Preptorum

FIRST-HOUR RUNBOOK: BLIND GRID

EXAMPLE PACK: GRIDTORUM PLC
DOCUMENT 02
FICTIONAL · NOT A REAL COMPANY

Fault and repair systems down · GridTorum PLC · Continuity pack document 02

> **FICTIONAL EXAMPLE CONTENT – GridTorum PLC is not a real company.** Roles, sites, timings and thresholds are invented examples. This runbook does not replace any company's safety rules. A real company replaces every detail with its own approved procedures.

Use this runbook when outage management, work management, field dispatch or fault intake is unavailable or cannot be trusted, for any reason: a cloud outage, a data centre loss, a network or telecoms failure, a software fault or a cyber event. Use it whether or not SCADA and the EMS are still showing the network. If you are unsure whether it applies, start it. Standing down early costs little; starting late costs a lot.

The two questions that shape everything:

1. **Can the control room still see the network?** Is SCADA and the EMS showing live, trustworthy data?
2. **Can we still hear about faults?** Are reports from customers, DNOs, telemetry alarms and field crews still arriving?

If the answer to either is "no" or "not sure", the company is running blind. Work through this runbook.

1. WHO DECIDES

ROLE	DECIDES	STAND-IN IF ABSENT
Incident Lead (duty Senior Control Engineer in the control room that holds control)	Declares the incident and sets the operating mode (Normal, Degraded, Blind); approves restoration order; approves any departure from planned switching	Next most senior control engineer on shift
Duty Director (strategic lead, on call)	Company-wide response, mutual aid, government and regulator contact at senior level	Deputy duty director
Network Picture Lead (duty control engineer)	Builds and keeps the manual network picture; signs off what the board shows	Second control engineer on shift
Field Operations Duty Manager	Field crews, patrols, staff posted at sites, radio and satellite-phone net	Deputy field operations manager
Senior Authorised Person on duty	Safety rules: permits, isolations and switching programmes	Another Senior Authorised Person named on the rota
IT and OT On-Call Leads	Diagnosis, recovery estimate, failover decisions within their systems	Platform on-call engineers
Partner Liaison Lead	DNOs, generators, large users, local resilience forums	Deputy partner liaison
Communications Lead	Public, media and customer messages	Communications duty officer
Government and Regulatory Liaison Officer	Notifications under our own procedures; timed record of what was said	Deputy liaison officer

Rules of authority

- One Incident Lead at a time. Hand over explicitly, out loud and in the log (see document 04).
- Only the Incident Lead changes the operating mode or the restoration order.
- The safety rules always come first. No time pressure, instruction or seniority overrides a Senior Authorised Person on safety.
- If the Incident Lead cannot be reached within 5 minutes (example), the most senior control engineer present takes the role until relieved.

2. THE FIRST HOUR, MINUTE BY MINUTE

0–5 MINUTES: CONFIRM AND DECLARE

- ☐ **Anyone:** report the problem to the Incident Lead in person or by control-room phone. Do not wait for email or Teams.
- ☐ **Incident Lead:** answer the two questions above. Note the time and the answers.

☐ **Incident Lead:** declare a blind-grid incident and set the operating mode to **Degraded** (fault systems down, SCADA and EMS trusted) or **Blind** (SCADA or EMS also lost or untrusted).

☐ **Incident Lead:** pause all planned, non-urgent switching and outage work. Work in progress is made safe under the safety rules, not abandoned.

☐ **Network Picture Lead:** start the **paper control log** (front of the incident folder, or the template on this drive). Every call, report, decision and switching action is written down with the time.

☐ **Incident Lead:** open the out-of-band bridge (document 04, section 4) and start the call tree.

5–15 MINUTES: REBUILD THE PICTURE

☐ **Network Picture Lead:** open the **last known network state snapshot** on the Preptorum drive. Our own systems export it and the duty control engineer copies it to the drive on a set schedule (example: at every shift change), so note its time. Anything that changed after that time must be added by hand.

☐ **Network Picture Lead:** if the snapshot is older than expected, say so on the bridge: the drive holds only what our staff last put on it.

☐ **Network Picture Lead:** lay out the **paper network diagrams and single-line diagrams** kept offline in the control room cabinet and on the drive. Mark the snapshot state on them: circuits in and out of service, open and closed points, known faults and work in progress.

☐ **Control engineers:** if SCADA is still trusted, print or photograph the current alarm list and the network overview now, in case it fails later.

☐ **Field Operations:** call every staffed substation and every crew on shift by phone or radio for a **roll call**: who is where, what they can see, and whether anything has tripped, alarmed or caught fire.

☐ **Partner Liaison:** call each DNO control room on the direct lines on the contact sheet and ask what they can see at their boundary with us.

☐ **Incident Lead:** call the other control room (PCR or BCR). Confirm it can see what you can see, and agree that this room keeps control.

15–30 MINUTES: OPEN FALLBACK FAULT INTAKE

☐ **Partner Liaison:** switch fault reporting to the **fallback intake** (section 4). Tell DNOs, generators and emergency services which numbers and channels to use.

☐ **Field Operations:** send **manual patrols** to substations where the picture is unclear, starting with the priority list (section 5).

☐ **Field Operations:** post staff at **key unstaffed sites** on the pre-agreed list, with a radio or satellite phone and a fixed time to report in.

☐ **Network Picture Lead:** update the board from every report. Mark each item as **confirmed** (seen by our staff or trusted telemetry), **reported** (from a partner) or **assumed** (from the snapshot only).

