From:	NectonSubstationAction Messenger
To:	NorfolkVanguard@pins.gsi.gov.uk
Subject:	Significant noise and other issues
Date:	23 March 2019 13:03:49
Attachments:	Cumulative map.png

Dear Planning Inspector
Ms Falch-Lovesey recently told residents that the noise from Vanguard (to be doubled by Boreas) would be kept down because they would put the transformers inside buildings.
The National Grid would seem to disagree. (See link below)

"The converter **transformers are outdoors** and **can generate significant levels of audible noise**."

Also, HVDC has been 'sold' to the county as being the best result environmentally (apart from at Necton of course), but again the NG has this to say in the same document.

"**This (HVDC) causes a significant environmental impact in construction and reinstatement and results in 'land sterilisation', as the cable corridor cannot be used for construction or certain types of agriculture."**
and
"(HVDC systems have a tendency to attract pollution/particulates)."
and
"AC transmission has an expected lifetime of approximately 60–80 years...HVDC systems have a shorter life expectancy of 40 years, and large parts of the converter stations (valves and control systems) are likely to need replacing after 20 years."

https://www.nationalgrid.com/sites/default/files/documents/13784-High%20Voltage%20Direct%20Current%20Electricity%20%E2%80%93%20technical%20information.pdf

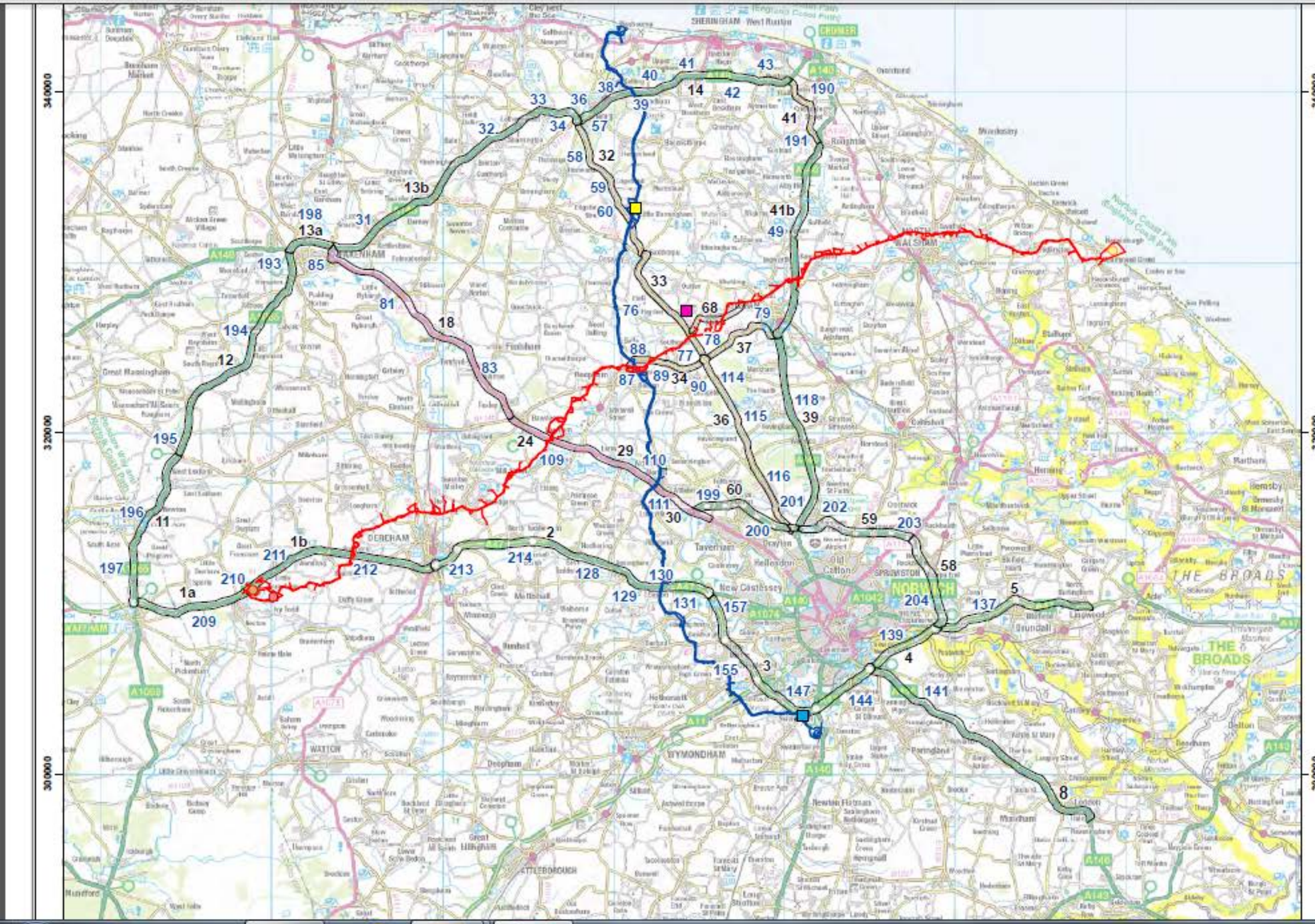
> High Voltage Direct Current Electricity – technical information
>
> XLPE insulation is made by extruding the polymer over the cable core, and is the technology now generally used for AC transmission cables. XLPE cables are
>
> www.nationalgrid.com

