



**Defence  
Infrastructure  
Organisation**

Secretariat

Defence Infrastructure Organisation

Kingston Road

Sutton Coldfield

West Midlands B75 7RL

United Kingdom

E-mail:

DIOSec-Parli@mod.uk

Our Ref. FOI2014/01316

Your Ref:

27 February 2015

Dear

Thank you for your email of 3 February 2015 requesting the following information:

*Please supply information held or exchanged relating to the second wind farm at Fallago Rig, Scottish Borders, also known as Fallago Rig II wind farm or Fallago Rig extension*

I am treating your correspondence as a request for information under the Freedom of Information (FOI) Act 2000.

A search for the information has now been completed within the Ministry of Defence (MOD), and I can confirm that some information in scope of your request is held.

I can confirm that the MOD was consulted on the Fallago Rig Extension by the Scottish Government on 21<sup>st</sup> January 2015. The MOD responded to this consultation on 11th February 2015 setting out the MOD position in respect of the proposed Fallago Rig Extension.

I attach the following documents:

- Email consultation from the Scottish Government to the MOD dated 21<sup>st</sup> January 2015.
- Email on behalf of the Developer to MOD dated 3<sup>rd</sup> February 2015
- Email to MOD technical advisors advising of different grid references dated 3<sup>rd</sup> February 2015
- DE&S Technical email and report dated 5<sup>th</sup> February 2015
- Email with Air Defence response dated 5<sup>th</sup> February 2015
- Air Traffic Control response dated 5<sup>th</sup> February 2015
- Email and letter to Scottish Government from the MOD dated 11<sup>th</sup> February 2015.

The information in scope of your request can be found attached but some of the information falls entirely within the scope of the absolute exemptions provided at section 40 (Personal Data), and therefore personal information has been redacted.

Section 40(2) has been applied to some of the information in order to protect personal information as governed by the Data Protection Act 1998. Section 40 is an absolute exemption and there is therefore no requirement to consider the public interest in making a decision to withhold the information.

You will note that the MOD letter references that the developer has submitted a mitigation proposal with the view of addressing the impact of the proposed development on the radar. The MOD and the developer are currently in discussions on this matter. The MOD cannot release information appertaining to these discussions as the information falls under Section 43 Commercial in Confidence.

Wind farm developers provide MOD with commercially sensitive information for these consultations on the understanding that it will be kept confidential; and this level of trust and co-operation is vital for the process to work. The MOD believes that that any breach of confidence in this area could be actionable. Therefore, it is not in the public interest for the developer to be unable to rely on the ability of a public authority to maintain the confidentiality of information passed to them. This would ultimately discourage wind farm developers to confide in the MOD and prejudice the relationship between the MOD and wind farm developers.

Discussions with regards to proposed mitigation reports and solutions are classed as 'a work in progress' and such discussions are conducted privately between the relevant parties. Opening up these discussions to external parties, who may have concerns or information requests on the subject, would cause undue interference and will have an inhibiting effect on the ability of wind farm developers to engage with the MOD both fully and in a timely manner. The external interference would force developers to be more candid and to share less information with the MOD in order to reduce its exposure to external questions and requests for information on those matters. The reduction in the quality and quantity of the information exchanged on proposed solutions would impede the developer's ability to work with the MOD.

Yours sincerely,

DIO Secretariat

If you are not satisfied with this response or you wish to complain about any aspect of the handling of your request, then you should contact me in the first instance. If informal resolution is not possible and you are still dissatisfied then you may apply for an independent internal review by contacting the Head of Corporate Information, 2nd Floor, MOD Main Building, Whitehall, SW1A 2HB (e-mail CIO-FOI-IR@mod.uk). Please note that any request for an internal review must be made within 40 working days of the date on which the attempt to reach informal resolution has come to an end.

If you remain dissatisfied following an internal review, you may take your complaint to the Information Commissioner under the provisions of Section 50 of the Freedom of Information Act. Please note that the Information Commissioner will not investigate your case until the MOD internal review process has been completed. Further details of the role and powers of the Information Commissioner can be found on the Commissioner's website, [www.ico.gov.uk](http://www.ico.gov.uk).

