

aggreko

Contingency planning 101 E-book

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Introduction: Is your facility ready for anything?

From flash floods to snowstorms, earthquakes to hurricanes, freakishly cold winters to oppressively hot summers, unexpected weather events throw companies into chaos every day of every year, all around the world.

While these kinds of disasters grab headlines, they're not even the biggest threats to your productivity and operations. The most common factors to cause a shutdown at your facility are far less catastrophic, but equally troublesome.

Perhaps you've been behind on your maintenance schedule and now something major has broken down. Perhaps you didn't consider how a perfectly predictable change in seasons would affect your facility. Perhaps a brief wobble in the electricity supply has knocked out your data center.

Perhaps you simply have a planned turnaround lined up and you want to figure out how to avoid a total shutdown.

Whether or not you've lost power because of something beyond your control, though, the outcome is the same.

Going offline means stopping production and losing profits with every hour that goes by. It means missing key deadlines and delivery dates, potentially losing customers in the process. It means expensive delays and ever-mounting costs. In a hyper-competitive world, these are simply not risks you can afford to take.

The good news is that these problems are preventable.

For issues you can see approaching on the horizon, having a through, well-tested contingency plan in place means you can switch seamlessly onto a backup system, avoiding even a single minute's loss of productivity.

If, on the other hand, disaster strikes out of the blue, you can still slash your shutdown time from weeks to days - or even hours.

The moment the lights go out is not the moment to start thinking about how you'll cope in an emergency situation.

By reading this guide, you're taking the first step in becoming the hero that gets your company up and running fast if the worst is ever to happen.



What could an emergency cost your business?

Natural disasters can devastate whole industries and economies – especially when businesses aren't properly prepared.

Here's how 3 very different natural disasters took their toll.

2017

**Hurricane
Harvey**

2017

**Mexico City
Earthquake**

2003

**European
Heatwave**

You can't predict extremes like these – so make sure your business is all well prepared as possible to weather the crisis.

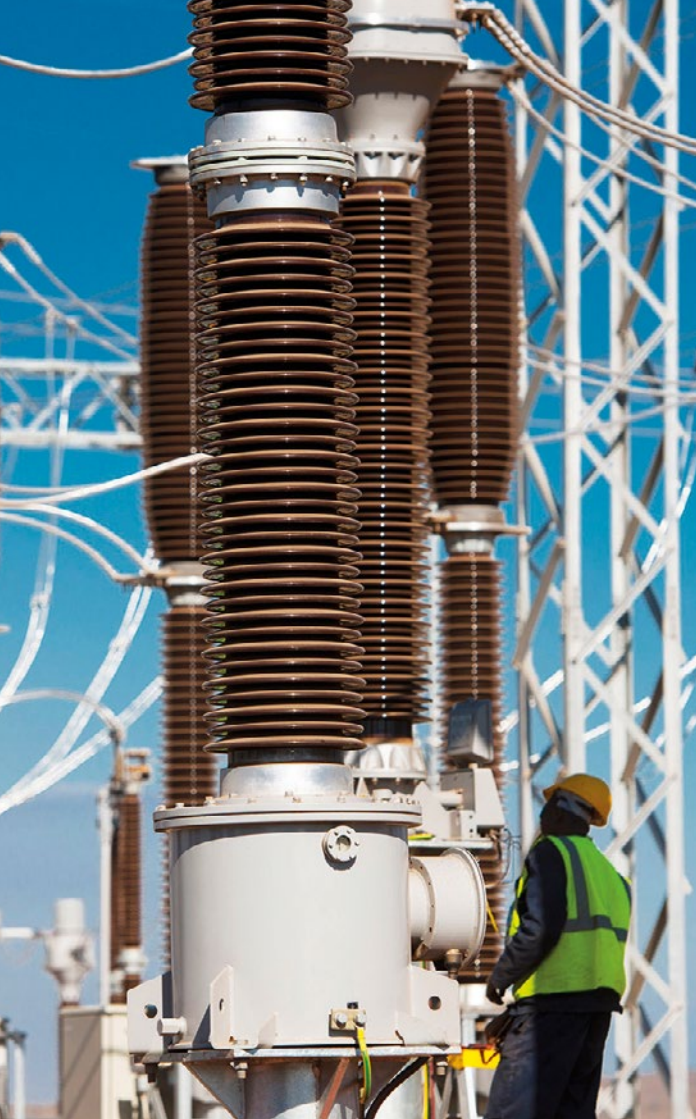


1 Chapter one: What could possibly go wrong?

Causes of a shutdown range from planned maintenance to internal breakdowns, weather crises, fires, flooding, storms, unusually high or low ambient temperatures or even a surge in demand overloading your facility's production capabilities.