Please also find attached a map recently sent to PC's by Vattenfall. This map clearly shows the developers and the NG not using common sense when requesting/allocating connection points. It makes the point that these projects really should be considered cumulatively. Better still, connection points for both Orsted and Vattenfall should be re-assessed, and an offshore ring main used, such as the ones mentioned in the same NG document above, between Great Britain and Ireland.

Thank you for your attention.
NSAG

Vattenfall ExA; ISH1; 10.D5.3 Cumulative Traffic CIA.pdf - Adobe Reader

File Edit View Window Help



Legend:

- Norfolk Vanguard onshore red line boundary
- Landfall zone location
- Onshore project substation location
- National Grid substation extension location

Hornsea Project Three

- Onshore cable route
- Main construction compound
- Booster station
- Hornsea Project Three onshore substation
- Cumulative Impact Assessment study area

Project:	Report:
Norfolk Vanguard	Norfolk Vanguard Traffic CIA

Title:

Highways links jointly used by Norfolk Vanguard and Hornsea Project Three

Figure: 2 Drawing No: PB4476-008-006-009

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	13/03/2019	LB	RE	A3	1:250,000

Co-ordinate system: British National Grid EPSG: 27700

08:11
22/03/2019

From:	NectonSubstationAction Messenger
To:	NorfolkVanguard@pins.gsi.gov.uk
Subject:	Issue Specific Hearing 6, Open Floor Hearing 3, Specific Hearing 7 - Notice to Attend
Date:	27 March 2019 20:05:44

Dear Planning Inspectorate

We would like to attend all 3 of these Hearings.

This first part of our representation for these meetings is as follows:

Who will see the new National Grid extensions and the new substations?