---

**From**

**Sent:** 21 January 2015 10:53

**To:**

**Subject:** SCOPING OPINION REQUEST FOR SECTION 36 APPLICATION FOR THE PROPOSED FALLAGO RIG WIND FARM EXTENSION (FALLAGO RIG 2)

**SCOPING OPINION REQUEST FOR SECTION 36 APPLICATION FOR THE PROPOSED FALLAGO RIG WIND FARM EXTENSION (FALLAGO RIG 2)**

AMEC *on behalf of* EDF Energy Renewables, has formally requested, in accordance with regulation 7 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000, (“the Regulations”) a scoping opinion for the proposed Fallago Rig Wind Farm Extension (Fallago Rig 2) located in the Scottish Borders on land to the West of Longformacus in the Lammermuir Hills approximately 20 miles South East of Edinburgh.

Under regulation 7, Scottish Ministers are required to consult the specified statutory bodies (and other interested parties) as to their views on the information which ought to be provided in the environmental statement.

As the regulations allow three weeks for this consultation I would be grateful for your comments by **Wednesday 11<sup>th</sup> February 2015.**

Please note reminder letters are no longer issued by the Energy Consents and Deployment Unit for any project. If we have not received your comments, nor have we received any extension request by this date we will assume you have no comments to make.

Please send your response in Word format

If you have not received a copy of the scoping report from the developer please let me know by email

Regards

Administrator | Energy Consents Deployment Unit | 4<sup>th</sup> Floor | 50 Atlantic Quay

24/02/2015

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\*\*\*\*\*

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Tha am post-d seo (agus faidhle neo ceanglan còmhla ris) dhan neach neo luchd-ainmichte a-mhàin. Chan eil e ceadaichte a chleachdadh ann an dòigh sam bith, a' toirt a-steach còraichean, foillseachadh neo sgaoileadh, gun chead. Ma 's e is gun d'fhuair sibh seo le gun fhiosd', bu choir cur às dhan phost-d agus lethbhreac sam bith air an t-siostam agaibh, leig fios chun neach a sgaoil am post-d gun dàil.

Dh'fhaodadh gum bi teachdaireachd sam bith bho Riaghaltas na h-Alba air a chlàradh neo air a sgrùdadh airson dearbhadh gu bheil an siostam ag obair gu h-èifeachdach neo airson adhbhar laghail eile. Dh'fhaodadh nach eil beachdan anns a' phost-d seo co-ionann ri beachdan Riaghaltas na h-Alba.

\*\*\*\*\*

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**From:**  
**Sent:** 03 February 2015 10:40  
**To:** DES ADATS-Task Management-Windfarms (MULTIUSER)  
**Subject:** 20150203 - Email to ADATS DIO20966(A) - Fallago Rig Extension - VURG  
**Attachments:** WFS\_ProForma\_20966.xls

Good morning,

Please find details attached. This is a Section 36 application at a height of 126.5m. Response by 06.02.01 please. Apologies for the short timescales!

Many thanks

Assistant Safeguarding Officer - Infrastructure Professional Services – Safeguarding  
DIO Operations Development and Coherence

**Defence**

**Infrastructure  
Organisation**

Kingston Road, Sutton Coldfield, West Midlands, B75 7RL

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**MOD telephone:** | **Telephone:** | **Fax:** | **Email:** DIOODC-

IPSSG2a1@mod.uk | **Website:** www.gov.uk/mod-safeguarding

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**Defence Infrastructure Organisation**

