

BATTERY BACK-UP FOR BASEMENT PUMPS



What we'll cover today:

- Why do you need battery back-up?
- How long should a battery back-up last?
- Development of battery back-up
- What is an Intelligent Power Supply (IPS)?
- Questions



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WHAT DOES BS 8102:2022 SAY?

10.2.7 Battery back-up pump systems should be included to protect in the event of power failure.



WHAT DOES THIS MEAN FOR NEW BASEMENTS?

It is in the industries best interest **that all new basements builds include battery back-ups**, especially in the circumstance of uncontrollable water ingress.

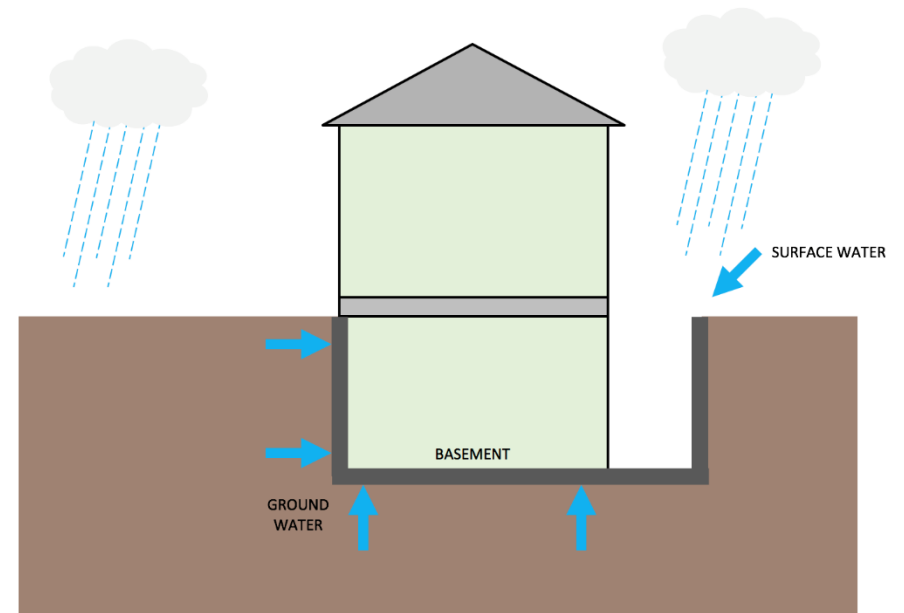
It would also be in service providers best interest to retro-fit battery back-ups to existing installations that do not already feature one.

WHAT IS UNCONTROLLABLE WATER INGRESS?

Any water source where ingress cannot be reduced or stopped, such as:

- Ground Water
- Surface Water

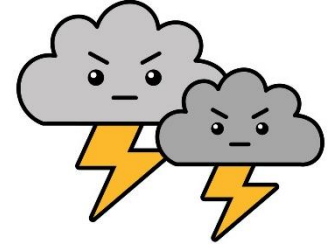
In most instances these sources are caused by the elements which are out of our control.



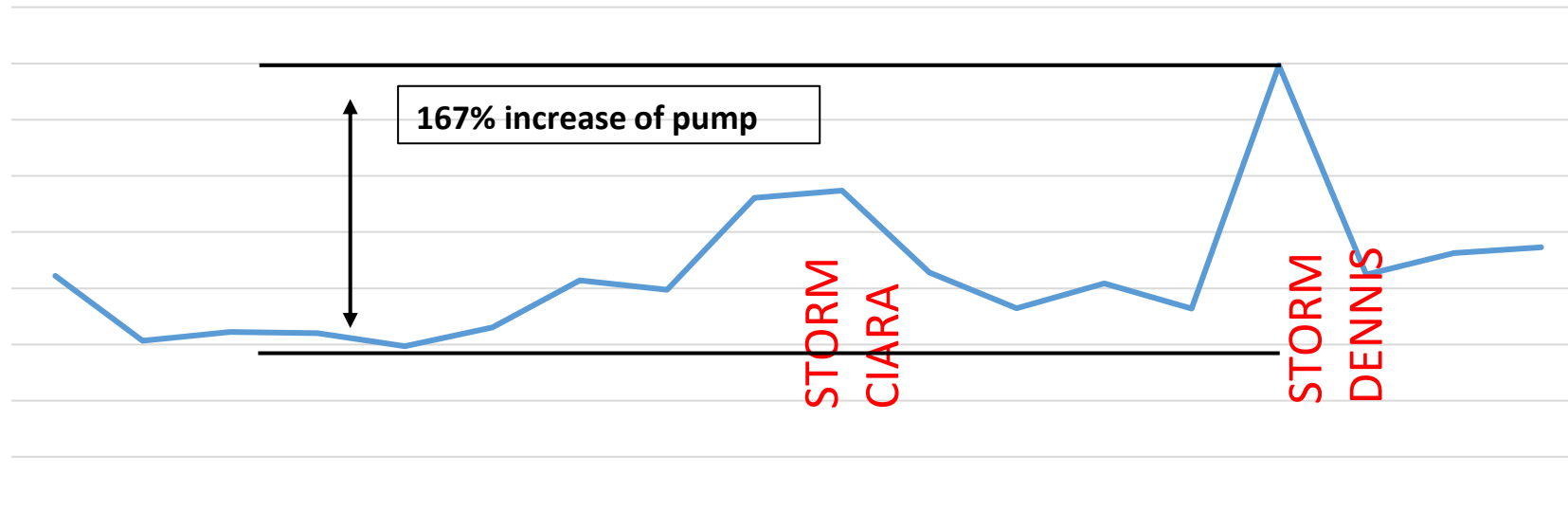
CAN WE ACCOUNT FOR STORMS? HOW MUCH DO THEY INCREASE ACTIVITY?