1. In an attempt to answer this question, on 26th March 2019 we floated a 2m diameter red helium balloon in close proximity to the proposed Vanguard site.
2. The balloon could not be placed precisely within the chosen site as that is private land, but was placed as close as possible, on the boundary between Necton Farm and Top Farm, and close enough to serve its purpose, which was to let residents see if they were likely to have a view of the new substation.
3. The location of the balloon (on the edge of Top Farm) was on lower ground than the proposed site of the Vanguard substation, and this was taken into account when measuring the length of the anchor rope, which was adjusted to ensure that the top of the balloon would be the same height as the applicant's substation structures would be when placed on their preferred higher land.
4. The height of the balloon represented the highest substation structures, thus included the lightning conductors which are, according to the applicant, attached to **every** structure. These might be spindly compared to a solid building, but will be annoying especially in sunny conditions as they will shine and glint in the light as the existing Dudgeon and National Grid substations already do.
5. The correct length of the balloon anchor rope was calculated, checked and verified by 5 people.
6. It has been noted by many members of our group, residents and Parish Councillors that the applicant has repeatedly stated to them and in public, that 'no one will see it' (meaning the substation).
7. Members of Holme Hale Parish Council, Little Dunham Parish Council, Bradenham Parish Council, Necton Parish Council and Little Fransham Parish Council, can all be asked to independently verify that they were able to see the red balloon from many various sites around the area, (outside of Necton) such as Holme Hale Road, Bradenham Hall Farm, Top Farm, Corbett's Lodge Farm, Redgates Farm and the A47.
8. Residents of Necton can give evidence that they could see the red balloon from different areas of Necton and Ivy Todd. These residents saw the balloon from their particular ground level.
9. It may be that the applicant will question the placement and height of the balloon. If this is the case we invite them to place their own 2m balloon 25m above the ground on the proposed site, (or perhaps one at each corner of it) and we will be happy to accept the visuals from this, so long as the height of the balloon can be independently verified by an independent person). It should be noted that we did

request this of the applicant before but were refused, which is why we took it into our own hands to carry out this simple but effective experiment.

10. The Inspectorate will recall that Top Farm was the suggested alternative location site which was proposed to the applicant by Necton Parish Council and residents of Necton, and also the owners of Top Farm. The reason given for refusing it by the applicant was that there was no low-lying ground on the farm. The topography of Top Farm varies greatly, and from the house area it slopes down rapidly towards a stream and several areas/fields sit at a considerably lower level than where the applicant proposes to locate their substations. In fact the applicant's proposed access road passes directly through a low-lying field.

We enclose a photo.
This photo was taken close to the balloon's anchor point and clearly shows the scale of its height against Necton Wood Trees.
PLEASE NOTE: As can be seen by the angle of the anchor rope - at the moment of this photo being taken the wind was actually pushing the balloon to a much lower height than it would have been at full stretch. Yet it is still well above the nearby mature trees.
It appears obvious that the Vanguard substation (and later Boreas) will be seen from all of the surrounding areas, particularly in Necton and Ivy Todd, but also
the surrounding villages.

We can provide more photos from other locations if required.

The main point of this experiment is that it demonstrates that the Necton connection to the National Grid is not really suitable or acceptable, is far too big to sit comfortably in the surroundings, and that an Offshore Ring Main should be considered for all future offshore wind farms including Vanguard.

We also want to make representation about the National Grid extensions.

Rob Driver (applicant) has confirmed that by extending the NG substation for Vanguard (the bigger extension) and Boreas (the smaller extension) by 18 acres they will be in effect enlarging the existing structures (both NG and Dudgeon together, which cover 16 acres) by **over double their** current size.

The Dudgeon and NG substations are already a terrible blight seen from several miles away. But expanding this to over double (not including the new Vanguard's and Boreas' own substations) will be more than doubling the existing eyesore. And yet, we have still seen no simulations of the NG extensions, just little boxes on a graphic. Added to this, we will also have another 1 to 2 pylons at 150 feet high each approximately. The NG openly admit that they do not, and have no intention of ever following their own company policy with regard to materials and colours, (Horlock Rules) so these new structures will no doubt be largely silver, a reflective colour that flashes in the sunshine.

From:	NectonSubstationAction Messenger
To:	NorfolkVanguard@pins.gsi.gov.uk
Subject:	Issue Specific and Open Floor Hearings April 24th
Date:	28 March 2019 14:12:58
Attachments:	Substations are inherently extremely dangerous places.pdf

Dear Planning Inspectorate
This is our second representation for the meetings on 24th April.