More important than what created the problem, though, is that you identify precisely what could break and how it would impact everything else in the chain.

In this chapter, we'll take a look at some of the main things that break down and lead to an unplanned shutdown, regardless of the initial cause, as well as the main questions you need to start asking yourself now.



Power cuts

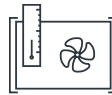
Loss of power is one of the biggest threats to any facility. Do you have an alternative power source in place, in case you lose grid power?

How straightforward would it be to switch over to a generator? Do you have any special or unusual power requirements that would pose a challenge when sourcing a replacement? For example, a motor starter sequence, resistive loads, or large horsepower motors? What kind of transformers would you need? Is all the equipment to power in one place, or would you need multiple generators / a backup substation capable of delivering power throughout the facility?



Problems in the cooling tower

A breakdown in the cooling tower will quickly bring all your other operations to a halt, making it crucial that you can bring in a replacement fast. Who is responsible for maintaining water treatment if this goes down? What temperature do you need to get to? What does the cooling tower connect to and how will you protect the rest of the process if something goes wrong?



Water chiller breakdown

If you have water chillers, what is the chilled water used for? How cold does it need to be and what is the impact when these go offline? What preliminary work would you need to do in order to connect up the existing pipes and drainage with a temporary solution? Where are your chillers situated and where do they supply?



Contaminated air

A breakdown in the cooling tower will quickly bring all your other operations to a halt, making it crucial that you can bring in a replacement fast. Who is responsible for maintaining water treatment if this goes down? What temperature do you need to get to? What does the cooling tower connect to and how will you protect the rest of the process if something goes wrong?



Unworkable conditions

What happens if any part of the building or jobsite gets too hot or cold to work in? How do you bring it back to a comfortable temperature? How do you maintain this ambient temperature so that your team can cope and be productive? Where might your warm or cool air escape from and how can you prevent that? What about air vents or access to clean, fresh air?



Equipment overheating / freezing over

As well as your employees having a meltdown in the heat or freezing up in the cold, certain equipment may also struggle. Do you know what the optimal temperatures are for every machine or system that you use? What will you do when outside temperatures drop or soar? Can you stabilize these working conditions? What if your working area is outside?



Forced shutdown

Even if everything keeps working just fine, you might still be forced to shut down. Emissions standards and regulations are getting stricter all the time and if you fall foul of the rules, you face serious penalties.

At best, you're looking at a fine. If you keep exceeding caps for certain substances, or you're already over the limit with several months of the year to go, a regulatory body could force you to stop or limit your operations. What would that mean for your company? For your clients? For profits? Have you looked into a low-emissions or efficient strategy to pull you through with no loss of productivity?

These are just some of the many areas you need to cover in your contingency plan. In the next chapter, we'll explore the practical steps you need to take now, to make sure you've covered all your bases in an emergency.



2 Chapter two: Keep calm and make a plan

Having a contingency plan in place means you reduce the risks associated with an unexpected outage, giving you a clear strategy to execute fast when things go wrong.

This will reduce your downtime by speeding up deployment and installation of your backup system, reduce risk by preventing goods from spoiling and facilities from closing while protecting your revenue, and reduce costs by ensuring you've sourced the best possible equipment, negotiated costs and budgeted well in advance.

In fact, if you develop your contingency plan in tandem with a rental provider, you will likely find that they quote you a far lower figure than the premium figure you'd have to pay for an emergency callout.

Creating the perfect contingency plan is not, however, a job to take lightly. For it to be watertight, you need to allocate proper time, resources and attention into getting it just right.

Let's dive in and take a deeper look.



Putting together a team

The first thing you need to do is decide who will be responsible for assessing the risks onsite and developing each part of the plan.

Make sure you involve representatives from every department, team or work area in the facility. It's incredibly important that you hear from the people who actually use the equipment and rely on the processes in question. They'll be able to tell you exactly how it all fits together and what it would mean if one part of the chain fell apart.

