



Staffordshire
Fire and Rescue Service
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Our Ref: 5416/502828/D0104116

Your Ref: 24/38719/FUL

Date: 11 March 2025

Planning
Staffordshire Moorlands Council
Moorlands House,
Stockwell St,
Leek ST13 6HQ

Please reply to:

Central Building Regulations Team
Staffordshire Fire & Rescue Service HQ
Pirehill Lane
ST15 0BS

Direct Line:

E-mail: Switchboard:

Dear Sir/Madam

TOWN AND COUNTRY PLANNING ACT 1990
FIRE AND RESCUE SERVICES ACT 2004

Greenfields , Thorney Edge Road , Bagnall , Staffordshire , ST9 9LA

Planning Application Number SMD/2024/0423

Proposal Battery Energy Storage System and substation with associated infrastructure and works

I refer to the above planning application and the proposed development at the above address.

Whilst Staffordshire Fire and Rescue Service would not object in principle to the lawful development of a Battery Energy Storage System (BESS) or other alternative energy site it is recognised that these installations pose some specific hazards in the event of fire.

Guidance has been widely available from the National Fire Chiefs Council for some time and SFRS recommend that any BESS site should abide by this guidance. The information provided to SFRS at this juncture is insufficient to ascertain whether this development would comply with the aforementioned guidance. Please consider the feedback given in the checklist enclosed.



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Any fire involving grid scale Li-ion battery storage would be treated as a hazardous materials incident in order that specialist technical advice can be obtained at the earliest opportunity.

We take this opportunity to make early observations and provide comments or recommendations in line with current guidance to influence the development.

Process fire risk is generally regulated by the HSE but in the absence of regulation there is an expectation that fire and rescue services will initiate an emergency response in the event of an incident, in conjunction with the site operator's own plans.

The following recommendations should be considered at the design stage and early contact with the FRS for site familiarisation and exercising of emergency plans is strongly advised. The proposed safety measures should cover the construction, operational and decommissioning phases of the project. Any development should not negatively impact on the Service's ability to respond to an incident. The Responsible Person must carry out and regularly review the Fire Risk Assessment and Risk Management Plan.

It is our recommendation that before planning permission is granted, the layout, access and provision of a suitable water supply comply as far as is reasonably practicable with the minimum requirements under B5 of Approved Document B, The Building Regulations 2010.

Please also consult the latest guidance - NFCC BESS Planning Guidance Document.

Water Supplies

Specific consideration should be given to water supply resilience for firefighting and the terrain over which fire service vehicles may have to drive to access the site. This is particularly relevant where remote sites may have limited access to fire hydrants and where multiple vehicles may be required to ensure continuous water supply.

Current guidance states the water supply should be able to provide a minimum of 1,900 l/min for at least 120 minutes. SFRS may wish to increase this requirement dependant on location and their ability to bring supplementary supplies to site in a timely fashion.

Hydrants should be subject to suitable testing and maintenance by the operator. If a suitable pressure fed water supply is not available, then an Emergency Water Supply (EWS) meeting the above standard should be incorporated into the design for example, a water storage tank which would be required to be of a pumpable volume of 228,000 litres.

Site Access

Suitable facilities for safely accessing the site should be provided. Site contingency plans must consider the impact of wind direction on access and egress from the site or BESS compound which may impose operational constraints and an inevitable delay in firefighting. Current guidance states a minimum of 2 access routes.

- The ability to access all parts of the site should be considered within the design.
- Access tracks should meet the capacity requirements of attending pumping appliances.
- The plans do not show an alternative access route for all BESS positions. This provides limited options for appliance positioning.
- The site is served by a rural road. Tree heights and visibility along the entrance route should be assessed and maintained.
- Access tracks should meet the capacity requirements of attending pumping appliances.

The provision of suitable turning space and appropriately sized footprint for hard standing to enable an effective firefighting response with multiple vehicles is essential.

Access between BESS units and spacing

The NFCC guidance recommends a minimum of 6 metres between battery containers, unless suitable design features can be introduced to reduce that spacing. Any reduction

in this separation distance should be considered and designed by a competent fire engineer.

Individual site location and design will mean that distances between BESS units and site boundaries will vary. Proposed distances should consider risk and mitigation factors. Current guidance suggests a minimum distance of 25 metres prior to any mitigation.

Site Design

Sites should be maintained in order that the risk of potential fire spread between units is reduced. This will include ensuring that combustibles are not stored adjacent to units and access is clear and maintained. Areas within 10 metres of BESS units should be cleared of combustible materials and vegetation.

Automatic suppression systems which aim to prevent thermal run-away within cells are a feature of some systems however the effectiveness of these systems is variable.

Alternative extinguishing media are not considered appropriate at this time.

Early detection of a potential fire situation is critical and fast response detection system linked to the battery management system is considered an essential component of the design. It is considered unlikely that fire service resources would be in attendance within the timeframe required to prevent a thermal run-away event once it has begun.

An Information Box should be installed at the FRS access point. This should include emergency contact information, emergency isolation points and details of the specific hazards on site.

Once thermal run-away has occurred, defensive firefighting tactics would be the preferred option to allow the cell or module involved in fire to burn out and to protect surrounding modules and infrastructure. This would be undertaken on advice and with agreement from the Environment Agency and technical support services.

The potential for contaminated fire water runoff is acknowledged as an area for further consideration, although the type and level of contamination is not easily quantifiable. Our default position is therefore one of containment where possible.



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Consideration should also be given to engaging with the Environment Agency in relation to protection of water sources or aquifers in the event of fire water runoff and any pollution control measures as may be appropriate.

Airborne smoke and products of combustion could contain toxic effluents. Liaison with other agencies to support the air monitoring and warning and informing of local residents would form an essential part of the emergency response.

Disclaimer

This response is made by Staffordshire Fire and Rescue Service in its capacity as a non-statutory consultee. We respond to planning applications where resources allow and considering where development has the possibility to affect fire risk.

These comments should be taken as general comments on fire risk only. A detailed review of any technical methodology and results has not been undertaken by SFRS.

Liability for such technical work therefore rests with organisation(s) who have undertaken the said work.

Yours faithfully

Fire Safety

Officer