Substations are inherently extremely dangerous places. And yet police are finding that thieves are targeting them as they are a great source of metal.
No-one should ever enter a substation without being accompanied by the appropriately qualified staff. And yet people do, children do, if they can.
For this reason something like the Vanguard Substation, which will eventually be the biggest in the world, should be placed on an industrial brown site, and not close to several communities.
It would seem inappropriate in the extreme to literally squeeze the biggest onshore substation in the world into the bounds of the communities, surrounded also by the very real risk of fire from the surrounding agricultural fields. Vattenfall were steered towards Necton by being offered the connection point by National Grid.
When asked if they gave any consideration to what surrounded the area, or how the project might fit in, National Grid's answer was that they do not. Not any consideration at all. This was down, they said, to the applicant.
It is a fact that the Planning Inspectorate are not meant to look for information, but can only make decisions by using the information they are given, by the applicant with their unlimited funds and legal advisors, and by a public, who are untrained, unsupported and overwhelmed by a technical miasma, both from the project and of the process itself.
So, we are going to attempt to bring information to the Planning Inspector, to make sure they understand the very dangerous installations we are asked to accept by the applicant.
The general public may think that one has to touch an electrical conductor to get hurt. This, however, is not true when dealing with high voltages. Substations use a high-voltage, open-air conductor—called "bus"—which resembles a three-inch conduit pipe. The metal pipes running through the overhead areas of a substation are the conductors and electricity. There are no wires inside the pipe. The electricity is carried on the pipe's outside skin.
Just knowing what an electrical conductor looks like will not keep you safe in a substation. Because of the high voltages involved, you need not touch an electrical conductor to be harmed. **If you get close enough, the electricity will reach out and touch you in the form of a high-temperature electrical arc.** The potential for an electrical arc becomes greater as voltage increases.
Even raising ladders *outside* the substation may not be safe. If you are considering raising aerial ladders or tower ladder buckets (or farm equipment?) outside of a substation, you must still maintain the safe clearance horizontally from the substation's exterior fence line. High-voltage electrical equipment may be just inside a fence or a wall. Placing a ladder against or an aerial platform near or over that fence or wall can violate the safe standoff distance, putting the operator in danger of electrocution. There is of course a lot of security and fencing in substations to keep people out, and yet they do get in. These modern substations are unmanned, and this means any failure in security could result in a breach.
Dielectric fluid, a mineral oil, is used to cool and insulate underground transmission feeders. This nonpolychlorinated biphenyl (PCB) oil resembles cooking oil and has a flash point of 350°F and an autoignition temperature of 795°F. *Note that electrical arcs can produce temperatures up to 7,000°F to 10,000°F and can easily ignite oils.*
Transformer oil is the generic name given to the oil used to insulate and cool transformers. Its flash point is approximately 300°F. Historically, this is where PCBs have been found.
Edisol XT is a viscous insulating oil used in capacitor banks. It is nonPCB oil and has a flash point of 284°F. Material safety data sheet (MSDS) information indicates that dermal exposure results in skin irritation, consistent with most petroleum exposures. *Note that older capacitor cans may contain PCBs.*