They'll also be able to point out obvious problems with proposed solutions that wouldn't occur to

you if you're not familiar with that particular area of operations.

It also makes sense to involve engineers from your proposed rental utilities provider as early on in the process as possible. After all, they're the ones that will ultimately bring in temporary equipment if and when things go south, so briefing them early and getting their advice and expertise into the mix could save time and hassle later.

Once you've put together your contingency planning dream team, schedule a series of meetings to talk through exactly what you need in a crisis, draw up plans, catch up on progress and discuss any new issues that have emerged.

Actions to take now: Who needs to be on your team?

Department / Facility / Team:

Name of representative:

Contact phone / email:

Department / Facility / Team:

Name of representative:

Contact phone / email:

Department / Facility / Team:

Name of representative:

Contact phone / email:

Department / Facility / Team:

Name of representative:

Contact phone / email:

Department / Facility / Team:

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Contact phone / email:

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Name of representative:

Contact phone / email:



Covering all your bases

Next, sit down with a map or plan of your entire site. You need to go through each section methodically, identifying every item or power source that could go down.

Don't stick just to obvious things, like "What happens if this piece of equipment breaks down?" You need to consider every eventuality, including vulnerabilities with your existing backup measures.

For example, what impact would water damage have on critical backups stored in a particular area? What happens if you have an uninterruptible power supply, but the equipment isn't sized right for it? What happens if power goes down to a key control center?

It's very important that you trace every process from start to finish. After all, issues can crop up at any point in the train. Look at the little details - peak power loads, equipment configurations, voltage. Any oversight could cause delays.

And what about problems that will arise specifically as a result of a shutdown? How might you control the temperature and humidity, or replenish oil-free air, if something packs up?

Think about logistics, too. If you need to switch to a backup substation, how would that actually work? How will you physically transport the equipment you need in and out of the building? How will you power it? What if there's a fire, flood or snowstorm? How will that affect your ability to tackle the problem?

This will swiftly highlight which areas, systems, processes and types of equipment are most at risk of damage, which critical functions would be threatened most by loss of power, and where challenges might arise with the execution of any plans you make.

Every question you answer will no doubt raise another five questions in turn - and that's a good thing. Better to address every eventuality now than on the day!

It's also important that you have a clear idea of how your backup strategy will manifest in the case of a catastrophic outage. What are the most critical needs when it comes to temporary utilities? What's the order of priority here? Which issues can you handle in-house and what do you need to hand over to a rental utilities vendor, or other external help?



Actions to take now: Planning your site inspection

Facility or Building name:

Operations covered:

Business-Critical processes taking place here:

Main equipment used:

Source(s) of power used:

Backup power connection:

Other key utilities:

Facility or Building name:

Operations covered:

Business-Critical processes taking place here:

Main equipment used:

Source(s) of power used:

Backup power connection:

Other key utilities:



Running a site survey

While you're in this discovery phase, it's highly recommended that you schedule a site survey with the temporary utilities provider you plan to use in an emergency.

This rental provider will walk you through the specific rental equipment they could provide, along with any supporting ancillaries, and explain their own logistics strategy, including transport, load-in and equipment placement.

