

CORRECTIVE ACTION PLAN

CAP01-03112023

SUBMITTED PURSUANT TO
THE COLORADO CODE OF REGULATIONS (CCR)
4 CCR 723-7-7349(d)
FOR
A1-03112023

PROCEEDING NO. 23I-0143R

THE REGIONAL TRANSPORTATION DISTRICT (RTD) - DENVER

April 25, 2023



Pursuant to 4 CCR 723-7-7347 (a)(I) the Regional Transportation Agency (RTA) shall develop a CAP for results from investigations in which the RTA or State Safety Oversight Agency (SSOA) identify casual and contributing factors that require corrective actions.

SUMMARY OF EVENT:

On March 11, 2023, at 9:32 a.m., RTD Train 72 with Light Rail Vehicles 201, 202, and 268 derailed at the West Alignment end of line station, Jefferson County Government Center in Golden (the accident).

EACH CAP AND ASSOCIATED HAZARD ANALYSIS SHALL, IN ACCORDANCE WITH:

- 1. 4 CCR 723-7-7347(c)(I) - Identify the element or activity identified including the assigned tracking number.**

The RTD is reporting CAP01-03112023 due to the nature of the accident, A-1-03112023. The accident resulted in minor injuries to two customers who were onboard and significant damage to RTD infrastructure and rolling stock.

RTD determined that the train operator likely fell asleep before impact and that excessive speed and inattention of the train operator are the causal factors of the accident. Contributing to this was the collision with the bump-post resulting in a derailment.

RTD assigned CAP tracking number: CAP01-03112023

- 2. 4 CCR 723-7-7347(c)(II) – Identify the actions to be taken by the RTA to minimize, control, correct, or eliminate the risks and hazards identified by the CAP.**

- Include Fatigue Awareness in recertification training biennially
- Implement a comprehensive Fatigue Risk Management Program
- Evaluate the starting times and duration of shift times for service

- 3. 4 CCR 723-7-7347(c)(III) - Identify the interim measures the RTA plans to implement to prevent recurrence before the final corrective actions are implemented.**

- Update the Fit for Duty checklist (Reporting for Duty log)
- Consider further enhancements to Fit for Duty Process
- Conduct Fatigue Awareness campaign

- 4. 4 CCR 723-7-7347(c)(IV) - Identify/provide the CAP implementation schedule (to include interim correction actions timeline).**

CAP Implementation Schedule			
Type	Corrective Action	Target Date	Date Complete
Interim	Update the Fit for Duty checklist to include an attestation from the Supervisor that they performed the check and from the employee that they are fit for duty.	6/30/2023	
Interim	Consider further enhancements to the Fit for Duty process	9/29/2023	



Interim	Conduct Fatigue Awareness Campaign, which includes information regarding the hazards of operating a vehicle while taking certain medications.	4/30/2023	
Final	Include Fatigue Awareness in recertification training biennially.	9/30/2023	
Final	Implement a comprehensive Fatigue Risk Management Program (FRMP) similar to Federal Railroad Administration (FRA) FRMP.	7/1/2026	
Final	Evaluate the starting time and duration of shifts for service.	9/30/2023	

5. 4 CCR 723-7-7347(c)(V) - Identify the method(s) the RTA will use to validate the effectiveness of the corrective measures.

The effectiveness of the corrective measures will be assessed through supervisor site visits and spot checks of the Fit for Duty process.

6. 4 CCR 723-7-7347(c)(VI) - Identify the individual, including position title, responsible for the CAP implementation.

The RTD individual responsible for implementing this corrective action is Dave Jensen, Assistant General Manager, Rail Operations. This effort will be monitored by RTD’s Leadership Safety Committee under the direction of the Chief Safety Officer/Senior Manager, Safety and Environmental Compliance.

7. 4 CCR 723-7-7347(c)(VII) - Identify any specific actions required by the Commission.

The RTD will await any specific actions required by the Colorado Public Utilities Commission related to this CAP.

REFERENCES AND RESOURCES

The attached documents are provided as a reference and resources for this CAP:

Consistent with PUC staff direction and PUC Rule 7349(d)(IV), RTD submitted its Accident Investigation Report via email to PUC staff concurrently herewith on April 25, 2023. Pursuant to Commission Decision No. C23-0217, RTD has publicly filed this proposed CAP in Proceeding No. 23I-0143R.