24/02/2015

DEVELOPER INFORMATION	
Company Name	EDF ENERGY LTD*
Addr1	1 Mandarin Road
Addr2	Ratton Bridge Business Park
Addr3	Houghton le Spring
County	Sunderland
Postcode	DH4 5RA
Country	
Contact	
Telephone	
Facsimile	
e-mail	
WIND TURBINE DETAILS	
Wind Turbine Manufacturer	
Wind Turbine Model	
Wind Farm Generation capacity (MW)	61.2
No. Turbines	17
Blade Manufacturer	
No. of Blades	3
Rotor Diameter (M)	93
Rotation Speed 1(RPM)	
Rotation Speed 2(RPM)	
Blade material	
Lightning Conductors	
Wind Turbine Hub Height (M)	80
Tower Design	T
Tower base diameter 1 / dimensions (M)	
Tower base diameter 2 / dimensions (M) (if not round)	
Tower top diameter 1 / dimensions (M)	
Tower top diameter 2 / dimensions (M) (if not round)	
Comments	

---

**From:**  
**Sent:** 03 February 2015 09:20  
**To:**  
**Cc:**  
**Subject:** Fallago Rig Ext grid refs  
**Attachments:** 35949 Fallago Rig existing and proposed turbine co-ordinates 13 01 15.xlsx

Please find attached a copy of the turbine co-ordinates as they are at the moment for scoping purposes.  
Please give me a ring if you need anything further.  
Kind regards

Principal Consultant, Planning and EIA  
Amec Foster Wheeler E&I UK Ltd

Partnership House, Regent Farm Road, Gosforth  
Newcastle upon Tyne NE3 3AF  
UK

D  
M +

amecfw.com



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24/02/2015

EXISTING TURBINE NUMBER	EASTING	NORTHING
1	356635	660323
2	356688	660026
3	356702	659645
4	356764	659295
5	357095	660511
6	357130	660103
7	357176	659653
8	357191	658882
9	357221	659293
10	357467	659963
11	357517	660363
[REDACTED]		
13	357671	658928
14	357696	659327
15	357748	658585
16	357924	659984
[REDACTED]		
18	358009	660763
19	358036	659664
20	358330	658262
21	358138	658909
22	358115	661215
23	358123	659359
24	358375	660107
[REDACTED]		
26	358449	660987
27	358631	658887
28	358480	659703
29	358549	658042
30	358603	659443
31	358789	658419
32	358703	660443
33	358817	660020
34	358860	660825
35	359049	659152
36	358909	659718
[REDACTED]		
38	359014	658733
39	359025	658155
40	359080	660292
41	359128	660652
42	359260	660020
43	359288	658537
44	358189	658584
45	359404	659510
46	359424	661104
47	359456	660424
48	359572	660807



PROPOSED FR2 TURBINE	COORDINATES	EASTING	NORTHING
49	360089	660109	
50	359755	659809	
51	359640	658405	
52	360187	657971	
53	359831	657999	
54	359354	658049	
55	359808	657610	
56	359464	657731	
57	359051	657702	
58	358668	657683	
59	358219	657919	
60	357884	658238	
61	357347	658552	
62	356871	658960	
63	357629	660762	
64	357735	661166	
65	358449	661331	

---

**From:**  
**Sent:** 05 February 2015 11:07  
**To:**  
**Subject:** 20150203 - ADATS obj DIO20966(A) - Fallago Rig Extension Re-sending with correct file extension VURG Wind Farm  
**Attachments:** WFS\_ProForma\_20966.xls; 20150205-DIO 20966(A) RADARS Fallago Rig Extension-RSP1d-O (3).doc

sent  
e-mail: DESADATS-Task Management-Windfarms (MULTIUSER)  
Tel. Ext 4543,

---

**From:**  
**Sen**  
**To:**  
**Subje** ) - Fallago Rig Extension - VURG

Wind farm is Concerns but re-sent as was wrong file extension on report.

---

**F**  
**Sent:** 03 February 2015 10:40  
**To:** D  
**Subject:** 20150203 - DIO20966(A) - Fallago Rig Extension - VURG

Good morning,

Please find details attached. This is a Section 36 application at a height of 126.5m. Response by 06.02.01 please. Apologies for the short timescales!

