



Freezer Store Power Summary & Risk Assessment

Document History

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| <i>Document Number</i> | <i>BIO:POLICY:19</i> |
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| <i>Version</i> | <i>1.2</i> |
| <i>Date</i> | <i>19/02/2019</i> |
| <i>Review Date</i> | <i>19/02/2020</i> |
| <i>Approved by</i> | <i>Kevin Corke</i> |

1. Background

The RHH freezer store is located on C road of the Royal Hallamshire hospital site and is powered from the mains supply feeding the site, due to deficiencies in the emergency generators to the site the freezer store has not been placed on the Emergency generator ring main. This document details the power provision to the site and the measures taken to mitigate any issues that would arise in the event of a power failure.

2. Electricity supply to the RHH site

Power to the RHH site is supplied from the Yorkshire Electricity distribution sub-station on Victoria Street, which feeds 5 sub stations within the RHH site forming a ring within the site. Should anyone of the onsite substations fail, power is quickly reinstated by connection to one of the other sub stations.

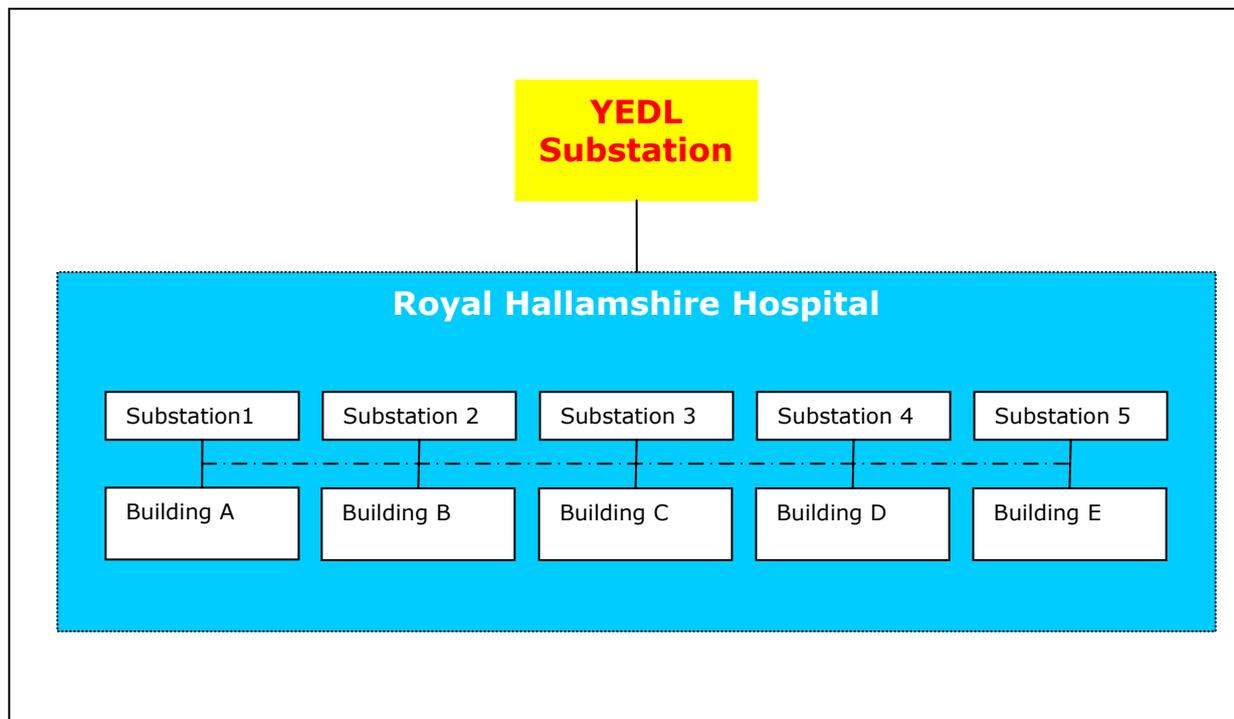


Diagram: Power setup within the RHH site

The site also has 2 high voltage emergency generators which in the event of a power cut are activated and power to outlets marked 'E' is restored. However, there is insufficient capacity within the system to maintain patient critical services and therefore the biorepository was not connected to the system.

The Trust emergency planning manager, along with colleagues in Estates have given a 'likelihood' score to all critical services, loss of electricity supply has been given a 1 in 1000 score, may occur

occasionally. Using the Trust Business continuity planning Matrix the biorepository results are:

| Critical Dependency | Likelihood of loss | Impact of loss by time period & resultant risk (Likelihood x Impact = Risk). 1=Insignificant 2 = Minor 3= Moderate 4=Significant 5= Catastrophic | | | | Risk classification and associated action |
|---------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Up to 4 hours | 4-12 hours | 12-24 hours | Over 24 hours | |
| Electricity Supply | 3 | Impact 1 x Like 3 Risk = 3 Action = A | Impact 2 x Like 3 Risk = 6 Action = C | Impact 4 x Like 3 Risk = 12 Action = P | Impact 5 x Like 3 Risk = 15 Action = R | <ul style="list-style-type: none"> A = Acceptable where risk is 1- 4 C = Control where risk is 5-8 P = Plan where risk is 9-14 R = Reduce where risk is more than 15 |

3. Contingencies

- Sanyo data for -80°C freezers without any load (ambient temp 30°C) show a temperature rise over time of:

| | | |
|--------|------|-------|
| to -80 | | hours |
| to -70 | 0:55 | hours |
| to -50 | 2:30 | hours |
| to -30 | 4:42 | hours |
| to -20 | 6:12 | hours |

With full load these would be increased

- All -80°C freezers within the facility are fitted with CO₂ backup which in the event of the freezer temperature rising to 70°C, liquid CO₂ is injected into the freezer, maintaining the temperature for approx 8hrs @ ambient temperature of 30°C. Again fully loaded these times would be increased significantly.

4. Associated Documents

| | Document | Document Reference |
|---|-----------------------|--------------------|
| 1 | Sanyo CO2 backup data | BIO:POLICY:20 |
| 2 | | |
| 3 | | |
| 4 | | |