

Approval Process for Maglev Projects in Germany

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ABSTRACT: The prerequisite for a maglev line to enter service are different approvals given by the Federal Railway Authority (EBA). In practice, the approval for construction on the basis of the Maglev System Planning Law (MBPIG) and the approval for entering service on the basis of Art. 4 of Maglev System Construction and Operation Ordinance (MbBO) are of prime importance because these processes have the greatest influence and depend, at least in parts, on each other. The central element of the process is the approval of the safety concept according to Art. 23 of MbBO because the measures described in the safety concept are relevant both for the design of the line and the operation and maintenance rules.

1 INTRODUCTION

As an employee of an administrative authority, I can't deny that partners in industry and railway operators often moan about bureaucratic administrative procedures.

These procedures constitute the requirements of the Federal Republic of Germany regarding law and order and are therefore necessary. But these procedures can be organized transparent and effective if all involved parties dare to tackle the planning in close coordination.

The understanding for the actions of an administrative authority emerges often by-and-by through consideration that legal requirements have to be complied.

2 LEGAL PRINCIPALS

In the mid 1990's the following special laws and regulations were enacted for maglev systems in Germany:

- General Maglev System Law (Allgemeines Magnetschwebbahngesetz – AMbG)
- Maglev System Planning Law (Magnetschwebbahn-Planungsgesetz – MBPIG)
- Maglev System Ordinance with
 - Art. 1 Maglev System Construction and Operation Ordinance (MbBO)

- Art. 2 Maglev System Noise Protection Ordinance

The Federal Railway Authority, as supervisory and licensing body for maglev systems, is only responsible for public maglev systems. Non-public systems and test facilities are not concerned.

3 LICENSING PROCEDURE

Before a maglev system is constructed and allowed to enter commercial service, several licenses and approvals are required.

3.1 Project Approval Procedure

Maglev system routes including operation facilities may only be built and altered if the project plan has been granted project approval (Art. 1 MBPIG).

In the project approval, all public law relations touched by the plan are to be regulated between the project investor, the authorities of public interests as well as the affected persons.

The procedures are generally the same for Maglev and rail-system so details are not specified within this paper.

3.2 Commissioning a maglev system route

The following licenses and approvals must be obtained before operation may be started:

- Operating license (Art. 5 Para. 1 AMbG)
- Operating permit (Art. 4 Para. 1 MbBO)

All the requirements named in the following apply to the maglev company respectively operator. This might sound trivial initially, but it is of considerable importance in practice.

3.2.1 Operating license

At the appropriate time, the maglev company must apply to the EBA for an operating license. The operating license is granted subject to the preconditions named in Art. 5 AMbG.

- Reliability of the company and the persons appointed to manage the business,
- Financial capability of the company and
- Knowledge of the operator and the persons appointed to manage the business.

3.2.2 Operating permit

Apart from the plan approval procedure, the issue of the operating permit is the central part of the approvals procedure. The operating permit, according to Art. 4 MbBO, is explicitly bound to five preconditions:

- Acceptance of the operations facilities and vehicles according to Art. 6 MbBO
- Approval of the safety concept to Art. 23 MbBO
- Approval of the principles and procedures of the maintenance programs
- Existence of an operations manual according to Art. 24 MbBO and
- Proof of the system safety

The Maglev undertaking must apply for an operating permit for a specific maglev system route. Due to its major practical significance, the individual items are covered in detail in the following.

3.2.3.1 Acceptance of vehicles and facilities

Art. 6 MbBO explicitly provides for the same procedure for both operations facilities and vehicles.

The acceptance according to Art. 6 MbBO is product-related and not manufacturer-related and includes the public law permit to use the approved object in a particular way for a specific purpose.

Acceptances of operations facilities and vehicles are fundamentally not route-specific and are therefore mainly independent of route-specific approval procedures.

Nevertheless, the verification can vary in individual cases depending on the specific use (e.g. assumptions made for wind, snow and earthquake loads).