Many thanks

Assistant Safeguarding Officer - Infrastructure Professional Services – Safeguarding  
DIO Operations Development and Coherence

**Defence**

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**Organisation**

Kingston Road, Sutton Coldfield, West Midlands, B75 7RL

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MOD telephone: | Telephone Fax: Email: D

| Website: [www.gov.uk/mod-safeguarding](http://www.gov.uk/mod-safeguarding)

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**Defence Infrastructure Organisation**

24/02/2015

DEVELOPER INFORMATION	
Company Name	EDF ENERGY LTD*
Addr:1	1 Mandarin Road
Addr:2	Ratton Bridge Business Park
Addr:3	Houghton le Spring
County	Sunderland
Postcode	DH4 5RA
Country	
Contact	
Telephone	
Facsimile	
e-mail	
WIND TURBINE DETAIL	
Wind Turbine Manufacturer	
Wind Turbine Model	
Wind Farm Generation capacity (MW)	61.2
No. Turbines	17
Blade Manufacturer	
No. of Blades	3
Rotor Diameter (M)	93
Rotation Speed 1(RPM)	
Rotation Speed 2(RPM)	
Blade material	
Lightning Conductors	
Wind Turbine Hub Height (M)	80
Tower Design	T
Tower base diameter 1 / dimensions (M)	
Tower base diameter 2 / dimensions (M) (if not round)	
Tower top diameter 1 / dimensions (M)	
Tower top diameter 2 / dimensions (M) (if not round)	
Comments	

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Ministry  
of Defence

# **AIR DEFENCE & AIR TRAFFIC SYSTEMS RADIO SITE PROTECTION**

## **TECHNICAL REPORT**

**Issue:** 1  
**Date:** 05 Feb 2015

**Title:** WR80026/01  
DIO 20966(A) – AIR TRAFFIC CONTROL (ATC),  
NATIONAL AIR TRAFFIC SERVICES (NATS), AIR  
DEFENCE (AD) AND MAA RADARS –  
ASSESSMENT OF THE DEVELOPERS  
PROPOSAL TO ESTABLISH A WINDFARM AT  
FALLAGO RIG EXTENSION, SCOTTISH  
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Prepared by:	ADATS DT RSP1d		
Authorised by:	ADATS DT Hd RSP		

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RAF Henlow, Bedfordshire. SG16 6DN UK

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**FOI FORMAT AND SUMMARY**

20150205-DIO20966(A) Concerns Fallago Rig Extension-RSP1d-O

Radar Field Strength and/or Radar Line-of-Sight analysis indicates that the proposed windfarm at Fallago Rig Extension shows a high degree of probability that it will be detected by one or more MoD radars to a degree that will affect their function.

Issue: 1 Dated: 05 Feb 15

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AIR-1GP-BM Cap Safeguarding Windfarms  
Defence Infrastructure Organisation – Return to Originator  
AIR-1GP-BM Cap Safeguarding SO3

**Internal:**

DES ADATS Task Management-Windfarms (Multiuser)

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Figure 1 – Local area map for Fallago Rig Extension windfarm  
Figure 2 – Coverage prediction plot for Brizlee Wood AD Radar

**REFERENCES**

- A. E-mail from Defence Infrastructure Organisation, DIO 20966(A) dated 03 Feb 15
- B. JSP846 – Issue 7 dated 01 Sep 14
- C. QINETIQ/D&TS/SEA/TA0705054/1.0 – Assessment of Wind Turbine Effects for DCSA
- D. AWC/WAD/72/655/TRIALS dated 10 May 05 – The effect of wind turbine farms on ATC radar (Qixotic Zephyr trial)
- E. AWC/WAD/72/655/TRIALS dated 06 Feb 05 – The effects of wind turbine farms on Air Defence radars (Swift Crofter trial)
- F. Further evidence of the effects of wind turbine farms on AD radar dated 12 Aug 05 (Mistral Crop trial)
- G. Trial report Weave Elbow (Stage 3) dated 21 May 2014 – Further testing of wind turbine effects on the TPS-77 radar.



## Standard Assumptions and Terms

RLOS - Radio Line of Sight. This is a linear path estimation of line-of-sight at radar wavelengths that compensates for refractive effects by assuming a reduced earth curvature (4/3 earth radius).

Clutter is taken into consideration as part of the propagation model that generates coverage plots and can significantly reduce the probability of detection by the radar.

