many surveys?

## 2.2.2

Line 6

OK but what of the model's fitness for bacterial modelling.

## 2.3.1

Lines 7-8

OK but is 'mean' wind speed used characteristic of the worst case scenario?

Table 2-1

From empirical data

We note that Cemaes STW is a biological filtration plant

GMs for Anglesey biological filtration plant effluents (Dry/Event):

<i>E. coli</i> /100ml	30,000/120,000
pIE/100ml	15,000/57,000 Presumptive
cIE/100ml	11,000/17,000 Confirmed

Combined storm overflow and inlet event samples:

<i>E. coli</i> /100ml	2,000,000
PIE/100ml	450,000 Presumptive
CIE/100ml	260,000 Confirmed

So, the *E. coli* value used is a bit lower than the event GM whilst the IE value (assuming cIE) is higher.

The concentrations are certainly lower than recorded in storm overflow samples

Should a worst case include storm overflow and not just FFT FE?

The upper 95% CIs for the FE GMs are (Dry/Event):

<i>E. coli</i> /100ml	55,000/160,000
pIE/100ml	27,000/100,000
cIE/100ml	20,000/27,000

Storm overflow:

<i>E. coli</i> /100ml	2,700,000
pIE/100ml	600,000
cIE/100ml	350,000

## 2.4.3

Line 1

This covers a broad range of treatments with different FIO concentrations in the FE.

## 2.3.7

Line 1-8

Should the sensitivity testing not include an evaluation of different FIO concentration assumptions as well as T<sub>90</sub>?

3.1.2

The standard is no longer revised and it has a reference code that should be referred to: 2006/7/EC.

3.2.1

Line 6

Not quite true, this is a 95%ile values for the *E. coli* PDF of samples taken over 4 years samples (EU) or 100.

3.2.3

Line 1

How are the Predicted 95%ile values calculated (i.e. is it regular sampling of the predicted values and what was the 'n' value of the sample data set?. The reported values look in broad correspondence to the plot above but it is not easy to check this? It would also be useful to know if the sampled data from the time series predictions were log normal.

5.1.3

Line 2

Where is this referenced? Is it the Kay et al 2007 (actually published in 2008) paper cited, if so see comments above on the FIO concentrations assumed.

5.1.8

Line 2

This is not strictly true of the methods in UK blue books but it is true where a 10 fold dilution is made on FIO samples prior to treatment, which may not be a good approach where the data is needed to calculate a 9%ile compliance rate as in UK bathing waters.