



25 September 2025
15:00 (CET) - Online

UIC WEBINAR

Sharing Railway Response to the Iberian Power Outage: Impact on Railway Systems and lessons learned

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Title: Black Out 28 of April 2025 in Iberian Península. Impact in FGC



INTERNATIONAL UNION
OF RAILWAYS

Black Out 28 of April 2025 in Iberian Península

1. Background

On April 28, 2025, at 12:34 PM, there was a loss of company voltage (affecting the Iberian Peninsula) which caused the suspension of the railway service on all of Ferrocarrils de la Generalitat of Catalonia lines and services, due to loss of overhead line voltage, signaling systems, low voltage, and communications.

2. Scope

- Metropolitan lines: 46 trains in service stopped
 - Barcelona-Vallès: 31 trains stopped – 6 on the way
 - Llobregat-Anoia: 15 trains stopped – 3 on the way
- Montserrat Rack Railway: All trains stopped on stations
- Núria Rack Railway: 1 train stopped on the way
- Lleida-La Pobla de Segur: (diesel line) 2 trains cancelled due to lack of communication



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3. Chronology: issue management on metropolitan lines.

- 12:34 – Generalized interruption of electricity supply
- 12:42 – Evacuation order for trains and stations was carried out in a structured and secure manner. In certain instances, operations were supported by the Fire Brigade and/or the Catalan Police, ensuring the safety and coordination of all involved
- 13:00 – review of the elevators at all stations was carried out to ensure no customers remained inside. Only one rescue was necessary, at St. Josep station, performed by the Catalan Fire Brigade
- 13:42 – All stations and 43 trains evacuated
- 14:52 – Slow and progressive recovery of voltage. Insufficient power supply
- 15:27 (Lleida La Pobla) – railway service between Balaguer and La Pobla de Segur (diesel traction) was restored.
- 18:04 (Barcelona Vallès) – Voltage recovery on the catenary section between Peu del Funicular and Les Planes
- 18:48 (Barcelona Vallès) – Voltage recovery on the catenary section between Pl. Catalunya and Sant Cugat



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- 21:05 (Barcelona Vallès) – Railway service restored between Pl. Catalunya and St. Cugat Centre. L6 and L7 operating on normal schedule. S1 and S2 with combined frequency of one train every 10 minutes, limited to St. Cugat Centre from Plaça Catalonia.
- 21:36 (Llobregat Anoia) – Railway service recovery between Pl. Espanya and Quatre Camins. L8 operating on normal schedule with trains running every 10 minutes
- 22:38 (Barcelona Vallès) – Service recovery on the Terrassa and Reina Elisenda branches
- 23:25 (Barcelona Vallès) – Recovery of the Sabadell branch. Barcelona – Vallès line normalized
- 23:35 (Llobregat Anoia) – Gradual extension of the operational section up to Olesa. Service between Olesa and Manresa, and the Igualada branch, could not be restored due to: Lack of catenary voltage on the Igualada branch. Multiple interlocking failures affecting 28 track circuit modules. Breakdown at Vallbona d'Anoia substation
- 04:55 29 April (Llobregat Anoia) – Llobregat – Anoia line normalized



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4. Crisis management

- Establishment of the crisis committee to manage the Level 3 incident of the self protection plans, with activation of the PROCICAT alert by CECAT (Emergency coordination center of Catalonia)
- Evacuation of trains and underground stations.
- Rescue of users in elevators.
- Fluid communication with CECAT and 112.
- Ensure the electrical supply to the electronic groups of the integrated command center
- Participation in CECAT's technical committees, with the participation of the operational teams (Police, Firefighters, Civil Protection), from electricity companies and distributors, and emergency management specialists.
- Coordination of the different technical areas of FGC to ensure the restart of the facilities and the restoration of rail service.
- Communicate with different Tourism and Mountains business areas.



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4. Improvement Actions

Following the lessons learned on April 28, FGC is working on several improvement measures covering organizational aspects, rolling stock, infrastructure, and systems to respond to similar situations, ensuring the following five objectives:

- Protect people, both customers and workers, whether in the field of mobility or tourism
- Coordinate the tasks of workers
- Inform customers about available alternatives
- Protect assets
- Speed up service recovery

4.1 Organization in critical site or management island

Establish a first level of coordination and supervision of the different FGC activities, for cases in which a large-scale incident prevents us from providing all or most services due to lack of power or communications:

- Structure facilities and services into critical sites or management islands that maintain electrical power supply with an adequate level of autonomy (48h according to Government Order of 13/05/2025), and secure voice and data communications (via satellite).
 - Rubí Operations Centre (Integrated Command Centre, Workshop, Technical Office and Barcelona Vallès maintenance base) (Critical infrastructure)
 - Martorell Operations Centre (Workshop and Llobregat Anoia maintenance base)
 - NEO (General Management, Presidency, and Corporate Areas) (Critical infrastructure)
 - Pl. Catalunya (Critical infrastructure)
 - Monistrol Vila (Montserrat Rack Railway)
 - Balaguer (Lleida – La Pobla)
 - Integrated Tourism Command Centre (Camprodon)
 - Management centres of the new business areas, R-Airport, Rodalies Lleida (Pla de Vilanova), and Tarragona Tram

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4.2 System adaptation

The following actions will be carried out to ensure the full operability of critical sites:

- Connect the emergency lighting systems, electronic access control systems, and fire detection and extinguishing systems in workshop emergencies to critical circuits, and power them with generator sets.
- Provide public address systems in critical work centers (Rubí Operations Centre, NEO, Martorell Operations Centre): unified messaging and facilitation of the activity de-escalation process.

4.3 Batteries and Generator Sets

- Installation of dual battery or uninterrupted power supply equipment in all substations and centers where is necessary, in order to increase the autonomy of the facilities in the event of a power outage.

4.4 Communications

- Ensure satellite access and the necessary terminals at each critical site as an alternative transmission method to maintain connectivity. Assess the most suitable technological solution for indoor environments and tunnels.
- Ensure the energy autonomy level of the TETRA communication system by planning the installation of batteries and redundant power supply systems to increase the system's autonomy.





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