Stated accuracy for the Ordnance Survey ground height data is  $\pm 3\text{m}$  to 1RMS. DES ADATS maintains mapping data at far greater accuracy for the radar positions. The radar aperture heights used in calculation reflect this increase in accuracy.

All heights AMSL are referenced to the National Grid geoid. All angles are referenced to Grid north unless specifically stated.

Areas of the coverage plots shaded in blue indicate where a turbine of the dimensions given is predicted to be detected by the radar.

**Level 1 Assessment:** Considers RLOS only and is used for radars where no parameters other than physical location are available. This method is not considered to be particularly accurate.

**Level 2 Assessment:** Calculated probability of detection from available radar parameters, turbine parameters and terrain data. The total RCS of the turbine is used in all instances. This report constitutes a Level 2 Assessment except for NATS Great Dun Fell and MAA Yeovil. Coverage plots are not relevant for Secondary Surveillance Radars which are more concerned with short-range reflections.

**Level 3 Assessment:** A more extensive Probability of Detection calculation, utilising sectioned RCS. This method is considered to give more accurate answers when RLOS is not present and diffraction is the sole method of detection.

**Turbine RCS:** A measure of the radar reflectivity of the complete turbine structure.

**Turbine Visibility:** The amount of the turbine visible over terrain, considering RLOS only. In general, a large positive value is a strong indicator that the turbine will be detected. A Level 3 assessment is generally requested in the report where this value is zero and detection is still indicated.

**Max height for no visibility:** A sample cut-off height below which all of the turbine would be obscured by terrain. Note that this figure will vary between turbines with different ground heights in the same proposal.

**Visibility over clutter:** The amount of the turbine which is un-obscured from the radar by building clutter and terrain (where this is the same as the Turbine Visibility, no clutter exists in the beam path). Where this value is zero or very small, the turbine is completely obscured by clutter and the detection probability will be greatly reduced. Note that clutter is represented by average values for a type in an area (forest, sub-urban, urban, etc) and not to the individual building level.

## **1 Scope**

1.1 The purpose of this report is to ascertain the likely effects of the proposed wind turbines at Fallago Rig Extension on the performance of Radar Systems at MoD-related sites.

## **2 Introduction**

2.1 Reference A is a proposal to establish a wind farm of 17 turbines at Fallago Rig Extension, Scottish Borders. National Grid References were provided for all positions (NT (3)60089 (6)60109). The highest point of the turbine blades will be 126.5 metres above ground level. A local map of the proposed area is shown at Figure 1.

2.2 Siting restrictions for radars are defined in Reference B. Reference C details methods of determining Radar Cross-Section (RCS) values from a generic turbine model. Reference D defines specific restrictions for siting wind turbines, which apply when there is Line of Sight (RLoS) between radar and turbine. References E, F and G define additional restrictions applicable only to Air Defence (AD) radars.

## **3 Effects of Wind Turbines on Radar Performance**

3.1 It has been shown that where RLoS exists and/or Radar Field Strength detection occurs, the wind turbines will appear as genuine aircraft targets. This effect has been shown to mask aircraft responses, even when the aircraft is in a high elevation beam and the turbine is in a lower sidelobe. The radar may also be desensitised by its clutter processing within the sector containing wind turbines.

3.2 Additionally, shadowing of aircraft at similar radar to target elevation angles at the wind turbines may occur, degrading radar performance. However, this is only expected to occur over short distances from wind turbines.

3.3 In close proximity, turbines can cause spurious reflections of returns. This is particularly a problem for Secondary Surveillance Radars.

## **4 Assessment of the Proposed Wind Farm**

### **4.1 ASACS Brizlee Wood AD Radar Field Strength Coverage summary:**

4.1.1 Range to Windfarm: 71.6km  
Angle to Windfarm: 310.2°

RLOS Visibility 126m  
Turbine RCS: 370.2m<sup>2</sup>

4.1.2 A Field Strength Coverage plot was generated for the radar using these parameters (Figure 2), indicating that all of the turbines will be detected by the radar.

