Generator Safe Operating Procedure

ENGINE-DRIVEN GENERATORS | TEMPORARY EVENT POWER | 2026-27 REVIEW CYCLE

Document Ref	Version	Status	Issue Date	Next Review	Owner
RI-SOP-003	2.2	APPROVED	01 Oct 2026	01 Oct 2027*	Rugby Inflatables

Purpose and scope

A controlled operating procedure for planning, collection, transport, siting, electrical connection, operation, monitoring, refuelling, shutdown and return of a hired engine-driven generator used to power Rugby Inflatables equipment. It applies where the generator remains on site and is under the control of trained Rugby Inflatables staff. The generator manual, hire-company instructions, RI-RA-004 and any competent electrical design or test information remain controlling documents.

Operating boundaries - Rugby Inflatables policy

Only trained Rugby Inflatables staff may start, stop, monitor, refuel or alter generator connections. The supply is for the agreed Rugby Inflatables load only; customers, traders and event organisers must not add equipment. The generator must operate in a safe open-air location with public access restricted. Staff may connect approved plug-and-socket equipment as trained, but must not design, modify or repair an electrical system, alter neutral/earth arrangements, carry out live work or improvise protective devices.

Authority, competence and release

The RI operator controls the generator and may refuse or stop use where the equipment, site, weather, fuel arrangements, electrical system or available competence is inadequate.

Any matter involving earthing, protective conductor arrangements, RCD selection, distribution design, testing, damaged electrical equipment or uncertainty over the generator supply must be referred to the hire company or a competent electrical person before use. A successful start does not prove the supply is safe.

Basis of the 2026-27 revision

Prepared against guidance available on 01 October 2026. HSE treats portable generating sets as electrical systems under the Electricity at Work Regulations 1989 and expects event electrical equipment to be properly selected, installed and maintained. HSE event guidance specifically requires planning for generators, earthing, public segregation, weather protection and cable routing. BS 7909:2023+A1:2024 is the current event temporary-electrical-system code of practice. BS 7671:2018+A4:2026 has been published; the previous A3:2024 edition remains transition-valid until 15 October 2026. Fuel risks are also subject to DSEAR where applicable. This procedure supports compliance but does not certify a particular temporary electrical system.

REVIEW TRIGGER: after new guidance, generator/supplier change, electrical-system change, incident/near miss, repeated trip, fuel/fire event or material change in RI operations. Owner approval completed before controlled issue.

1. Plan, select and collect the generator

RESPONSIBLE: RI OWNER / EVENT LEAD / TRAINED GENERATOR OPERATOR

1.1 Define the electrical load before hire

Identify every blower and other Rugby Inflatables item that will be supplied, including rated voltage, running current/power and any starting demand stated by the manufacturer. Size the generator and distribution for the actual simultaneous load with suitable capacity margin; do not assume a kVA label alone proves compatibility. Confirm the number and type of outlets, cable lengths, connector type and whether 230 V single-phase supply is required. No third-party loads may be added without a fresh competent review.

1.2 Obtain the supplier information and correct equipment

Hire from a reputable supplier and obtain the model-specific operating instructions, output rating, fuel type, permitted duty, outlet details and the supplier's requirements for earthing, neutral arrangement, RCD/protective devices and weather protection. Confirm the generator is intended for the proposed event use and that any distribution unit, adapters and leads are compatible. Do not substitute a different generator on the day without repeating the assessment.

1.3 Set the competence boundary

A trained RI operator may perform normal manufacturer-described controls and connect approved plugs to the pre-agreed outlets. Earthing design, neutral-earth links, earth electrodes, distribution-board configuration, protective-device selection, electrical testing and fault repair are competent-person tasks. Never add or remove an earth spike, bonding link or protective device because it appears safer; the generator system must be used in the configuration confirmed by the supplier or competent electrical person.

1.4 Pre-collection and collection checks

Check hire documentation and visually inspect the generator, outlets, covers, frame, fuel system, exhaust, controls, emergency stop if fitted, cables, plugs, connectors and distribution equipment. Reject visible damage, fuel leakage, exposed conductors, missing guards or unclear safety information. Confirm the equipment can be safely handled and transported; use suitable trolley, ramp/lift or sufficient trained help rather than uncontrolled manual lifting.