☐ **IT and OT On-Call Leads:** give the Incident Lead a first view: cause if known, what is affected, failover options, and an honest recovery estimate with its confidence.

☐ **Government and Regulatory Liaison:** start the notification checklist in our own procedures (section 7).

30–60 MINUTES: RESTORE SAFELY AND COMMUNICATE

☐ **Incident Lead:** agree the restoration order with the Partner Liaison Lead, using the priority list (section 5).

☐ **Senior Authorised Person:** confirm that every manual switching action follows the safety rules (section 6). No exceptions.

☐ **Communications Lead:** issue the first public and partner message using the approved template (section 7).

☐ **Network Picture Lead:** refresh the picture; list the faults still unexplained and the sites still not seen.

☐ **Incident Lead:** if a shift change is due within 2 hours (example), plan the handover now (document 04).

☐ **Incident Lead:** set the next update time and tell everyone on the bridge.

3. REBUILDING SITUATIONAL AWARENESS WITHOUT THE SYSTEMS

SOURCE	WHAT IT TELLS YOU	HOW MUCH TO TRUST IT
Last known network state snapshot (exported by our own systems and copied to the drive by the duty control engineer)	Network state at the snapshot time	Good as a starting point; out of date by however long has passed
Paper network diagrams and single-line diagrams (offline cabinet and drive)	How the network is built and switched	Good for layout; marks must be kept up to date by hand
Control-room manual log	Everything done and reported since the incident began	Good if every entry has a time and a name

SOURCE	WHAT IT TELLS YOU	HOW MUCH TO TRUST IT
SCADA and EMS (if still trusted)	Live state and alarms	Good while trusted; record what you see in case it fails
Phone and radio reports from substations and crews	What our own staff can see	Confirmed, once read back
DNO, generator and emergency service reports	Effects at the edges of our network	Reported; confirm where it matters
Manual substation patrols	First-hand state of plant	Confirmed

Keep the board honest. One person keeps the board. Nobody else marks it. Read every report back to the caller before you mark it.

4. FALLBACK FAULT INTAKE

When the normal fault intake is down, faults still happen; they just stop reaching us. Open every channel below that applies.

- **Alternative phone lines:** pre-arranged fallback numbers held by DNOs, generators and emergency services, answered in the control room or at the backup site.
- **Radio:** the operational radio network to substations and crews, with a fixed call-in schedule.
- **Satellite phones:** at each control room and with the staff posted at key sites, for when phone networks fail.
- **Staff physically posted at key sites:** pre-listed substations get a person with a radio, a log sheet and a fixed reporting time.
- **Liaison officers:** a GridTorum liaison joins each DNO control room's bridge, and a liaison joins the local resilience forum arrangements in the affected areas.
- **Written reports:** where voice fails, reports come by runner or vehicle to the nearest staffed site.

Every report goes into the paper log with the time, the source, the site and what was seen.

5. PRIORITISING RESTORATION

Restore in the order agreed in advance with partners and kept on this drive. A typical order (example only):

1. Anything where life is at risk, and the safety of our own staff and the public.
2. Supplies that keep the network itself running: our own control rooms, telecoms and substation batteries.
3. Critical national infrastructure fed from our network, as listed in the priority list.
4. Hospitals and other health sites, through the DNOs that supply them.
5. Water and sewage treatment.
6. Telecoms and emergency service sites.
7. Everything else, largest groups of customers first where safe.

The Incident Lead can change the order for a good reason and must write the reason in the log.

6. SAFETY RULES FOR MANUAL SWITCHING

Working without the usual systems makes mistakes more likely. Slow down.

- **Permits:** no work on plant without the permit the safety rules require. Paper permit books are kept at each control room and key site.
- **Isolation and earthing:** prove isolation and apply earths exactly as the safety rules require before any work.
- **Switching programmes:** write every switching programme down, check it against the diagram, and have a second competent person check it.
- **Read back every instruction:** the person switching reads the instruction back word for word before acting, and reports back when done.
- **Double-check the location:** confirm the site, circuit and device by name and number on the ground before operating it.
- **Mark the diagram:** update the paper diagram and the log after every operation, not later.
- **Stop if unsure:** anyone can stop a switching action if something does not match the diagram or the instruction.

7. TALKING TO GOVERNMENT, THE REGULATOR AND THE PUBLIC

Government and the regulator

- The Government and Regulatory Liaison Officer leads, with the Duty Director at senior level. Notify the relevant government department and the energy regulator according to your licence conditions and notification obligations, as set out in your own procedures.
- Keep a timed record of what was known, when, and what was said.
- Do not let government or the regulator hear about the incident first from somewhere else; when in doubt, escalate early.

Partners

- DNOs, generators and local resilience forums get short, regular updates on the bridge at fixed times.

The public

- Short and factual: what is affected, what we are doing, what people should do, and when we will update next.
- Do not guess at the cause or the restoration time.
- Use approved templates kept on this drive, sent through the channels that still work.

Example first public message: "We are dealing with a technical problem affecting some of our systems. Our control engineers are managing the network and our teams are on site. If you have no power, please contact your local network operator. Our next update will be at [time]."

8. STANDING DOWN

The Incident Lead stands the incident down only when:

- the fault and repair systems are confirmed sound by the IT and OT On-Call Leads;
- the systems' view of the network matches the manual picture, and every difference has been explained;
- every manual log entry, permit and switching action has been entered into the normal records and checked by a second person;
- fault intake is back on its normal channels and partners have been told;
- government, the regulator, partners and the public have had a closing message where needed.

Then hold a short review within two working days (example) and update this runbook.