4.1.3 All other radars at this site have been checked.

### **4.2 There are no concerns regarding the following radars, which have been checked:**

4.2.1 RAF Benbecula, Buchan, Leuchars, Spadeadam (Berry Hill & Deadwater Fell), Staxton Wold and Trimmingham

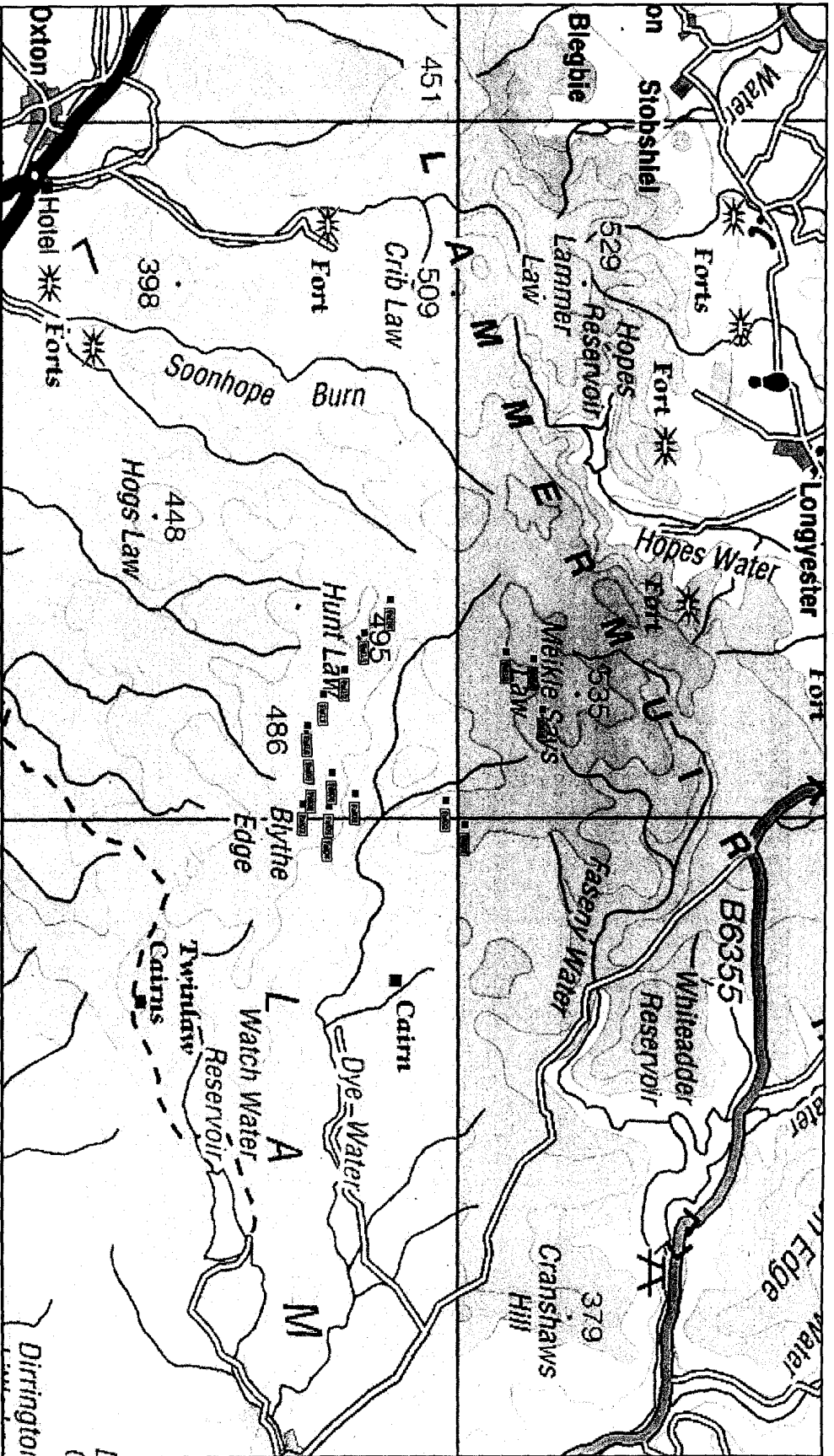
4.2.2 MAA Warton

4.2.3 NATS Great Dun Fell

4.3 The proposed wind farm is beyond the protected range and/or outside the protective arcs of all other radars.

## **5 Conclusion and Recommendations**

It is recommended that the Operations Staff check whether the proposed wind farm at Fallago Rig Extension is in an area of vital air traffic operations controlled by the radar at ASACS Brizlee Wood. If so a decision to object to the proposal should be considered on the grounds referred to in paragraph 3.1 and paragraph 3.2.



Local area map for DIO 20966(A) Fallago Rig Extension windfarm (NT (3)60089 (6)60109)

Figure 1

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DIO 20966(A) coverage estimate plot for Brizlee Wood AD Radar (126.5m, 370.2m<sup>2</sup> RCS)

Figure 2



**1Gp Headquarters  
WO Battlespace Management Capability  
Safeguarding**

Defence Infrastructure Organisation - Safeguarding  
Kingston Road  
Sutton Coldfield  
West Midlands  
B75 7R1  
Tel:  
DF1  
Email: /

See Distribution

Reference: 20150205 Windfarm-Planning  
Applications-DIO20966(a) no\_objections-O

Date: 05 Feb 2015

**FALLAGO RIG EXTENSION (DIO20966(A)) WIND FARM DEVELOPMENT PROPOSAL - NO  
OBJECTIONS**

1. DIO requested that HQ 1 GP BM Safeguarding review the proposal to erect 17 x 126.5m turbine wind farm at Fallago Rig Extension. Following a detailed examination of the proposal, the impact of the proposed development on ATC radars and the ATC usage of Airspace in the region it was found that there was no radar Line-of-Sight and no impact on RAF ATC operations.
2. HQ 1 GP BM Safeguarding do not have objections with the Fallago Rig Extension proposal (DIO20966(A)) as it is assessed that there will be no effect on ATC operations or radar performance. This level of concern is held on the basis that there will be no additional turbines or a change in turbine height without a separate planning request, any change to this proposal could result in objections being raised.