 Dan McClain
 Chief Safety Officer/Senior Manager, Safety and Environmental Compliance

April 25, 2023
 Date



RISK ANALYSIS Accident or Incident

CAP No: CAP01-03112023

Complete below hazard analysis table as it relates to the above referenced CAP.

Item #	Hazard Description	Hazard Cause	Hazard Effect	Hazard Category and Probability	Hazard Resolution/Reduction
1	Inattention by the operator and failure to operate the train in accordance with established rules	Impaired performance, Fatigue	Excessive speed, Derailment, Significant injuries	1B	<ul style="list-style-type: none"> • Update the Fit for Duty checklist (Reporting for Duty log) • Consider further enhancements to Fit for Duty Process • Conduct Fatigue Awareness campaign • Include Fatigue Awareness in recertification training biennially • Implement a comprehensive Fatigue Risk Management Program • Evaluate the starting times and duration of shift times for service

To determine the appropriate severity category as defined in Table I for a given hazard at a given point in time, identify the potential for death or injury, environmental impact, or monetary loss. A given hazard may have the potential to affect one or all these three areas.



TABLE I: SEVERITY CATEGORIES

Enter CAP Severity Category: 1.

SEVERITY CATEGORIES		
Description	Severity Category	Mishap Result Criteria
Catastrophic	1	Could result in one or more of the following: death, permanent total disability, irreversible significant environmental impact, or monetary loss equal to or exceeding \$10M.
Grave	2	Could result in one or more of the following: permanent partial disability, injuries or occupational illness that may result in hospitalization of at least three personnel, reversible significant environmental impact, or monetary loss equal to or exceeding \$1M but less than \$10M.
Significant	3	Could result in one or more of the following: injury or occupational illness resulting in one or more lost work day(s), reversible moderate environmental impact, or monetary loss equal to or exceeding \$100K but less than \$1M.
Modest	4	Could result in one or more of the following: injury or occupational illness not resulting in a lost work day, minimal environmental impact, or monetary loss less than \$100K.
Negligible	5	Could result in one or more of the following: no injuries or occupational illness, no environmental impact, minor public inconvenience, or nuisance or monetary loss less than \$25K.

TABLE II: PROBABILITY LEVELS

Probability is defined as the likelihood of the number of times that a specific event will occur during the planned life expectancy of a system. A risk probability may be derived from the analysis of a transit system’s operating experience, evaluation of RTD safety historical data, or the analysis of reliability and failure data. Probability is categorized as Frequent, Probable, Remote, Improbable or Highly Improbable.

Enter CAP Probability Level: B.

PROBABILITY LEVELS			
Description	Level	Specific Individual Item	Fleet or Inventory
Frequent	A	Likely to occur often in the life of an item.	Continuously experienced.
Probable	B	Will occur several times in the life of an item.	Will occur frequently.
Remote	C	Likely to occur sometime in the life of an item.	Will occur several times.
Improbable	D	Unlikely, but possible to occur in the life of an item.	Unlikely, but can reasonably be expected to occur.
Highly Improbable	E	So unlikely, it can be assumed occurrence may not be experienced in the life of an item.	Unlikely to occur, but possible.



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TABLE III: RISK ASSESSMENT MATRIX

Enter CAP Risk Assessment: High.

RISK ASSESSMENT MATRIX					
Severity Probability	Catastrophic (1)	Severe (2)	Serious (3)	Limited (4)	Negligible (5)
Frequent (A)	High	High	Serious	Medium	Medium
Probable (B)	High	High	Serious	Medium	Moderate
Remote (C)	Serious	Serious	Medium	Moderate	Low
Improbable (D)	Medium	Medium	Moderate	Low	Low
Highly Improbable (E)	Medium	Moderate	Low	Low	Low

Risk Level	Acceptability	Resolution Requirement
High	Unacceptable	Correction required
Serious	Undesirable	Correction may be required, decision by management
Medium	Acceptable with review	With review and documentation by management
Moderate	Acceptable	With review
Low	Acceptable	No action needed