

OPERATION OF THE PORTABLE GENERATOR

Purpose This Air Quality Group procedure describes the safe operation of the trailer-mounted diesel-powered generator.

Scope This procedure applies to any group member assigned to move, connect, or operate the trailer-mounted generator. This procedure does not cover re-fueling.

In this procedure This procedure addresses the following major topics:

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Hazard Control Plan The hazard evaluation associated with this work is documented in Attachment 1: Initial risk = **medium**. Residual risk = **low**. Work permits required: none. First authorization review date is one year from group leader signature below; subsequent authorizations are on file in group office.

Signatures

Prepared by: _____ Jake Martinez, ESH-17	Date: <u>11/21/00</u>
Approved by: _____ Jean Dewart, Air Monitoring Project Leader	Date: <u>11/16/00</u>
Approved by: _____ Terry Morgan, QA Officer	Date: <u>11/16/00</u>
Work authorized by: _____ Doug Stavert, ESH-17 Group Leader	Date: <u>11/16/00</u>

02/09/04

CONTROLLED DOCUMENT

This copy is uncontrolled if no signatures are present or if the copy number stamp is black. Users are responsible for ensuring they work to the latest approved revision.

General information about this procedure

Attachments This procedure has the following attachments:

Number	Attachment Title	No. of pages
1	Hazard Control Plan	2

History of revision This table lists the revision history and effective dates of this procedure.

Revision	Date	Description Of Changes
0	11/27/00	New document.

Who requires training to this procedure? The following personnel require training before implementing this procedure:

- Any group member assigned to operate generator

Training method The training method for this procedure is “**self-study**” (reading) and is documented in accordance with the procedure for training (ESH-17-024).

Prerequisites In addition to training to this procedure, the following training is also required prior to performing this procedure:

- First Aid
- Cardiopulmonary Resuscitation (CPR)

General information, continued

Definitions specific to this procedure

None.

References

The following documents are referenced in this procedure:

- ESH-17-024, "Personnel Training"
 - Operating Manual for generator
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Note

Actions specified within this procedure, unless preceded with "should" or "may," are to be considered mandatory guidance (i.e., "shall").

Towing the generator

Towing vehicle

Ensure the vehicle you plan to use to tow the trailer is rated to tow the weight of the generator (2700 pounds). Ensure it has a proper trailer hitch and the correct trailer ball (2 5/16"). Always use the safety chains; cross them to attach to hitch.

Hooking and unhooking trailer

Chock **BOTH** trailer wheels before raising the trailer tongue to hook or unhook the trailer from the vehicle. Keep hands and fingers clear and watch for sudden movement. Always use crank tongue lift to raise and lower tongue; remember to swing it to horizontal before towing.

WARNING: As the hitch comes off the ball, the trailer may move. Stand away a foot or more and be ready to move.

Towing

Use extra caution when towing: assume longer stopping distances, use mirrors when changing lanes, be aware of the extra width and length of the vehicle.

Connecting and operating the generator

Read operating manual

This procedure is not a substitute or replacement for the instructions and information contained in the generator operating manual. **Read the manual** for all operating instructions.

Starting the generator

Read the manual and the labels on the generator.

Check the engine vital fluids: engine oil, coolant, and fuel.

Follow the manufacturer's starting sequence. Allow the cold engine to idle for a few minutes before setting the throttle lever to "Run."

Connecting power from generator

Do not attempt to connect power cables to the terminals on the generator. Contact a qualified electrician to connect to these terminals. Normally, only the provided outlets on the generator will be used.

Turn off the breaker to the outlets before connecting cords. Turn on the breaker to energize the power cord.

Periodically test the GFCI breaker on the generator (can only be tested when the generator is running and the breaker is on).

Adjusting output voltage

A dial on the control panel adjusts the voltage output of the generator. The meter reads the voltage of the 220V circuit. **Adjust the dial so the voltage reads 240V**; this will provide 120V to the 120V outlets.

Shutting down the generator

Turn off the breaker to the outlets and set the throttle lever to "Idle." **Allow the engine to idle for about 5 minutes before turning the engine off** with the key.

Caution: Never just turn off the ignition key unless there is an emergency.

Connecting and operating the generator, continued

Fueling

Contact JCNNM to refuel the generator. Establish an appropriate refueling schedule with them (usually 72 hours).

NOTE: the trailer unit contains two fuel tanks; ensure JCNNM knows to fill both.