WO  
for AOC 1 Group

Distribution:

DIO Sutton Coldfield

---

**From:**  
**Sent:** 05 February 2015 11:32  
**To:**  
**Cc:**  
**Subject:** 20150203 - AD Obj DIO20966(A) - Fallago Rig Extension Re-sending with correct file extension VURG Wind Farm

1 Gp object to this proposal due to the unacceptable impact upon the Brizlee Wood AD radar. I understand that the developer has proposed mitigation and this is currently under consideration by 1 Gp.

Regards

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**From:** DES ADATS-Task Management-Windfarms (MULTIUSER)  
**Sent:** 05 February 2015 11:07  
**To:**  
**Cap S**  
**St**  
**Fan**

SE  
e-mail: DESADATS-Task Management-Windfarms (MULTIUSER)  
T

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**From:**  
**Sent:** 05 February 2015 11:00  
**To:** DE  
**Subject:** FW: 20150203 - DIO20966(A) - Fallago Rig Extension - VURG

Wind farm is Concerns but re-sent as was wrong file extension on report.

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**From:**  
**Sent:** 03 February 2015 10:40  
**To:** DES ADATS-Task Management-Windfarms (MULTIUSER)  
**Subject:** 20150203 - DIO20966(A) - Fallago Rig Extension - VURG

Good morning,

24/02/2015

Please find details attached. This is a Section 36 application at a height of 126.5m. Response by 06.02.01 please. Apologies for the short timescales!

Many thanks

Assistant Safeguarding Officer - Infrastructure Professional Services – Safeguarding  
DIO Operations Development and Coherence  
**Defence**  
**Infrastructure**  
**Organisation**  
Kingston Road, Sutton Coldfield, West Midlands, B75 7RL

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MOD telephone: | Telephone: | Fa | Email: DIOODC-  
| Website: www.gov.uk/mod-safeguarding

PLEASE NOTE MY NEW EMAIL ADDRESS. EMAILS TO MY OLD EXTERNAL EMAIL ADDRESS SHOULD BE FORWARDED AUTOMATICALLY.