It wouldn't be possible to account for every extreme weather event.

But the longer our standby and back up time is, the better the chance of warding of extreme weather is!



Count of Pump Cycles by Day



THE PROPERTY ELECTRICS

The GRID



Main Distribution Board



Non-switched Fused Spur



PROPERTY

The UK Power Grid is very stable as a whole, although:

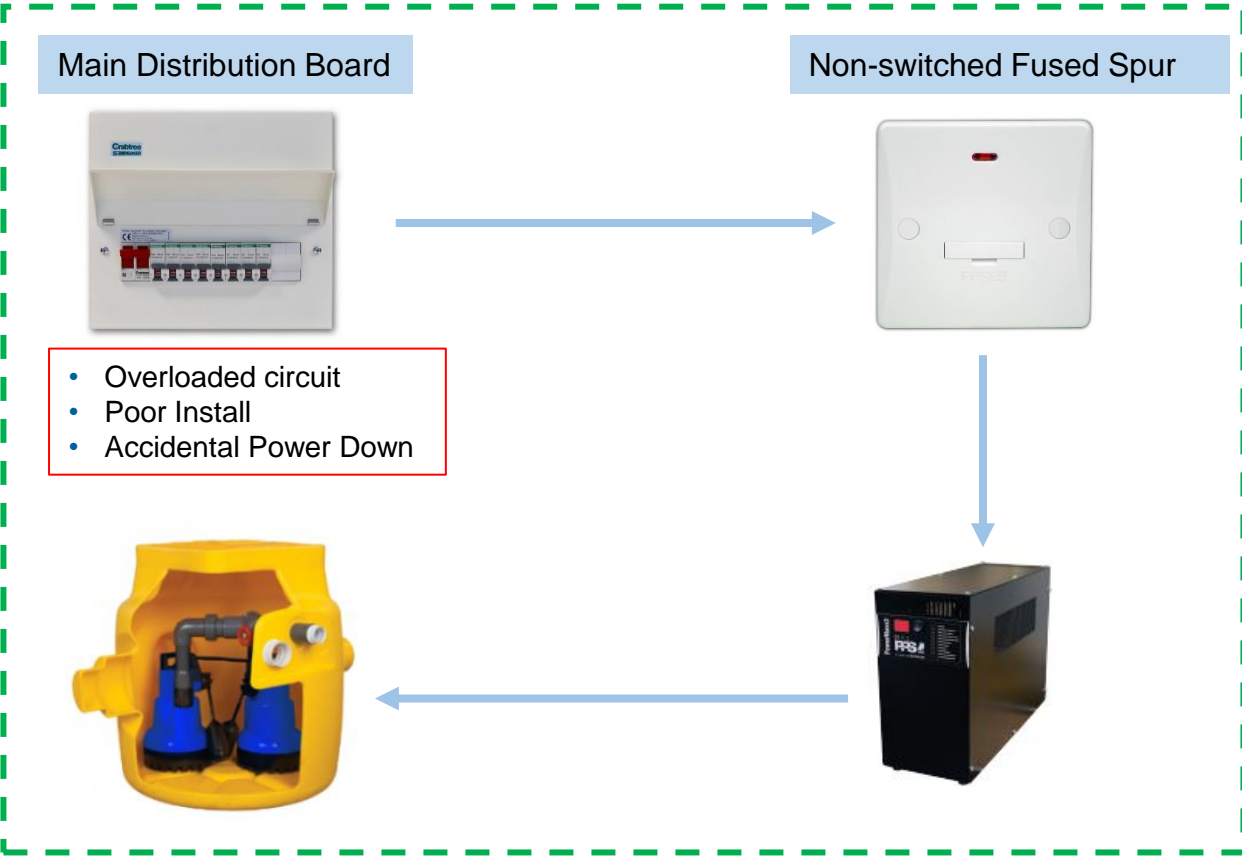
- Up to 80 power cuts are experienced throughout the UK per day across 100's of properties.
- Majority are very short, although a small minority are more lengthy.
- Overall power cuts due to the grid are a low risk.