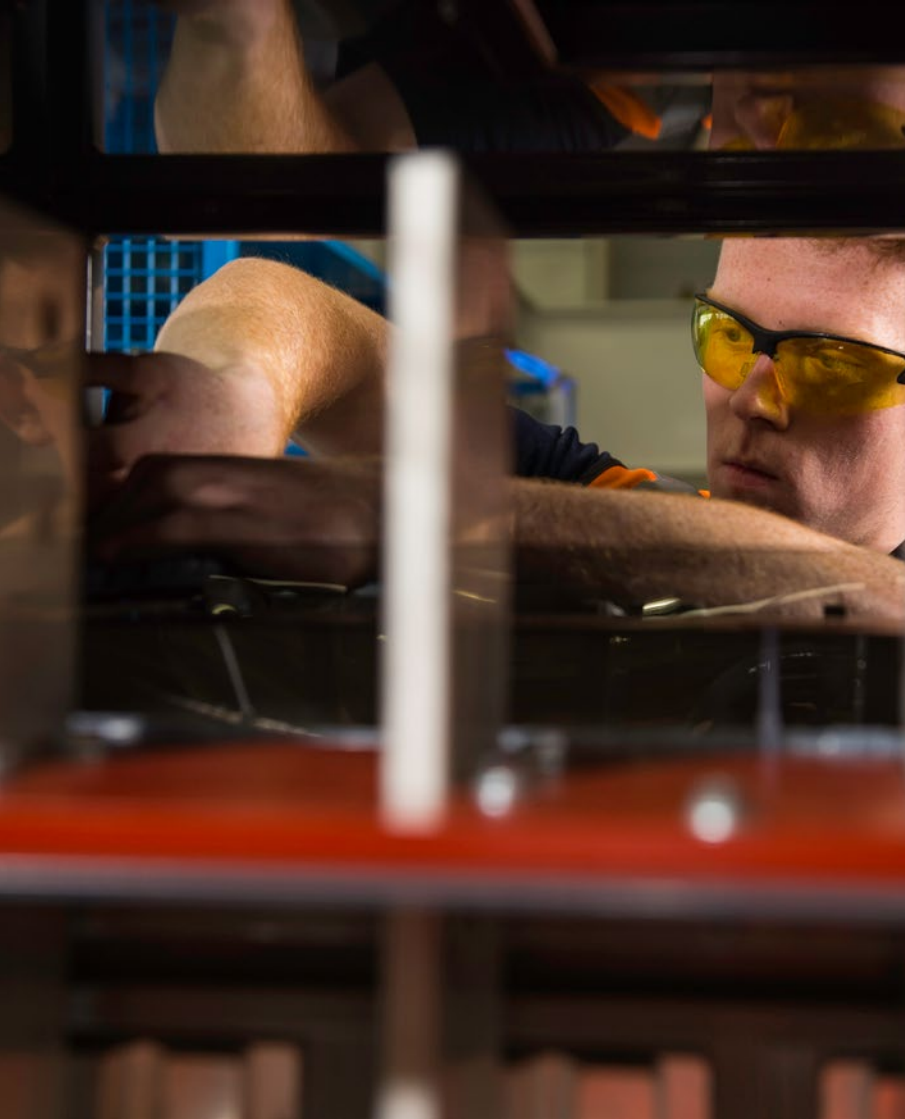
They'll examine your existing setup, including power voltages, cooling pressures and flow rates, and connection requirements like cabling, pipework modifications and building adjustments. They should advise you on fuel management, and can begin making plans for installations, commissioning, and any third-party support, such as electrical contractors.

Not only will they be able to point out any issues that you've missed, but they may also be able to suggest elegant alternatives to complex problems, which they've successfully implemented elsewhere.

This could save you a ton of stress, while giving you a chance to check that this vendor actually has the best possible kit for your location and type of facility, and can deal with any scenario you throw at them.

Best of all, they may be able to ring-fence a fleet of critical utilities and generators for your use, with costs agreed upfront, and can have the whole system ready and waiting to load at the moment you need it. That way, your perfect contingency setup is just an activation phone call away.





3 Chapter three: Testing, testing...

Even the best-laid plans can go awry. No matter how perfect it looks on paper, you need to check that your contingency plan works before you can rest easy!

If you have any scheduled downtime coming up, for example for maintenance, now is your chance to test your plan.



Ask yourself...

What backup equipment, utilities, labor, plumbing, fittings and electrical accessories will you be able to manage yourself in an emergency?

Notes:

What would you need to bring in from outside?

Notes:



Doing a dry run

Set up your backup system exactly as you plan to use it. See what happens when you switch over power to the substation. Examine all your installations and temporary equipment. Is everything working as it should?

Again, involve the whole contingency team in the test. Do they have any concerns? Now that it's all up and running before their eyes, is there anything there that's less than optimal? Could you streamline any part of the system, or make connections more logical, for example?

This is also a great chance to test your relationship with your rental utilities provider. How easy did you find the process of working with them? Did the kit all worked as advertised? If you have any concerns, complaints or requests, you can raise them now, before it's too late.



Sweating the small stuff

If it's not feasible for you to bring in all the actual backup kit, walk through your plans on the ground as if you do have everything in place.

Check every detail. Seriously. An incredibly important benefit of this is that you spot any tiny issues that were overlooked in the plan but make a big difference on the day.

For example, are there power sockets everywhere you need them? Are the cables long enough? Is there enough space to physically position units where you want them - and can the flooring you've put them on take their weight? Do you have a way of transporting them into place? Are the transformer configurations correct?