Art. 6 MbBO gives clear and uniform procedural rules for all system components and provides the following provisions for the acceptance of operations facilities and vehicles:

- The standard case is the “acceptance” of an individual operations facility or an individual vehicle. This acceptance of the “first” operations facility or the “first” vehicle is always necessary.
- The acceptance of further identical operations facilities or vehicles can be replaced by a conformance certificate or a declaration of conformity.
- The acceptance of further operations facilities or vehicles, which are manufactured with different designs but according to a certain system, can be replaced by the type approval.

3.2.3.2 Approval of the safety concept

According to Art. 23 Para. 2 MbBO, the safety concept must name all of the identifiable risks. The safety risks are to be described in the safety concept with respect to their type, frequency and effect (qualitatively and quantitatively). The determination and assessment on the safety risks are to be presented in the safety concept.

The structural, technical, operational and organizational safety measures deduced from the analysis of the safety risks described have to be specified and presented in the safety concept.

As a result, the content of the safety concept is mainly route-specific and the safety concept therefore has to refer to a specific maglev system route.

3.2.3.3 Approval of the maintenance programs

The “principles and procedures of the creation of maintenance programs” are to be drawn up by the maglev company and approved by the Federal Railway Authority (Art. 8 Para. 2 MbBO).

The maintenance is – like for all technical systems - very important for the preservation of the system safety. Therefore, the maglev company is bound to carry out scheduled maintenance of the operations facilities and vehicles (Art. 8 Para. 1 MbBO). In accordance with Art. 8 Para. 2 MbBO, the maglev company must draw up a maintenance program conforming to the approved “principles and process for the creation of the maintenance program” in time.

The maintenance program itself need not be approved by the Federal Railway Authority in a formal administrative procedure. The Federal Railway Authority can require that it be submitted and checked within the scope of its regulatory capacity. Even if the maglev company assigns the tasks to third parties, it remains responsible for the maintenance.

3.2.3.4 Preparation of an operations manual

Before an operating permit according to Art. 4 MbBO can be granted, the maglev company must prepare an operations manual and submit it to the Federal Railway Authority on request. The Federal Railway Authority can demand changes and supplements. They are limited to safety-relevant matters. Even if the MbBO does not explicitly provide for the “approval” of the operations manual, it does assign a certain joint responsibility to the Federal Railway Authority.

3.2.3.5 Proof of the system safety

The proof of system safety takes place at the end of the approval process. Administrative regulations on how this proof is to be provided still have to be established. From today’s point of view, the proof of system safety should meet the regulations of phase 10 of EN 50126 as close as possible.

3.2.4 Confirmation of the appointment of an operations manager and his deputy

The appointment of an operations manager and his deputy must be confirmed by the Federal Railway Authority. Both of them must have the necessary expert knowledge (Art. 27 Para. 5 MbBO), be reliable and have professional experience.

4 THE ROLE OF THE SAFETY CONCEPT

Even if from the legal point of view, the safety concept has equal status to the other preconditions for the operating permit, there can’t be any doubt about the central role of the safety concept for the entire planning process and for the approval procedure.

I want to demonstrate this with the following example:

In public transport systems, the operational staff usually has important tasks to ensure the safety of the passengers in particular in cases of emergency. So the Maglev company must decide very early, whether there shall be operational staff in the train or not. This decision has impact on the entire planning process, in particular for the design of the evacuation and rescue equipment of the vehicle. In turn, the design of this equipment has remarkable impacts on the design of the operations facilities, such as the profile of the route and the alignment itself.

It is trivial: if you don’t know the evacuation and rescue concept, you don’t know the infrastructure you need. If you don’t know the infrastructure you need, you can’t apply for project approval.

This is only one example for the dependence between safety concept and plan approval procedure.

So the safety concept according to Art. 23 MbBO is – however this is not fixed in the legal sense – an essential precondition for the plan approval.

The safety concept also sets requirements on the design of other operations facilities and the vehicles.

5 CONCLUSION

The approval procedure for a new transport system using Maglev technology is without any doubt, very complex for all involved parties. This is valid all the more if there are special legal prerequisites like the requirement for a safety concept.

Therefore it is an essential precondition that all project partners cooperate with the approval authority to avoid mistakes in the process. From my point of view, EN 50126 is a very good guideline for the planning process of a Maglev project.

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