Sulfuric acid is contained in the lead/acid batteries used in the backup power source for the facility. Substations typically have two battery rooms, each containing 30 to 40 car-type batteries. Each battery holds five to 10 gallons of acid with a 30- to 40-percent concentration. Exposure to sulfuric acid under normal conditions presents a dermal hazard, but more significant issues arise when the product is exposed to heat. Sulfuric acid mist can produce serious, if not fatal, injuries to responders who fail to protect against respiratory exposure.
Sulfur hexafluoride gas is used to insulate and extinguish arcs in circuit breakers and other electrical components. Under normal conditions, it is an odorless and colorless gas that is five times heavier than air and presents an asphyxiation hazard in below-grade confined spaces. If exposed to high heat, thermal decomposition of the product produces two hazardous by-products, hydrogen fluoride gas and metal fluorides.
Hydrogen fluoride gas *(HF)* gives off a rotten egg smell and is a desensitizer. Continued exposure to it may make it seem as if it has dissipated. It is also a respiratory hazard that when mixed with water, say, in your lungs, produces hydrofluoric acid.
Metal fluoride, a white talcum powder-like substance, is a dermal hazard, and exposure to it produces a sunburn-type effect on the skin. In addition, the ions in fluoride are calcium scavengers; they will eat through the skin and aggressively attack the bones. It also leaches calcium from your system and can trigger a heart attack. The key to successful treatment is early recognition of the symptoms of exposure and obtaining medical attention in a timely manner. MSDS information recommends flushing with copious amounts of water and using calcium gluconate, a gel that impedes the effects of the process.
Because of the hazardous environment found in substations, firefighters must resist their natural tendency toward aggressive tactics. These incidents require specialised knowledge, close control of operating personnel, and a heightened sense of caution. The first responding officers must closely supervise their firefighters to ensure their safety. All firefighters operating at the scene must be aware of the potential dangers and act to safeguard themselves from those dangers. When you respond to incidents at these sites, your utility should provide you with a representative with the specialized knowledge that will enable you to safely operate at a substation incident.

Q 1: Would the applicant like to inform us which of these terribly dangerous elements will be used in Vanguard? What will be the procedure if any substances leak? How will residents be protected? Substations are a highly volatile installation and to leave one unmanned centrally placed within several communities, would strike one as absolute folly.

Q 2: Would any of the applicants live close to their own substation? If not, why not?

Firefighters must protect exposures outside of the substation, but do not direct water into the substation without first consulting with the utility representative. If a substation fire is **exposing residential neighbours,** set up lines or large-calibre streams for exposure protection. It is safe to put water on the threatened exposures. Literally thousands of residents could be killed if this biggest substation in the world caught fire, by windblown pollutants, smoke and the fire itself.

Q 3: How will the applicant stop windblown fire risk to residents, as there will be residents on each and every side, so no matter which direction the wind is in fire can rapidly spread. If a choice is available, what will be the priority, saving the substation and maybe preventing further spread, or saving residents?

FACT: Substations Catch fire regularly.
Where there are high concentrations of energy, heightened risks are inevitable. Malfunctions in substations can occur for a number of reasons, such as power

surge, component failure, thunderstorms, damage caused by a rodent, or malicious attack. Any kind of damage or fault inside a substation can lead to sparks or an increase in temperature that can easily ignite a fire. And because of the high levels of energy, once fire takes hold in a substation, it has the potential to cause a huge amount of damage, even travelling along cables and causing secondary fires at nearby substations.

Q 4: Neighbouring residential and commercial properties are under threat if the fire cannot be contained, and smoke can cause breathing difficulties across a wide area, especially for those with existing respiratory conditions. Can the applicant assure us that Vanguard will never catch fire, or that residents will never be out in danger either from fire or smoke inhalation?

General Safety Practices – which give more insight into what hazardous installations substations are

Following are some other general safety procedures that should be observed in substations:

• Mobile equipment – such as aerial bucket trucks, digging equipment and cranes – shall be grounded to the substation ground grid in accordance with established rules and regulations.

• Only trained, authorised personnel are allowed to work inside or near capacitor banks, reactors and other fenced-in areas inside a substation. Some people may not be aware that these metal structures may be energized.

• Remember to guard against the hazards of live or induced voltage. If the need arises, ensure equipment is switched out, tagged out, tested for voltage and grounded.

• Exercise caution around control house equipment; some of it is very sensitive to vibration.

• Observe hazard warnings regarding battery systems in the substation.

• As a general rule, it is not a good idea to store any equipment or material in a substation. An untrained employee sent to retrieve the material could get hurt. Additionally, if equipment in the substation blows up, it may also damage stored equipment.