**Defence Infrastructure Organisation**



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**From:**  
**Sent:** 11 February 2015 15:13  
**To:**  
**Subject:** 20150211 - Response emailed to Scot Govt Section 36 Fallago Rig Wind Farm Extension  
**Attachments:** 20150211- Obj to Scot Govt.pdf  
FAC


Please find attached the MOD response to the above consultation.

Kind regards

Assistant Safeguarding Officer - Infrastructure Professional Services – Safeguarding  
DIO Operations Development and Coherence  
**Defence**  
**Infrastructure**  
**Organisation**  
Kingston Road, Sutton Coldfield, West Midlands, B75 7RL

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IPSSG2a1@mod.uk | Website: www.gov.uk/mod-safeguarding  
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BE FORWARDED AUTOMATICALLY.

 **Defence Infrastructure Organisation**

24/02/2015



**Defence  
Infrastructure  
Organisation**

Assistant Safeguarding Officer  
Ministry of Defence  
Safeguarding – Wind Energy  
Kingston Road  
Sutton Coldfield  
West Midlands B75 7RL  
United Kingdom

Your Reference: Section 36 Fallago Rig

Telephone [MOD]:

Our Reference: DIO20966

Facsimile [MOD]:

E-mail:

The Scottish Government

11<sup>th</sup> February 2015

Dear

**Please quote in any correspondence: DIO20966**

**Proposal: Scoping Opinion for Section 36 Application for the proposed Fallago Rig wind Farm Extension (Fallago Rig 2)**

Thank you for consulting the Ministry of Defence (MOD) about the above planning application in your communication dated 21<sup>st</sup> January 2015.

I am writing to inform you that the MOD objects to the proposal. Our assessment has been carried out on the basis that there will be 17 turbines, a maximum of 126.5 metres in height from ground level to blade tip and located at the grid references below as provided by the developer. The MOD is aware that these grid references are subject to change:

<b>Turbine</b>	<b>100km Square letter</b>	<b>Easting</b>	<b>Northing</b>
1	NT	60089	60109
2	NT	59755	59809
3	NT	59640	58405
4	NT	60187	57971
5	NT	59831	57999
6	NT	59354	58049
7	NT	59808	57610
8	NT	59464	57731
9	NT	59051	57702
10	NT	58668	57683
11	NT	58219	57919
12	NT	57884	58238
13	NT	57347	58552
14	NT	56871	58960
15	NT	57629	60762
16	NT	57735	61166
17	NT	58449	61331

### **Air Defence (AD) radar**

The turbines will be 70.2km - 74.1km from, detectable by, and will cause unacceptable interference to the AD radar at Brizlee Wood.

Trials carried out in 2005 concluded that wind turbines can have detrimental effects on the operation of radar which include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns. The probability of the radar detecting aircraft flying over or in the vicinity of the turbines would be reduced, and the RAF would be unable to provide a full air surveillance service in the area of the proposed wind farm.

The applicant has submitted a mitigation proposal with the view of addressing the impact of the proposed development on the radar. This proposal is currently being assessed. However, until such time as the turbine layout is finalised and mitigation specific to that layout has been assessed, the MOD will not be in a position to confirm whether or not the mitigation will be acceptable.

If the developer is able to overcome the issues stated above, the MOD will request that the perimeter turbines are fitted with 25 candela omni-directional red lighting or infrared lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration at the highest practicable point.

MOD Safeguarding wishes to be consulted and notified about the progress of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

I hope this adequately explains our position on the matter. Further information about the effects of wind turbines on MOD interests can be obtained from the following website:

**MOD:** <https://www.gov.uk/government/publications/wind-farms-ministry-of-defence-safeguarding>

Yours sincerely

Assistant Safeguarding Officer – Wind Energy  
Defence Infrastructure Organisation

**SAFEGUARDING SOLUTIONS TO DEFENCE NEEDS**