

LOCO OPERATION INSTRUCTION NO. 03/2025

Subject: VCD Acknowledge, Reset and Isolation procedure in conventional and 3 phase Locomotives.

Recently, few cases of detention of trains were reported due to VCD penalty brake application.

- On date 01.02.2025, train no.10103 Dn working with Loco 39128 WAP7/KYN was detained between THVM – KRMI due to drop in MR pressure below 6 kg/cm². Upon analysis it was found that the **Vigilance Penalty** had been activated, LP had failed to acknowledge the VCD, which led to the activation of VCD penalty. VCD is a safety device which ensures safe operation in train working.
- On date 07.02.2025, train no.22659 UP working with Loco 30693 WAP7/RPM was detained between MRJN - GOK due to drop in MR pressure below 6 kg/cm². Upon analysis it was found that the **Vigilance Penalty** had been activated, LP had failed to acknowledge the VCD, which led to the activation of VCD penalty. VCD is a safety device which ensures safe operation in train working.

All loco pilots are hereby instructed to adopt following procedure w.r.t. VCD

A) Conventional Locomotives

VCD comes into vigilance mode above a speed of 2 KMPH.

VCD cycle gets reset automatically on following operation:-

1. By operation of foot pedal switch (PVCD) provided below LP desk.
2. By operation of sanders pedal switch (PSA) below LP desk.
3. During progression/regression of notches through MP or EEC operation.
4. During brake application via A-9 & SA-9.
5. When Keeping MPS at 1 position.

If loco pilot while working a train does not acknowledge VCD within 60 seconds by operation of any one above, then yellow lamp LSVW will start flashing for 8 seconds (60 + 8 sec). If he acknowledges, then yellow light will extinguish. But if loco pilot fails to acknowledge, the VCD lamp along with buzzer will sound for another 8 seconds (60 + 8 + 8 sec). VCD will reset if the same is acknowledged and even if loco pilot fails to acknowledge the same, then VCD will apply penalty brakes through IP valve by dropping BP pressure, auto regression will take place and GR will come to zero if loco is on notches and power will cut off and VCD counter will increase by one.

Note: When BL key put on the VCD taking self-testing. System ok then power on lamp glow. If the IP cock close self-test continue and first notch regression takes place.

Resetting Procedure of VCD when penalty brakes are applied:

1. Bring MP to "0".
2. Stop the train and apply SA9.
3. Wait for 32 seconds.
4. Press VCD reset push button to reset VCD and penalty brakes.

Work further after attaining MR/BP pressure restored to its original value.

* During malfunctioning of VCD it is to be isolated duly informing to TLC/PRC and necessary remarks to be written in log book.

Procedure to isolate VCD:-

1. Operate HVCD to '0'.
 2. If unsuccessful, try by operating BA switch to "Off" position and again to 'On' immediately.
 3. If unsuccessful, disconnect the jumper's connection of VCD main unit.
 4. If unsuccessful, check QVCD. If found in energized condition, then try by wedging QVCD in de-energised condition.
- If FDCS display not working/ blank/defect, VCD buzzer and lamp will not work. Hence it is advised to place HVCD in 0 and work onwards with TLC/PRC permission.
 - HVCD is provided to isolate VCD in case of malfunctioning or when display unit is blanked off.

B) Automatic Vigilance Control Device in 3 phase loco.

It is active if speed of train is more than 1.5 KMPH. LP to acknowledge VCD by any one of the following methods.

1. Operate throttle in TE/BE with a movement of more than 3%
2. Press VCD Foot pedal switch,
3. Operate sander pedal switch (PSA).

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<ul style="list-style-type: none"> • If VCD is acknowledged through any one of the above method the Loco Pilot is considered vigilant and the 60 seconds cycle is reset. • If no acknowledgement within 60 seconds, then buzzer sounds and LSVW will glow for next 8 seconds. Within this 8 seconds LP to acknowledge VCD by pressing vigilance foot pedal switch. If not acknowledged within 68 sec, VCD penalty brakes will apply and BP pressure drops to 2.5-3.0 kg/cm². 	<ul style="list-style-type: none"> • If VCD is acknowledged through any one of the above method the Loco Pilot is considered vigilant and the 60 seconds cycle is reset. • If no acknowledgement within 60 seconds, then LSVW will glow for next 8 seconds. Within this 8 seconds LP to acknowledge VCD by pressing vigilance foot pedal switch. • If not acknowledged then buzzer along with LSVW will glow for next 8 sec. If not acknowledged within 76 sec, VCD penalty brakes will apply and BP pressure drops to 2.5-3.0 kg/cm².
RESETTING PROCEDURE	
<ul style="list-style-type: none"> • Bring throttle to 0. • Apply A9 to emergency (To avoid MR dropping). • Wait for 120 seconds. • Press BPVR to reset VCD, LSVW extinguishes and buzzer stops. • Press and release VCD foot pedal switch. • Press BPFA for acknowledging fault message. • Bring A9 handle to RUN position to recharge BP pressure. • Resume normal traction, 	<ul style="list-style-type: none"> • Bring throttle to 0. • Apply A9 to FS. • Wait for 32 seconds. • Press BPVR to reset VCD, LSVW extinguishes and buzzer stops. • Press and release VCD foot pedal switch. • Press BPFA for acknowledging fault message. • Bring A9 handle to RUN position to recharge BP pressure. • Resume normal traction,

F10 03 P1- "Vigilance emergency brake application" fault message will appear in display.
TE/BE will become 0.

Dead man's mode:

If VCD foot switch remains pressed for more than 60 seconds, the system will go automatically in dead man's mode, and buzzer will start, if not released within next 8 second, VCD penalty will be applied. The BP drops 2.5 to 3.0 kg/cm².

Isolation of VCD:

If Loco pilot is acknowledging VCD properly as per procedure, but still VCD penalty brake is taking place, isolate VCD by keeping 237.1 (SB-I) in 0 position. Make remark in the log book and inform PRC/TLC and proceed vigilantly.

NOTE:

1. Never work with VCD in isolated condition without adequate/proper reason, log the defect in defect book for maintenance attention, and inform PRC.
2. In recent modification (Modification sheet no. RDSO/2024/EL/MS/0505 (REV."0") dated 02/12/2024) of 3 phase loco which is under progress, to acknowledge the vigilance warning, mushroom head push-button switch (BPVG) has been provided in place of the LSVW lamp.
 - Loco pilots to use BPVG to acknowledge the vigilance warning. The Vigilance foot switch (PVCD) has been isolated and now vigilance warning cannot be acknowledged by the PVCD.
 - In case, due to any technical reason the vigilance warning is not acknowledged by BPVG, then use BPVR switch to acknowledge the vigilance warning. The facility of BPVG switch has also been added in BPVR switch, so that the Loco Pilots can acknowledge the vigilance warning through BPVR switch.
 - LSVW lamp has been shifted towards right side of the LSAF lamp.


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