Securing Perimeter Area

Minimising safety threats from the outside environment is a key concern that needs attention. Installing metallic or non-metallic fences along the perimeter is to prevent incidents of trespassing, deliberate scaling, stray animals foraying into the premises, and more importantly, children gaining entry into the area.

Q 5: Could the applicant tell us how they will they stop birds and other flying creatures, and of course drones from entering?

Washouts and structural damage to enclosures require prompt attention. Use of appropriate warning signs on the fencing is recommended.

Restricting or Prohibiting Visitor Access

Substations are not intended to support visitor traffic. It is possible to prevent or reduce the possibility of accidents by either restricting or totally prohibiting visitors from entering the place. In unavoidable circumstances, visitors accompanied by experienced personnel can be allowed access, but with the necessary safety precautions and PPE.

Monitoring/ Guiding Vehicular Traffic

It is important to monitor and guide vehicles entering a substation to ensure that there is sufficient clearance between objects on the roof of the vehicle and the

overhead lines and elevated equipment within the substation. Vehicle drivers must proactively ensure safe navigation as well.
Similarly, the operations of mobile hoisting equipment and cranes also need to be supervised and controlled by substation personnel.

Prohibiting Equipment Storage

Substations also tend to double up as storage for equipment and other material that find use in the environment, leading to at least a couple of unwarranted risks. It not only increases footfall in the area as materials get shifted in and out of the facility, but also lures thieves on the lookout for expensive electrical components/ equipment. Not everyone entering the substation in such cases are fully aware of the dangers they are exposed to and accidents that they can accidentally trigger. Prohibiting equipment storage in substations can prevent undue accidents.

Securing Battery Stores

Battery storage rooms are also known to be the sources of chemical hazards, and are best secured with authorised access. While it is important to ensure the storage areas are well-ventilated, regular maintenance helps detect units that need replacements, recharging or address gas, caustic or acid leaks common in batteries.

Providing PPEs

Use of **PPEs** is mandatory when working in a substation. **Flame retardant/ arc-rated/ chemical resistant clothing**, **gloves**, **safety glasses**, **shields**, **face masks**, **hard hats**, and steel-toed shoes must be an integral part of the PPE collection made available for workers.
The infrastructure on the other hand must house gas detectors, scaffoldings, and rescue equipment to assure the safety of the occupants.

Training Personnel

Training is one of the most important safety practices, without which all other safety measures remain ineffective. Safety training must ensure that substation personnel:

Installing Security Equipment

Despite the best of precautions and practices, there is always a possibility of security breach. Installing security equipment such as cameras and motion sensors in vantage points not only help deter or thwart unauthorised access and break-ins, but also track the movement of personnel and equipment to ensure safe operations and maintenance.
Substations are dangerous to the public if security is compromised and trespassers gain access, to cause vandalism or attempt theft. Thieves breaking into substations, ignoring the safeguards and warning signs, have been killed or otherwise very seriously injured. They have also left substations in an unsecured state which can allow access to inquisitive children.

There is also the real risk of harm to children who may easily gain access to an unsecured substation containing damaged and unsafe equipment after the theft. In some cases, groups of houses as well as appliances contained within have been subject to fire damage as a result of network theft incidents.

These substation fires are just a few of those in the UK in just 2018 – Please bear in mind most of these were in small substations, and nothing like the catastrophe that could happen if the biggest offshore wind, onshore substation in the world caught fire, especially when it is surrounded by communities.
January 2018