1.5 Fuel and transport planning

Plan fuel quantity so mid-event refuelling is avoided where reasonably practicable. If separate fuel is carried, use containers intended and approved for that fuel, keep caps secure, protect against movement and follow the supplier's instructions and applicable dangerous-goods requirements. Petrol used or stored for work remains subject to DSEAR risk assessment. Keep fuel separate from ignition sources and do not carry damaged or leaking containers.

HOLD POINT - before leaving the supplier/base

The event lead confirms the generator identity and rating, intended load, supplier instructions, protective arrangement, cables/connectors, fuel plan, handling method and trained operator. If the supply configuration or protection cannot be explained, stop and obtain competent advice rather than testing it on the event site.

2. Accept the site, position and build the supply

RESPONSIBLE: TRAINED RI OPERATOR | COMPETENT ELECTRICAL PERSON WHERE REQUIRED

2.1 Select a safe open-air location

Place the running generator outdoors in open air on stable, level ground where exhaust gases can disperse. Do not operate an engine-driven generator in a building, hall, tent, marquee, van, container, gazebo or other enclosed or partially enclosed space. Position exhaust so fumes cannot collect or drift towards people, inflatable air intakes, doors, windows, vents or occupied areas. Manufacturer-built acoustic/weather enclosures may be used only as designed; never add tarpaulins, boxes or improvised covers that restrict cooling or trap fumes.

2.2 Separate the public and maintain emergency access

Create a controlled exclusion area that prevents public contact with hot surfaces, moving parts, fuel, controls and live electrical equipment while preserving operator access and emergency shutdown. Keep the generator away from queues, play areas and escape routes. Use suitable barriers/signage where needed. Keep combustible material clear to the manufacturer's requirements and place any fire-fighting equipment so it remains accessible without approaching a burning generator.

2.3 Route and protect the temporary cabling

Use only correctly rated, serviceable cables and connectors suitable for the environment and load. Prefer the RI event connection system, including suitable 16 A blue CEEform equipment where specified; use purpose-made adapters only. Unwind reels as required by their rating. Keep plug/socket joints off wet ground and protect them from rain, vehicles and mechanical damage. Route cables away from users and exits; protect unavoidable crossings with suitable ramps or other event-approved protection. Do not use damaged domestic multiway blocks, loose adapters or improvised joints outdoors.

2.4 Confirm electrical protection before energising

Use the generator's earthing/neutral and protective-device arrangement exactly as confirmed by the supplier or competent electrical design. RCD protection is an additional safeguard, not proof that the system is safe; HSE advises no more than 30 mA for additional personal shock protection where such RCD protection is appropriate. Operate any user-test function required before use, but remember a test button is not a full electrical verification. Repeated trips, unclear bonding, missing protection or any uncertainty require competent investigation.

2.5 Weather, water and ground conditions

Position the generator and connections so foreseeable rain, surface water, mud or flooding cannot create danger. Use only manufacturer/supplier-approved weather protection that preserves exhaust and cooling airflow. Do not place electrical connections in puddles or low points. If conditions cannot be controlled, do not energise. Generator operation does not override the separate weather controls for the inflatables.

HOLD POINT - before energisation

Generator securely positioned; open-air exhaust route acceptable; public exclusion in place; cable route protected; load and outlet arrangement correct; supply/protective configuration confirmed; no fuel leak, water threat or unresolved electrical defect. If any item fails, do not start the generator.

3. Start, connect and prove safe operation

RESPONSIBLE: TRAINED RI GENERATOR OPERATOR / RI SETUP LEAD

3.1 Start with the public clear and loads controlled

Follow the exact supplier/manufacturer starting sequence. Start with plugs disconnected or loads switched off where the instructions require it, keep the public clear and allow the engine/output to stabilise. Observe for fuel leakage, abnormal smoke, exhaust direction, vibration, warning lights, unusual noise or overheating. Shut down immediately if abnormal operation is suspected.

