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Sent: 11 November 2024 20:07:26 UTC+00:00
To: "Planning Control" <Planning.Control@north-herts.gov.uk>
Subject: RE: Planning Consultation 24/02455/FP at Land Opposite Wymondley Grid Station And To The South Of Sperberry Hill St Ippolyts Hertfordshire

Good Evening,

Thank you for sending us the Planning Consultation for the above site.

A colleague of mine recently consulted on a BESS planning application, and made the following points. I hope these provide useful for this development;

- The developer must ensure the risk of fire is minimised, this may be by way of any, or all, of the following measures:
 - Procuring components and using construction techniques which comply with all relevant legislation.
 - Including automatic fire detection systems in the development design.
 - Including automatic fire suppression systems in the development design.
 - Various types of suppression systems are available, but the HFRS's preferred system would be a water drenching system, as fires involving Lithium-ion batteries have the potential for thermal runaway. Other systems would be less effective in preventing reignition.
 - Including redundancy in the design to provide multiple layers of protection.
 - Designing the development to contain and restrict the spread of fire through the use of fire-resistant materials, and adequate separation between elements of the BESS.
 - Developing an emergency response plan with HFRS to minimise the impact of an incident during construction, operation and decommissioning of the facility.
 - Ensuring the BESS is located away from residential areas. Prevailing wind directions should be factored into the location of the BESS to minimise the impact of a fire involving lithium-ion batteries due to the toxic fumes produced.
- The emergency response plan should include details of the hazards associated with lithium-ion batteries, isolation of electrical sources to enable firefighting activities, measures to extinguish or cool batteries involved in fire, management of toxic or flammable gases, minimise the environmental impact of an incident, containment of fire water run-off, handling, and responsibility for disposal of damaged batteries, and establishment of regular onsite training exercises.
- The emergency response plan should be maintained and regularly reviewed by the occupier and any material changes notified to HFRS. Environmental impact should include the prevention of ground contamination, water course pollution, and the release of toxic gases.
- BESS facilities should be designed to provide:
 - Adequate separation between containers. A standard minimum spacing between units of 6 metres is recommended unless suitable design features can be introduced to reduce that

spacing. If reducing distances, a clear, evidence-based case for the reduction should be shown. Separation distance is important in the mitigation of fire spread, but also provides vital access for firefighting intervention.

- Provide adequate thermal barriers between switch gear and batteries.
- Provide suitable systems to detect thermal runaway and prevent the occurrence of an explosive atmosphere.
- Install adequate ventilation or an air conditioning system to control the temperature. Ventilation is important since batteries will continue to generate flammable gas while they are hot. Also, carbon monoxide will be generated until the batteries are completely cooled through to their core.
- Install a very early warning fire detection system, such as aspirating smoke detection.
- Install carbon monoxide (CO) detection within the BESS containers.
- Install fire suppression within BESS containers. Sprinkler systems should be designed to adequately contain and extinguish a fire.

- NB The Building Regulations B5

Ensure that sufficient water is available for manual firefighting. An external fire hydrant should be located in close proximity of the BESS containers. – The water supply should be able to provide a minimum of 1,900 l/min for at least 2 hours.

Given the potential need for copious amounts of water, the Fire Authority would seek the provision of suitable fire hydrants rather than an emergency water supply.

Further hydrants should be strategically located across the development. These should be tested and regularly serviced by the operator.

- NB The Building Regulations B5

The site design should include a safe access route for fire appliances to manoeuvre within the site (including turning circles). An alternative access point and approach route should be provided and maintained to enable appliances to approach from an up-wind direction.

The plans provided detail a number of dead-end access road which exceed the maximum distance detailed in Approved Document B, V2, 15.10.

Dead-end access routes longer than 20m require turning facilities (per ADB V2, diagram 15.3). Turning circles should comply with the guidance provided in the table below:

Appliance Type	Min. width of road between kerbs (m)	Min. width of gateways (m)	Min. turning circle between kerbs (m)	Min. turning circle between walls (m)	Min. clearance height (m)	Min. carrying capacity (tonnes)
Pump	3.7	3.1	16.8	19.2	3.7	19
ALP	3.7	3.1	26	29	4	26

Thank you,



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