Several homes and businesses are without power in Aylesbury this lunchtime because of a fire at an electricity substation.
January 2018
A fire has torn through an electrical substation at the Ryeford Industrial estate in Stonehouse.
Feb 2018
Power has been restored to thousands of homes after a fire at an electrical substation that left a man in hospital. About 5,000 homes in Worcestershire were left without power on Friday due to the blaze in Worcester Road, Upton Warren, which started at 13:00 GMT. Power has since been restored to the homes, mostly in Upton Warren and Wychbold. It is not yet known what caused the blaze but fire chiefs are investigating. The injured man remains in hospital.
March 2018
An explosion which sent a stream of flames into the air in Saltburn, North Yorkshire left 22,000 homes without power.
March 2018
Fire engulfed a substation at Market Harborough. A spokeswoman for Western Power Distribution added: 'We still can't get near it, and from experience it can be quite difficult to tell what happened.'
June 2018
Firefighters were called to an electrical substation in Aberdeen after a blaze broke out.
July 2018
A section of Friar Street, Reading had to be cordoned off while emergency crews dealt with a fire in an electricity substation.
July 2018
The Brigade was called at 1957 and the fire was under control at 2123. Fire crews from Finchley, Barnet, Southgate and Mill Hill fire stations attended the scene. The cause of the fire was accidental and is believed to have been caused by an electrical fault within the substation.
October 2018
QUEEN Alexandra Hospital in Portsmouth said it briefly lost power this afternoon after a fire at a substation.
October 2018
Fire crews are at the scene of a fire at an electrical substation in North Devon. Local residents in the village of Pyworthy near Holsworthy have been asked to keep their doors and windows closed following the incident.
December 2018
Substation fire in Braintree
December 2018
Fire at an electrical substation – Ashford Kent. Due to smoke residents were advised to keep doors and windows closed.

House devaluation

Vattenfall have denied that their substations will affect property prices. However, Sally Sims and Peter Dent of Oxford Brookes University in 2005 published a study that showed that the close presence of a substation could reduce the number of potential buyers by up to 63%, depending on the type of property concerned and the size and visibility of the substation. The study in reported that visible substations and cables reduce the value of a property; the percentage reduction depended on the type of property.

Q 6: We trust this will not be considered a vexatious question as it is intended to be very serious, and only requires a simple honest answer, which is extremely relevant to us. If offered two similar properties, one with a substation of the capacity of theirs close by and one without, which one would the applicants buy?

These are the sources used.

https://www.fireengineering.com/articles/print/volume-163/issue-11/features/electric-substations-hazards-and-response.html
https://incident-prevention.com/ip-articles/safety-awareness-for-substations
https://www.substation-safety.com/safety-practices-substations/
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https://www.leicestermercury.co.uk/news/local-news/live-smoke-over-market-harborough-1375032
https://www.newsflare.com/topic/substation-fire
https://www.eveningexpress.co.uk/fp/news/local/fire-crews-called-to-substation-blaze/
https://www.stroudnewsandjournal.co.uk/news/15890899.power-cuts-as-blast-starts-fire-in-substation/

From: NectonSubstationAction Messenger
To: NorfolkVanguard@pins.gsi.gov.uk
Subject: Further questions for the applicant for deadline 6
Date: 30 March 2019 08:33:23

Vanguard is not environmentally an sound project when the cost to the environment in providing the steel, concrete, copper, aluminium, composites, teflon, plastics, rare earth, vehicles, fossil fuels, maintenance etc, used to construct the project is taken into consideration.
Q 1. Can the applicant please address the environmental impact of producing any of the individual elements required for their project?

There is potential for the Norfolk environment to be irreparably damaged by the current plans proposed. We suggest that an Off- Shore Ring Main (ORM) should be considered very seriously as an alternative. It is the opinion of many that this option needs to be investigated transparently before any further wind farm developments are approved and before any lasting damage to the on-shore environment is allowed. The costs for building the ORM could be recovered by a connection levy on the developer, at a saving to the on-shore development costs. The savings of a collective solution for connection points to the grid, rather than each developer having to design and construct lengthy individual transmission systems, is obvious, and the saving to the on-shore environmental impact absolute.
Q 2. Can the applicant please give their opinion on whether they would welcome an ORM option?

