

Godkjent av		Ansvarlig	Lars Tore Sjøstad
Dato	27.02.2026	Versjon	1

*This procedure describes the use of Plug's low-voltage shore power facility at **Svolvær – Dampskipskaia**.*

It serves as a guide for the ship's crew to ensure safe and correct connection and disconnection according to IEC 80005-3.

Content of the Procedure

1. General procedure for connecting and disconnecting ships (IEC 80005-3)
2. Overview of the Svolvær LV shore power facility
3. How to operate the PowerCon HMI and start the supply
4. Contact information

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1. General Procedure According to IEC 80005-3

Use of Plug's shore power systems must comply with **IEC 80005-3**, the international standard for low-voltage shore connection (LVSC).

The ship is responsible for verifying compatibility and ensuring correct settings for voltage, frequency, and phase sequence before connection.

General operating procedures

A low voltage shore connection system operation, on shore and on board, shall include procedures shown in Figure F.1.

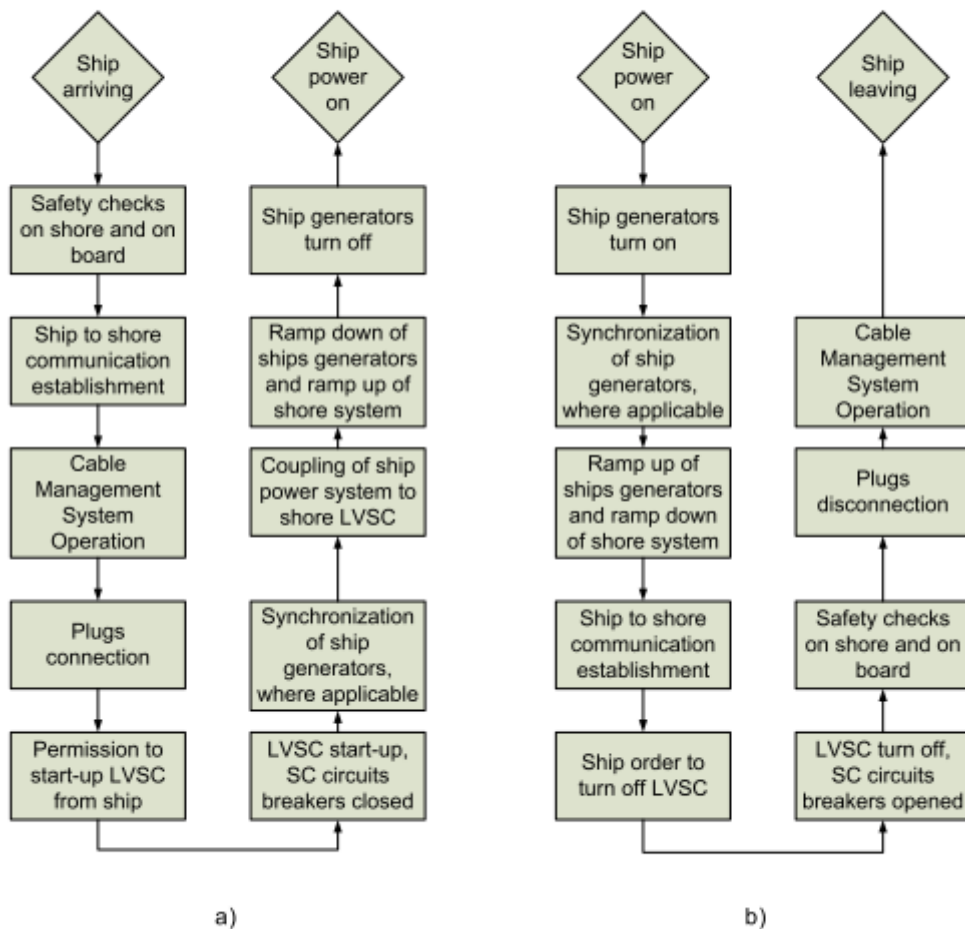


Figure F.1 – LVSC general operating procedures for connection a) and disconnection b)

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2. Svolvær LV Shore Power Facility

The Svolvær shore-power installation consists of:

- One shore connection cabinet
- Six outlets**, arranged as three pairs
- Three loads:**
 - **Load 1:** Connectors 1 & 2
 - **Load 2:** Connectors 3 & 4
 - **Load 3:** Connectors 5 & 6
- Each connector can deliver up to **350 A**
- Supply capacity: **2.5 MVA**, supporting **400 V / 440 V / 690 V**, 50/60 Hz

Although outlets are grouped in pairs, the system allows:

All six connectors to be supplied from Load 1 if needed,

or divided between Load 1 and Load 2 (and Load 3) to accommodate multiple vessels.

To connect the vessel, open the lid on the desired outlet(s) and insert the plug. Power will not be delivered until the system is configured and started through the HMI.

A yellow emergency-stop button is installed on the cabinet; pressing it will immediately disconnect power from all outlets.

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3. Starting the PowerCon Shore Power System

3.1 Login Screen

The shore-side HMI touch panel is located on the connection cabinet. A valid username and password are required.

3.2 HMI Configuration for Svolvær

Load 1: Off
Free

Load 2: Off
Free

Load 3: Off
Free

Vessel name

IMO number

Start

Voltage Select

Frequency Select

Stop

Power outlets

1

2

3

4

5

6

Ground supervision Enabled

Clear

Phase order Select

Synchronisation method Select

Drop voltage

+
0.0 %
-

Drop frequency

+
0.0 %
-

Voltage adjust

+
0.0 %
-

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The HMI allows configuration of all necessary parameters before starting the shore power system:

- Voltage selection
- Frequency selection
- Ground Fault Monitoring (GFM)
- Number of cables in use
- Phase sequence
- Synchronization method (CCW/CW)
- Load selection (Load 1 / Load 2 / Load 3)

Ground Fault Monitoring (GFM)

Normally set to **Disabled** when the vessel has its own ground-fault monitoring system.

If both ship and shore have GFM active, the systems may interfere and cause **unnecessary trips or blackouts**.

Load Selection (Important for Svolvær)

Select the load based on which outlets are used:

- Connectors 1–2 → Load 1**
- Connectors 3–4 → Load 2**
- Connectors 5–6 → Load 3**

Most vessels will use **Load 1** or **Load 2**.

However:

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**The system is designed so that all six connectors can be supplied from Load 1 if required,
or the connectors may be divided across loads to serve more than one vessel.**

Synchronization Method

Standard method is **A1**, where:

- The vessel synchronizes with the shore supply
- The shore system remains the reference

3.3 Starting the Supply

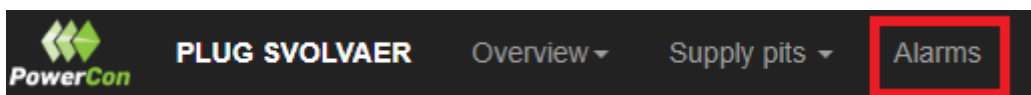
Once all parameters are correctly set:

1. Verify pilot circuits in use show OK
2. When the *Start* button lights green, the system is ready
3. Press **Start**
4. Monitor current per cable on the HMI



If the start button does not turn green:

- A triangle indicates a **pilot circuit fault**
 - (first triangle = shore side, second = ship side)
- Active alarms must be acknowledged before starting



If the alarm does not disappear, it is still active. Contact authorized personnel to clear the alarm.

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4. Contact Information

For issues or questions related to the Svolvær shore power system:

Harbor Master's Office Svolvær

Phone: +47 760 67 990

Plug Operations

Phone: +47 475 14 999

Email: Operations@plugport.no