



DESIGN MANAGEMENT OF ROLLING STOCK

PURPOSE AND SCOPE

The purpose of this Procedure is to advise Laing O'Rourke personnel involved in the Construction of rolling stock that is to be constructed specifically to Laing O'Rourke's specifications (above the Original Equipment Manufacturers (OEM) standard specification), and the need to manage the manufacture of the rolling stock. This may be undertaken by Select (or by third parties contracted by Select to act on their behalf).

Whilst the design management process may be generic in many areas there could be subtle differences dependent on the criteria set by the respective Rail Infrastructure Manager.

1.0 PROCEDURES

Design management processes will be developed for rolling stock that fall into this elements scope. This is to enable the management of the design to be applied prior to the purchase, commissioning / recommissioning process. This will be undertaken by a third party contracted by Select and will include (but not be limited to) the following:

- Identification of the responsibility for each design or development activity
- Safety risk review at both the design input and design output stages taking into account reliability and maintainability
- Assignment of design verification and validation functions
- Control of design changes
- Ensuring construction is in accordance with design or design changes
- For an Inspection and Test Plan to be developed and carried out in accordance with **Element 17A Commissioning of Rolling Stock**.

The Design management will include the verification and validation of all stages of the design of new, modified or repaired rolling stock will be undertaken as follows:

- Verification of the design specification and test plan as well as the detailed design in terms of accuracy and conformance to client requests, safety requirements, standards and regulatory requirements
- Validation that the detailed design conforms to the required safety standards and rail infrastructure managers requirements
- The verification and validation performance undertaken with a level of independence and taking into account actions from the Management of Change (MoC) process e.g. introduction of new systems
- Completion of the Inspection and Test Plan to the satisfaction of Laing O'Rourke.

Select will arrange for the production of a detailed design specification document, outlining performance requirements and standards for each item of rolling stock to be procured, or modification carried out, ensuring that the safety and integrity of the asset is managed in line with the **Element 19A Asset Management of Rolling Stock**.



Consideration needs to be given to:

- Ensuring that appropriate standards are used
- Specific working requirements e.g. working with adjacent line open to traffic, locking requirements
- ONRSR regulations, RIM rules and procedures
- The Laing O'Rourke's Notice of Accreditation relevant to the end use locations
- Workforce consultation and human factors
- Supplier approval and acceptance of item of rolling stock
- Maintenance requirements - Select will ensure that the Monitoring, Repair and Maintenance Procedure and associated processes are updated to include the requirements of the new or modified item of Rolling Stock
- Interoperability between other systems, process, or products
- Disposal at the end of economic life any relevant information and recommended methods of disposal
- Responsibilities with the design e.g., Risk reviews, developing testing plans etc.

If the rolling stock or modification is the first of its type, or if it involves significant changes to an existing approved item of rolling stock, a formal Hazard Identification will be required in accordance with **Element 11 Management of Change**.

During the analysis of the design, risks regarding the use and maintenance of the rolling stock must be identified and hazards eliminated SFAIRP. To do so, consultation with proposed operators and maintenance workers must be involved.

Arising from this consultation, a complete Original Equipment Manufacturer maintenance strategy must be produced aligned to legislated and Standard requirements.

Select will ensure that all design outputs are approved by a suitably qualified engineer for the scope of work performed before the design (or individual part of the design) is released for construction.

2.0 LEGISLATION, GUIDES AND STANDARDS

- Rail Safety National Law
- ONRSR Guideline Preparation of a Safety Management System
- RISSB Rolling Stock Standards; e.g. AS 7502 - Road Rail Vehicles
- AS-7472 2018 Railway operations management of change
- **Element 11 Management of Change (MoC)**