



March 10, 2022

Mr. Alfred Drago  
TK Elevator Corporation  
7367 S Revere Pkwy, #2A  
Centennial, CO 80112

RE: Approval of Alternate Materials and Methods Request (Amended)  
TK Elevator Corporation Endura MRL Hydraulic Elevator (TAC 32 H-MRL)

Mr. Drago:

The Division of Oil and Public Safety (OPS) has reviewed the Alternate Materials and Methods Request (AMMR) submitted by TK Elevator Corporation (TKE) on March 10, 2022. This AMMR requests an amendment to the existing approval from OPS to install the TAC 32 H-MRL, also known as Endura-MRL "Machine-room-less Hydraulic Elevator" in Colorado and include the option of installing the Retractable Pit Prop System (REPPS) on these units. This AMMR approval also includes requirements from the AMMR approval from OPS regarding the Endura-MRL on January 23, 2014.

The issues addressed in this AMMR include:

1. ASME A17.1-2013 does not recognize the use of Electrically Assisted Shutoff Valves, Lowering Valves, PressureGauge Fittings and Pressure Switches that are to be installed in conjunction with this equipment. Within this AMMR, TKE included a Certificate of Conformance from Liftinstituut B.V. who, acting in accordance with the requirements of ASME A17.7, has issued a Certificate of Conformance for this equipment.
2. ASME A17.1-2013 allows hydraulic tanks to be installed in elevator hoistways without specifying clearance requirements. OPS approves this AMMR contingent upon the following conditions being met: Equipment related requirements:
  - The type-2 Security Key for the Circuit Breaker Panel and the type-1 Security key for the Service Panel must be made available to authorized elevator personnel at all times.
  - Fire Rated Construction must surround the controller in accordance with locally adopted Building Codes.
  - A water sensor, as described in the manufacturer's specifications, shall be located not more than 12 inches from the floor. The water sensor shall be tested and inspected annually to ensure that upon activation, the requirements of ASME A17.1 2013, Sections, 3.27.1 through 3.27.4 are maintained.
  - A drain or sump pump shall be provided in accordance with ASME A17.1 2013, Section 2.2.5
  - Temperature and humidity ranges shall be posted in the machinery space, control room or control space and provisions to maintain such operating limits shall be provided at the time of installation
  - The power unit in the pit shall be provided with not less than 2 "D" Series Disposable Stationary Industrial Tank Breathers with Active Charcoal Filters. The filters shall be replaced at least every 5-years, regardless of equipment run count. The replacement of the filters with anything other than "Air Sentry" model filters as described above shall be approved by the conveyance manufacturer prior to



installation.

- One of the following methods of securing the car from unintended travel into the elevator pit shall be provided by TKElevator upon installation.
  - The Retractable Pit Prop System (REPPS). When this system is provided the installation instructions and the testing and inspection procedures approved by the State of Colorado shall be provided by TK Elevator as part of the Maintenance Control Plan (MCP) becoming the property of the owner and remain in the MCP for the life of the unit.
  - Pit stands, that are capable of supporting the car, shall be provided in the pit and mounted on bracket assemblies in a location that requires the conveyance mechanic to move the pit stands in order to access the tank control valve.
- Existing units that are retrofitted with the REPPS system where the manual pit stand method was previously used shall have the applicable wiring diagrams updated to reflect the addition of the REPPS system. Units installed after the execution of this AMMR shall have the proper wiring diagrams supplied by TK Elevator.
- Signage with lettering according to ASME A17.1-2013 Section 3.4.1.6 shall be posted on the back wall of the elevator pit and shall contain the following language or as approved by OPS.
  - DANGER - LOW OVERHEAD CLEARANCE - STORED MECHANICAL ENERGY ABOVE.
  - DANGER – ENGAGE REPPS PRIOR TO ENTERING THE PIT BY FOLLOWING THE MANUFACTURERS INSTRUCTIONS. FAILURE TO PROPERLY ENGAGE AND DEPLOY THE REPPS MAY RESULT IN SERIOUS OR FATAL INJURIES.

If the unit is not equipped with the REPPS system, then the following signage shall be implemented.

- DANGER – ENGAGE PIT PIPE STANDS IMMEDIATELY AFTER ENTERING THE PIT BY FOLLOWING MANUFACTURERS INSTRUCTIONS. FAILURE TO PROPERLY ENGAGE PIT STANDS MAY RESULT IN SERIOUS OR FATAL INJURIES.
- Markings as described in ASME A17.1-2013 Section 3.4.1.6 shall be placed on the tank lid.
- TKE shall submit documentation indicating that the requirements listed above are included in company policy and in the Maintenance Control Program for each hydraulic MRL conveyance located in the State of Colorado.

Administrative requirements:

- This Approval Letter and the Inspectors Guide shall be included in the Onsite Documentation of the Maintenance Control Program (MCP) and shall be maintained for the life of the equipment.
- TKE shall deliver a copy of this AMMR approval to each conveyance owner before the acceptance inspection is performed.
- TKE shall obtain the approval of an Approved Authority Having Jurisdiction which may include more stringent requirements than OPS.
- By April 1, 2022, TKE shall:
  - Submit documentation to OPS that verifies each existing hydraulic MRL meets these requirements listed above. If the requirements are not met by the due date, OPS will not approve in-house and subsequently submitted permits until the work is completed.

If you agree with the conditions included in this approval letter, indicate by completing the signature portion below and returning the letter to OPS. This approval will become effective upon receipt, by OPS, of your written acceptance of all the above conditions.

If you have questions, please contact me at (303) 319-5834 or David.Hutchcraft@state.co.us.



David Hutchcraft  
Conveyance Program Manager

I hereby agree with all of the conditions in the above. I understand that any modification to these conditions may be made only with the written consent of the OPS.

TK Elevator

Alfred Drago - Colorado New Installation Operations Manager

---

Printed name and Title

**Alfred  
Drago**

Digitally signed by Alfred  
Drago Date: 2022.03.10  
15:17:11 -0700'

March 10th, 2022

---

Signature