3.2 Connect only the pre-agreed Rugby Inflatables load

Connect the planned equipment using the approved outlets and distribution. Add loads in the sequence required by the generator/supplier so blower starting demand does not overload the supply. Do not exceed any outlet, cable, adapter, distribution or generator rating. Prevent customers or event staff connecting chargers, catering, lighting, sound or other equipment. A spare socket is not spare electrical capacity.

3.3 Prove each inflatable after generator supply is established

Inflate with no users aboard and complete the RI-SOP-001 setup and release checks. Confirm normal blower operation, correct shape, anchorage and safety matting, then measure and record internal pressure using the unit's specified manometer method and limits. Where the generator has replaced another supply or followed a shutdown, do not readmit users until the unit is fully reinflated and the required pressure, restraint and operating checks have been repeated.

3.4 Confirm voltage/output behaviour by competent means

If the generator or connected equipment shows unstable speed, dimming, abnormal blower sound, repeated protective-device operation or other signs of poor supply, stop use. Do not diagnose a live temporary system by trial and error. Any electrical measurements beyond normal user controls must be carried out by a person competent for that test with suitable instruments and procedures.

3.5 Establish the operating watch

The RI operator remains responsible for the generator throughout public operation. Ensure the person supervising the inflatables knows how to summon the generator operator and what loss-of-power response to use. Keep the generator, fuel, exhaust path, connections and cable route observable. If one person cannot safely supervise both the inflatable and generator duties, provide separate competent cover; never trade active inflatable supervision for generator monitoring.

RELEASE GATE - before admitting users

Generator stable and normal; no leaks or fume concern; electrical system/protection accepted; only authorised loads connected; cable/public controls intact; inflatable setup released under RI-SOP-001; pressure recorded within limit; generator and inflatable supervision arrangements both workable. No unresolved trip, warning, defect or competence gap means no use.

4. Operate, refuel, stop and respond

RESPONSIBLE: TRAINED RI OPERATOR / EVENT LEAD | STOP FIRST, INVESTIGATE SECOND

4.1 Monitor continuously during public operation

Keep unauthorised people outside the generator area. Watch for fuel or oil leakage, abnormal noise/smoke/smell, overheating, vibration, damaged covers, blocked ventilation, exhaust drift, cable damage, wet connections, overload indications and changes in blower performance. Maintain fuel level within the supplier's operating limits. Recheck after any relocation, interruption or material weather change before normal use resumes.

4.2 Refuelling - avoid during operation where practicable

If refuelling becomes necessary, stop admission and clear users from the inflatables, then shut the generator down using the normal procedure. Allow it to cool for the period/instructions specified by the supplier. Keep smoking, naked flames and ignition sources away. Refuel using the correct fuel and approved container without overfilling.

Clean/manage any spill safely and do not restart until vapour/spill and ignition risks have been controlled. Never refuel a running or hot generator unless the manufacturer's specifically engineered system and competent risk assessment allow it.

4.3 Rain, flooding, wind and severe weather

Do not allow water to threaten the generator, distribution or connections. Stop if heavy rain, flooding, loss of ground stability or other conditions make the electrical installation unsafe.

Do not throw a sheet or improvised cover over a running generator. Follow RI weather controls for the inflatables independently: a safe generator does not make an unsafe inflatable hire acceptable.

4.4 Unexpected shutdown, overload or protective-device trip

Treat any loss of generator power as an inflatable stop condition. Stop entry and assist users off using the unit-specific safe escape route. Isolate the load where safe. Check only obvious user-level causes allowed by the supplier instructions; do not repeatedly reset a breaker/RCD or restart after a trip without establishing why it operated. Electrical/fuel faults, repeated trips, burning smell, damaged cables or unexplained shutdown require the system to remain out of service until competent investigation.

4.5 Fire, carbon monoxide, electric shock or fuel emergency

Raise the alarm, stop public access and call 999 for fire, serious injury, suspected carbon-monoxide exposure or immediate danger. Move people to fresh air for suspected fumes without entering a dangerous atmosphere. Isolate power or fuel only if this can be done safely. Do not touch a person who may still be in contact with live electricity until the source has been safely isolated. Use a fire extinguisher only if trained, the fire is small, escape is secure and the correct extinguisher is immediately available; people and evacuation take priority over equipment.