Is all the equipment ready to go as soon as it's in place, or do you need to make any tweaks? If so, where will the tools and parts be for this? Is the temperature okay? What about the airflow? It's these seemingly pedantic questions that will stand between a seamless installation and another expensive nightmare.

Actions to take now: Note any issues and concerns spotted during your walkaround



Safety first!

Remember that safety considerations don't matter any less in an emergency situation. Your contingency plan should recognize and anticipate dangers and demonstrate how you'll keep your team safe while they enact the backup strategy.

Your planning process needs to take note of site-specific safety requirements. That goes for any equipment you bring in from outside, too. Don't slack on this one!





4 Chapter four: Get it down on paper

So you've figured out an impeccable strategy to deal with any emergency, you've checked it works... and now your job is done, right?

Not so fast! While it's great that you know what you're doing, you still need to make that information clear and available to everyone else who is affected by it, too.



Document everything

Make sure you formalize your plans and document them properly. This documentation should be readily available within your company. Share it directly with the rest of your team as well as your external partners and temporary equipment or utility providers.

After all, if the people entrusted with enacting the contingency plan can't find it in a hurry, all your hard work will be wasted!

When we say "document everything" we really mean everything. If you try something and it doesn't work out as expected, make a note of it. If you changed part of the plan after testing it out, say that. If you spotted potential problems during your walkaround or dry run, don't keep it to yourself. Share your knowledge and thought process so that others don't repeat the same mistakes later on.



Assign responsibility

Everyone in the team should be 100% clear on what their role is in an emergency.

Who is ultimately responsible for enacting the whole plan? Who is the emergency contact for each area in the facility? Who makes the call to temporary utilities companies? Who is your contact there, while we're on the subject? Which parts of the plan are handled internally and which come from outside?

Again, the small details are as crucial as the big ones. Take temporary generators, for example. Who is responsible for fueling and refueling them? Where will you keep tools of spare parts for any of the equipment you use, and whose job is it to keep an eye on all this?

In fact, whose job is it to monitor the backup equipment at all? Will someone in your team take charge, or is it the responsibility of your temporary utilities vendor? If so, will they have someone with you on site at all times, or do they have the technology to monitor performance and fuel levels remotely?

You certainly don't want to have these arguments or negotiations in the eye of the storm. Make sure everyone is crystal clear on exactly what's expected of them, well in advance.

Actions to take now: Business-Critical tasks in an emergency

Task:
Responsibility assigned to (name, job role, dept):
Contact phone:

Task:
Responsibility assigned to (name, job role, dept):
Contact phone:

Task:
Responsibility assigned to (name, job role, dept):
Contact phone:

Task:
Responsibility assigned to (name, job role, dept):
Contact phone:

Task:
Responsibility assigned to (name, job role, dept):
Contact phone:



Make a checklist

While documentation is important, in the first hours after a crisis, no one will want to wade through a stack of paperwork to find vital instructions and contact information.

Summarize the most important stuff in an easy-to-read checklist, with key tasks clearly assigned to a specific person. This will help your contingency plan to kick into action at lightning speed.

Click the button below for the five steps for crisis prevention contingency planning checklist.

Final thoughts: Who's got your back?

While proper planning is essential, the success of your contingency plan also hinges on the support network that helps you roll it out.

Inevitably, you will need to bring in temporary utilities to prevent a shutdown or get you back on your feet fast enough to protect your profits. That means you need a rental partner that you really trust to step up to the plate.

At the very least, they need to have an extensive fleet of power, cooling and heating solutions that can be deployed within hours. Ideally, they'll be able to ringfence the most important stuff so that it's always on standby the moment you need it.

Make sure you work with someone that has a service center in your area and is available 24/7/365 - whenever you might need them. Disasters don't take holidays, you know!

Finally, they must know what they're doing in case of an emergency. Their engineers should be dedicated experts in the sector, with plenty of experience of tackling similar problems in the past. If you've involved them in your contingency planning from the start, they should feel like an extension of your own team; familiar with your site, fully acquainted with your specific challenges and goals, and ready to kick into action the minute you pick up the phone.

Don't settle for anything less. Believe us, it's worth making the effort and forming these partnerships now. When disaster comes knocking at your door, you'll be very glad you did.

Don't put it off any longer! To schedule a site survey or simply chat to us about your concerns, please schedule a call today on 1-800-AGGREKO

End

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