NTS Para. 11 - "*Moreover, the project would have a direct positive impact by providing the equivalent of 2% of the UK's energy demand, or 25% of the East of England's electricity demand (domestic, commercial and industrial).*"
These figures could only ever be true at 100% output capacity 100% of the time of 1.8 GW, which is not going to happen as the wind is variable by nature.
Q 3. Can the developer please give the true output of these projects, taking into account the load factor? Isn't it likely that the windfarms will only produce a maximum of 50% of that suggested?

NTS Para 12 – *"Recent information in the national press in September 2017 has already shown that offshore wind represents a cheaper source of energy than nuclear in the UK."*
Off-shore wind only appears to be cheaper due to the subsidies the developers receive through the Contracts for Difference (CFD) process. The UK Tax Payer is not told that it is they who subsidise the payments to profit foreign companies. The applicant should concentrate and report on the 'Environmental Impact' of the project, in their 'environmental report' and not on highly politicised issues or quoting false news from the popular press, which is often by its nature, inaccurate.
Q 4. Can the applicant please confirm that they will be applying for CFDs?

Lack of forward planning and Investment in NETS infrastructure by the profligate NG plc is

the issue. Without a national plan for the uptake of renewable energy from off-shore to on-shore, rural Norfolk will be overrun with transmission cables and substations, and the impact of pursuing the current plans just for profits, will have a serious detrimental environmental impact.
Q 5. Does the applicant agree with this statement?

Was Boreas proposed to level the costs and make the project appear more cost effective, and therefore attractive than it is? For example, if the first half of a project cost 5 million pounds, and was not cost effective at this price, then by adding a second one which could share a minimal amount of infrastructure (probably cable trenches) and would therefore perhaps cost less, say 3 million pounds, one could level costs out to an attractive level. The two projects, when bundled together would total 8 million pounds, and it could then be said that each project cost 4 million pounds, and so would both be cost effective.
Q 6. Was Boreas proposed to level the costs and make the project appear more cost effective, and therefore attractive than it is?
Q 7. Can either project on its own be a viable proposition or do the economics mean that either one can only be built as one of a pair?

NSAG

From:	NectonSubstationAction Messenger
To:	NorfolkVanguard@pins.gsi.gov.uk
Subject:	Turbine Sediment/offshore damage under the sea.
Date:	02 April 2019 08:47:36

We would like to draw the applicant's attention to the the following information, which they do not seem to be aware of.
https://earthobservatory.nasa.gov/images/89063/offshore-wind-farms-make-wakes

We sent this information to The Whale and Dolphin Conservation Society, and their reply can be seen below. We would like to ask the applicant these questions.

1. Do you know about this research?
2. Are you intending to find more information on whether your turbines are going to damage fisheries and/or porpoises and dolphins and their prey?
3. Are you going to take this into consideration?

"Thank you very much for your email and interest in WDC.
I forwarded your query to our expert and she has replied:
Thank you for your question on sediment flow around offshore wind farms, and the impacts on marine mammals. Although offshore wind farms have been in development for many years, there has only been dedicated research into their impacts on marine life in the last c. 10 years. So far studies have concentrated on the construction phase in particular as the noise generated during construction can cause physical harm to harbour porpoises, and other whales and dolphins.
There has been very little research into the operating phase of these windfarms to date, as a result the impacts of the sediment plumes, as shown in the link you sent, are relatively unknown. This is not an uncommon sight at any offshore construction, how much sediment is stirred up depends on many factors including the sea bed material, sea state, the strength and direction of the tides and currents. It is thought that sediment can impair the ability of porpoises and dolphins to forage, affect their prey species, it may also affect their ability to navigate. At the moment these are unknowns, and WDC is lobbying developers and the government to extend the monitoring of impacts of these developments through the lifetime of the development and through all phases (construction, operation and decommissioning). Only through these studies can we understand the full impacts of these developments, and then inform future developments so they have a little impact on the marine environment as possible.
I hope this is of some help
Kind regards,
Jane
Jane Wheeler
Education and Supporter Relations assistant"

NSAG