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On the recommendation concerned with the Railway accident with casualty
in Shin-Sugita station, Yokohama Seaside Line Co. Ltd.

The direct cause of this accident was the breakage of the electric cable in the forward and backward switching circuit of the train, which resulted in start of running as the direction of the driving motors was in the inbound direction toward the terminal end of the track. It is probable that the situation, that the confirmation and the coordination of the designing organizations, etc., the extraction of the safety factors and the verification of the safety, had not been implemented sufficiently in the designing and manufacturing process of the vehicles, was the background of the situation that the dangerous matter in the occurrence of such troubles could not be excluded.

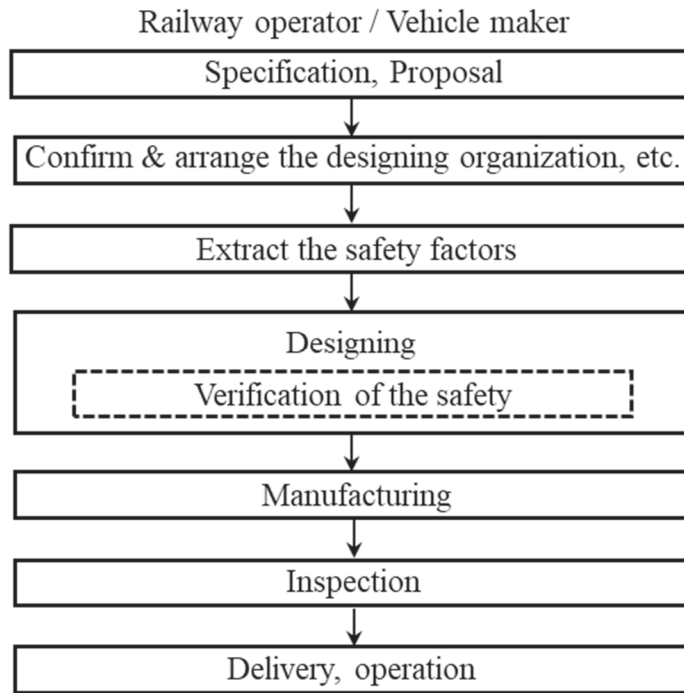
When designing, manufacturing or remodeling of the automatic operation system, etc., of the train, which the driver nor the staff to operate the emergency stop procedures boarding on the forefront of the train in the railway and tramway vehicle, in the situation that the vehicle design is advancing in complexity more and more in recent years, it is important to prepare the designing organization to implement the system integration, and extract and evaluate the the conditions caused to the dangerous matters without lack before designing, and reflect these measures as the matters of the safety factors, also it is necessary to manage the safety setting target for the whole life cycle including the manufacturing and the operation. Among them, it is probable that the railway and tramway operators, etc., should prepare the phases to confirm and coordinate the designing organization, etc., to extract the safety factors carefully, and implement these phases sufficiently, and implement the verification of the safety sufficiently after finished the designing works.

In the view of the result of this accident investigation, the Japan Transport Safety Board recommends the Minister of the Land, Infrastructure, Transport and Tourism pursuant to Article 26, paragraph (1) of the Act for Establishment of the Japan Transport Safety Board, to implement the following measures, in order to prevent the railway accident and to reduce damages when the railway accident had happened.

Notes

The Railway Bureau, MLIT, should enforce the instruction on the following matters to the railway and tramway operators and the manufacturers related to the designing and manufacturing of the railway vehicles in the whole country.

- [1] When conducting the design of manufacturing or remodeling of the system to implement the automatic operation of the train which the driver did not boarded, prepare the phases to confirm and coordinate the designing organization, etc., to extract safety factors, to verify the safety, and implement each phase sufficiently, referring the designing and manufacturing process shown in Attachment.
- [2] In the phase to confirm and coordinate the designing organization, etc., prepare the designing organization to implement the system integration, and confirm and coordinate the roles and the division of responsibility between individual companies, and the specifications that each company considered as the standard or considered as general for each device.
- [3] In the phase to extract the safety factors, conduct the systematic safety analysis, etc., corresponding to the characteristics of the system, and arrange the required matters, etc., necessary to secure the safety, in order to be confirmed the safety comprehensively against the abnormal status supposed to happen.
- [4] In the phase to verify the safety, verify the designed results whether the whole system secured the sufficient safety or not, for the safety factors extracted in the above [3].



Design and manufacturing process