POINTS OF FAILURE

The GRID



Traditional power cut

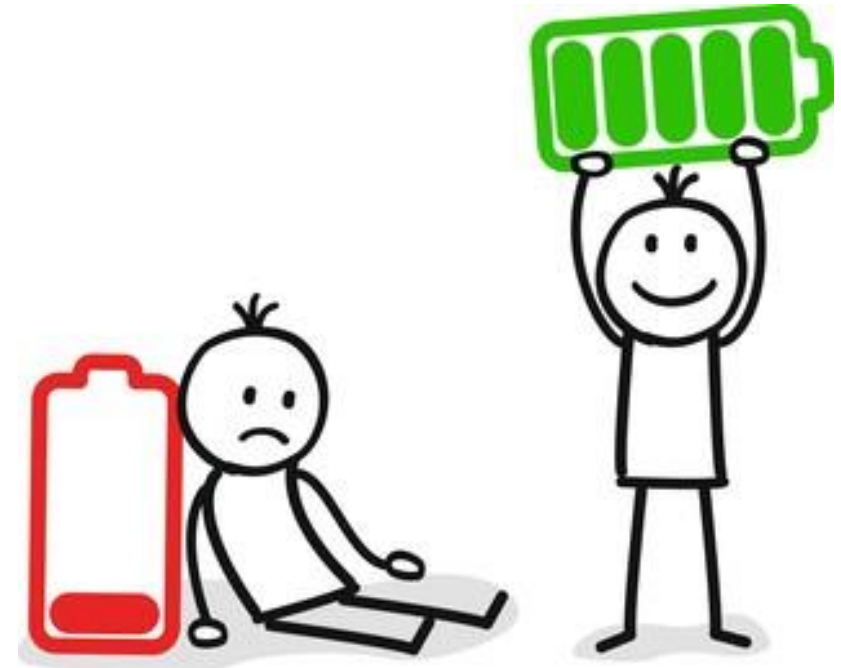


How common are mains failures as a whole:
3% of properties per month will experience either a local or grid failure*
*Taken from sample of 1250 properties

HOW LONG SHOULD A BATTERY BACK-UP LAST?

Realistically be able to power pump station running to specification (less than 3 cycles a day)?

- The minimum time expected for a call out visit.
- A reasonable expectation is that a battery back-up could last 24 hours in the event of serious power failure.
- Ideally the length of time of a standard holiday, 1-2 weeks.



DEVELOPMENT OF BACKING UP



Generators

Generators are reliable and back up time is easily expandable, although they are not a clean source of energy, can be noisy and expensive to run.

UPS's Uninterrupted Power Supply

UPS's are widely available and can provide some form of back up, although they cannot perform for a considerable amount of time and provide very little standby time, due to constantly providing power.