STOP TRIGGERS - operation must cease

Fuel leak or spill not controlled; exhaust fumes affecting people or drifting into openings/intakes; fire/smoke/burning smell; electric shock; repeated protective-device operation; damaged plug/cable/distribution; standing water threatening electrics; unstable generator/output; unsafe public access; cooling/exhaust obstruction; inadequate trained cover; or any condition outside supplier instructions. Quarantine suspect equipment and escalate under RI emergency/incident procedures.

5. Shut down, return and control the document

RESPONSIBLE: RI GENERATOR OPERATOR / EVENT LEAD / OWNER

5.1 Planned shutdown and disconnection

Stop admission and confirm all inflatable users are clear. Follow the generator/supplier sequence for unloading, cool-down and shutdown; switch off before disconnecting unless the manufacturer specifies another safe sequence. Isolate plugs by the plug body, not the cable. Coil and inspect leads only when safe, and keep hot generator/exhaust parts away from the public while cooling. Do not remove barriers until heat, fuel and electrical hazards have ended.

5.2 Handling, transport and return

Allow adequate cooling before handling or loading. Use suitable handling aids and sufficient trained help for the generator weight. Secure the generator and fuel containers against movement in transport and follow supplier instructions for fuel valves/caps and carriage. Return hired equipment as agreed and report any trip, shutdown, leak, damage, unusual noise, overheating, smoke or suspected electrical fault rather than allowing the next hirer to discover it.

5.3 Records, defects and learning

Record the generator identity/hire supplier, intended load, relevant supplier instructions, pre-use condition, site and exclusion decisions, connection/protective arrangement confirmation, any user-test required by the equipment, faults/trips, refuelling, shutdowns and incidents in the existing event/equipment records. Quarantine Rugby Inflatables cables/adapters with defects. Retain supplier/competent-person information where it forms part of the safe-system decision. No duplicate checklist pages are created by this SOP.

5.4 Roles and responsibilities

RI event lead: selects the generator arrangement, confirms competence/resources and has authority to stop operation. Trained RI generator operator: performs permitted checks, positioning, start/stop, monitoring and refuelling within supplier instructions. RI inflatable supervisor/attendant: controls users and stops use immediately on power loss or generator-related concern. Hire company / competent electrical person: provides or verifies technical information outside RI operator competence, including supply, earthing/protection and faults. Event organiser/venue: provides accurate site information, respects the exclusion area and prevents unauthorised third-party connections.

Related controlled documents

RI-RA-004 - Generator Risk Assessment; RI-SOP-001 - Method of Work: Inflatable Setup & Collection; RI-SOP-002 - Supervision & Safe Operation of Inflatables; RI-RA-005 - Transportation of Inflatables/Equipment; RI-EP-001 - Emergency Procedures; RI-COMP-002 - Electrical Safety / Electricity at Work; applicable vehicle, incident-reporting and equipment-quarantine procedures; generator hire-company instructions and the actual equipment manuals.

Technical sources and review watch - checked 01 October 2026 HSE, Electrical safety at events: selection, generator/earthing planning, public segregation, weather protection and cable routing (hse.gov.uk/event-safety/electrical-safety.htm). HSE HSR25, Electricity at Work Regulations guidance: portable generating sets are electrical systems. HSE, Work using electrically powered equipment: safe supply, RCDs as secondary protection and fault response. HSE, Carbon monoxide: locate engine-driven generators outside so fumes disperse and cannot drift into openings. HSE DSEAR/petrol guidance: assess and minimise flammable-fuel risks. BSI: BS 7909:2023+A1:2024 is current for temporary electrical systems at entertainment/related events. IET/BSI: BS 7671:2018+A4:2026 published; A3:2024 remains valid only during the transition ending 15 October 2026. Monitor updates and use competent electrical advice for any system-design issue.

Revision 2.2: expands the supplied v2.1 two-page procedure into a sequential 2026-27 controlled method; adds explicit competence boundaries, temporary-supply planning, current BS 7909/BS 7671 references, earthing/RCD safeguards, stronger CO/fuel controls, release/stop gates, fault escalation and controlled records. Approved revision supersedes v2.1.