If a fuel spill is noted shut down the generator if it is safe to do so. If the generator is not running, do not start it. Contact the LANL EOC and the Los Alamos Fire Department. Contact JCNNM for cleanup and repairs.

Maintenance of the generator

Oil changes Record the engine hours from the tachometer when oil changes are performed. Keep a note attached to the control panel to record oil change hours.

The engine requires an oil change after every 200-250 hours of operation (this is every 8 to 10 days of continuous operation). Contact JCNNM to establish regular oil changes when the generator is being used continuously.

Other maintenance Consult the engine-operating manual to determine maintenance intervals. Record when maintenance operations are performed. Plan ahead for required maintenance and contact JCNNM for all maintenance work.

Records resulting from this procedure

Records

No formal records are generated as a result of this procedure. Data on engine oil changes and the performance of regular maintenance tasks are noted on appropriate logs:

- date and engine hours when oil changes and other maintenance are performed

[Click here to record “self-study” training to this procedure.](#)



HAZARD CONTROL PLAN

1. The work to be performed is described in this procedure.

“Operation of the Portable Generator”

2. Describe potential hazards associated with the work (use continuation page if needed).

Hooking and unhooking trailer -- Pinched fingers, smashed feet, or hit by shifting trailer.
Towing generator -- driving hazards associated with pulling a trailer: backing up, turning, trailer coming loose while driving.
Plugging in power cords -- electrical shocks.

3. For each hazard, list the likelihood and severity, and the resulting initial risk level (before any work controls are applied, as determined according to LIR300-00-01, section 7.2)

Hooking and unhooking trailer -- occasional / critical = medium.
Towing generator -- occasional / moderate = low.
Plugging in power cords -- improbable / moderate = minimal.

Overall *initial* risk: Minimal Low Medium High

4. Applicable Laboratory, facility, or activity operational requirements directly related to the work:

None List: Work Permits required? No List:

LIR-402-706-01 “Personnel Dosimetry”

LIR-402-718-01 “Radiological Training”

Access Control Requirements for TA-15, TA-16, TA-49, TA-54

29CFR1926.500, Subpart M, Section 502, “Fall protection” See continuation page.

HAZARD CONTROL PLAN, continued

5. Describe how the hazards listed above will be mitigated (e.g., safety equipment, administrative controls, etc.):

Hooking and unhooking trailer -- The trailer hitch and the truck receiver must be properly matched and engaged. The trailer safety chain must be attached to the vehicle. Use the trailer tongue jack for raising and lowering the trailer tongue. Keep hands and fingers clear and watch for sudden movement. Chock BOTH trailer wheels for any hooking and unhooking operations.

Towing generator -- Attach trailer safety chains to the vehicle. Use extra caution while towing the trailer; watch the mirrors when turning; be aware of the extra width and length of the vehicle.

Stopping distances are significantly increased.

Plugging in power cords -- Use GFCI cord at generator end if generator is not so equipped. Ensure cords are unplugged before starting generator. Ensure the breaker at the generator is OFF before plugging in any electrical cords; then turn on breaker to energize the cord.

6. Knowledge, skills, abilities, and training necessary to safely perform this work (check one or both):



Group-level orientation (per ESH-17-032) and training to this procedure.



Other → See training prerequisites on procedure page 3. Any additional describe here:

7. Any wastes and/or residual materials? (check one) None List:

8. Considering the administrative and engineering controls to be used, the *residual* risk level (as determined according to LIR300-00-01, section 7.3.3) is (check one):



Minimal



Low



Medium (requires approval by Division Director)

9. Emergency actions to take in event of control failures or abnormal operation (check one):



None



List:

For injuries, administer first aid and transport to hospital.

If a fuel spill is noted: If the generator is not running, do not start it. If the generator is running, move a safe distance away. In both situations, contact the LANL EOC and the Los Alamos Fire Department.

Signature of preparer of this HCP: This HCP was prepared by a knowledgeable individual and reviewed in accordance with requirements in LIR 300-00-01 and LIR 300-00-02.

Preparer(s) signature(s)

Name(s) (print)

/Position

Date

Signature by group leader on procedure title page signifies authorization to perform work for personnel properly trained to this procedure. This authorization will be renewed annually and documented in ESH-17 records.

Controlled copies are considered authorized. Work will be performed to controlled copies only. This plan and procedure will be revised according to ESH-17-022 and distributed according to ESH-17-030.