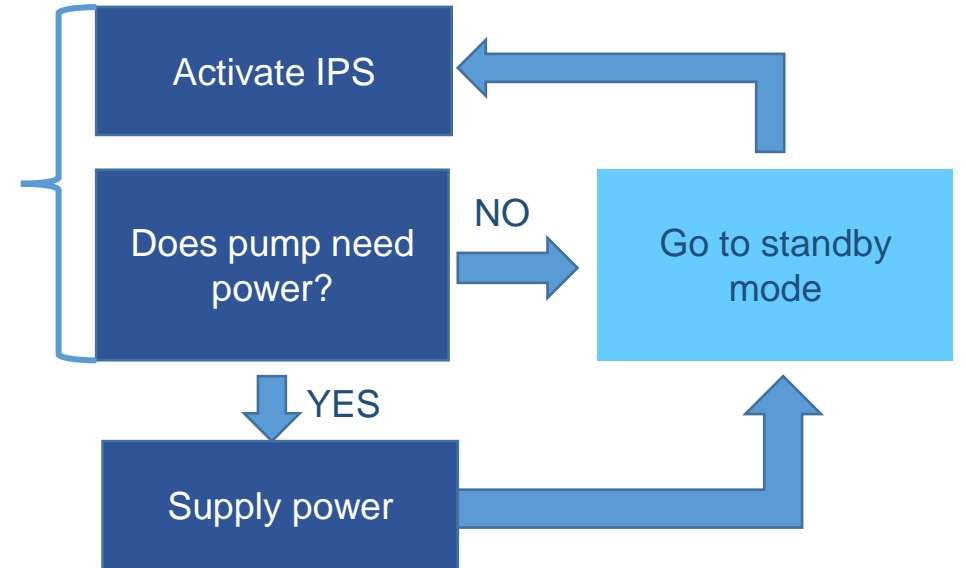
IPS's Intelligent Power Supply

IPS's are a relatively new technology that only provide power when the pumps require it, as well as having the ability to cater to specific intensities across pump stations.

WHAT IS AN INTELLIGENT POWER SUPPLY (IPS)?

An IPS is a form of battery back up that is intelligently software controlled, what are the benefits of an IPS?

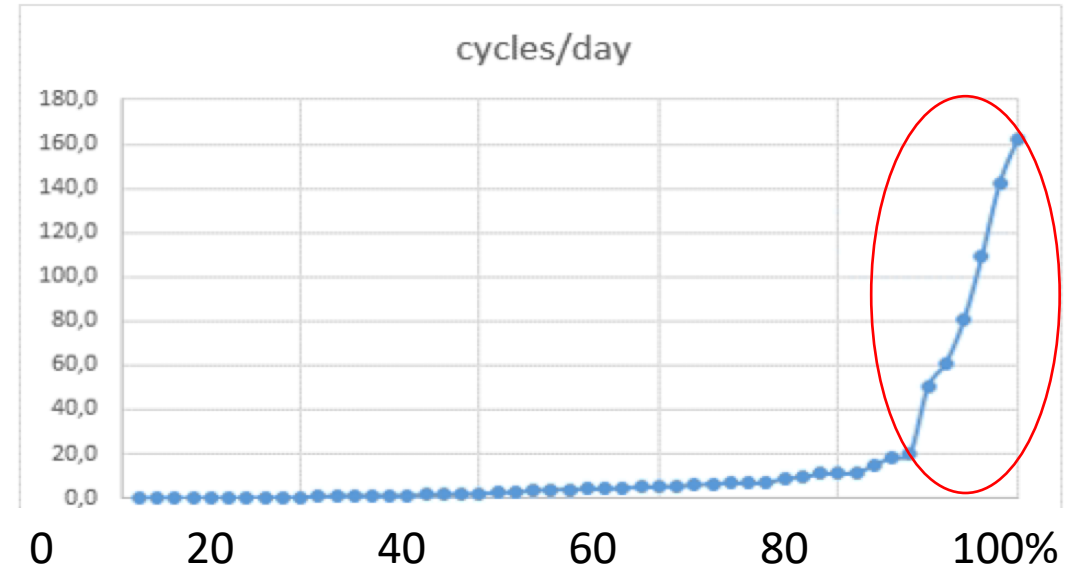
- Able to cover back up for high intensity and low intensity pump stations, bespoke response times.
- Understand pump running frequency
- Can run either the primary or secondary pump depending on circumstances.
- Useful to upload relevant data to monitoring systems or save it on site



PUMPS AND IDLE TIME

- 2% of ground water pump stations run over 20 cycles per day.
- For these sites standby time is not overly relevant.
- 88% of sites run less than 20 cycles per day.
- This means that standby time is imperative to achieving optimal back up.
- IPS's take advantage of idle periods to reserve battery power.

Real life statistics:



BATTERY BACK UP CHECKLIST

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- Is the battery easily replaceable?
- Does the unit clearly display battery capacity?

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- Does the unit produce simple error codes?

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- Does the unit log events?

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SUMMARY

- In light of BS8102:2022 battery back-ups should now be installed on all stations that pump away uncontrollable water.
- The UK power grid is not the only consideration when coming to battery back-ups, local power failure should also be considered.
- There a number of options when it comes to backing up, customers needs and the local application should be considered when selecting a back-up.

**THANK YOU
AND
QUESTIONS**