New comment (r01-141, not submitted. Clause 145.3.3.3.5 Page 191 line 48)

In the PD state machine in NOPOWER we have the assignment pse_power_level ←8 that may cause overload condition in the PSE whenever the assigned power is lower than the required power.
The overload condition happens when we force compliant PDs in NOPWER that do remember their assigned class (and their pse_power_level) data to redefine their pse_power_level in NOPOWER to higher power level in NOPWER when PSE has no knowledge about it.

The assignment pse_power_level ←8 in NOPOWER looks redundant at least if the PD remembers its pse_power_level when PD input voltage is above VReset_PD_max (2.81V), or VReset_th_max (6.9V) which ensures sufficient voltage to PD to keep its memory.

Asking PD to assign pse_power_level ←8 in NOPOWER for VPD<VOff_PD_min without specifying that the lowest value for VPD<VOff_PD_min is VReset_th_max is the issue.

Example for the problem:

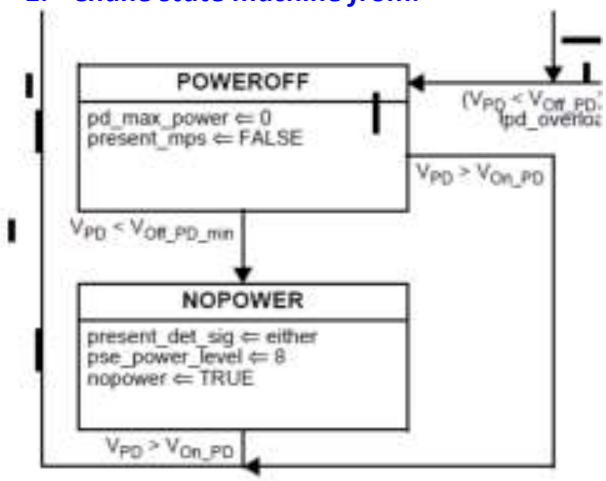
a) *PD requested class is 8 and the assigned class is 6.*
b) *When transitioning from NOPWER back to POWERED, the PSE has still available power of 6 (that is why it has assigned class to 6) and now power level is 8.*
   The pse_power_level=8 will cause the pse_assign_class in POWER_DELAY to be:
   pse_assign_class = min(pse_power_level, pd_req_class)=min(8,8)=8.
   This in turn will set pd_max_power in POWERED to be:
   pd_max_power ← min (pse_assigned_class, pd_req_class)=min(8, 8)=8 which is > pse_available power =6 ➔ PSE OVERLOAD condition.

This comment tries to <u>minimize</u> the exposure of a compliant PD that do remember its pse_power_level to be forced to reassign pse_power_level to 8 which will cause that PD to cause PSE overload which is uncompliant behavior after that PD that didn't go to IDLE was behave in a compliant way.

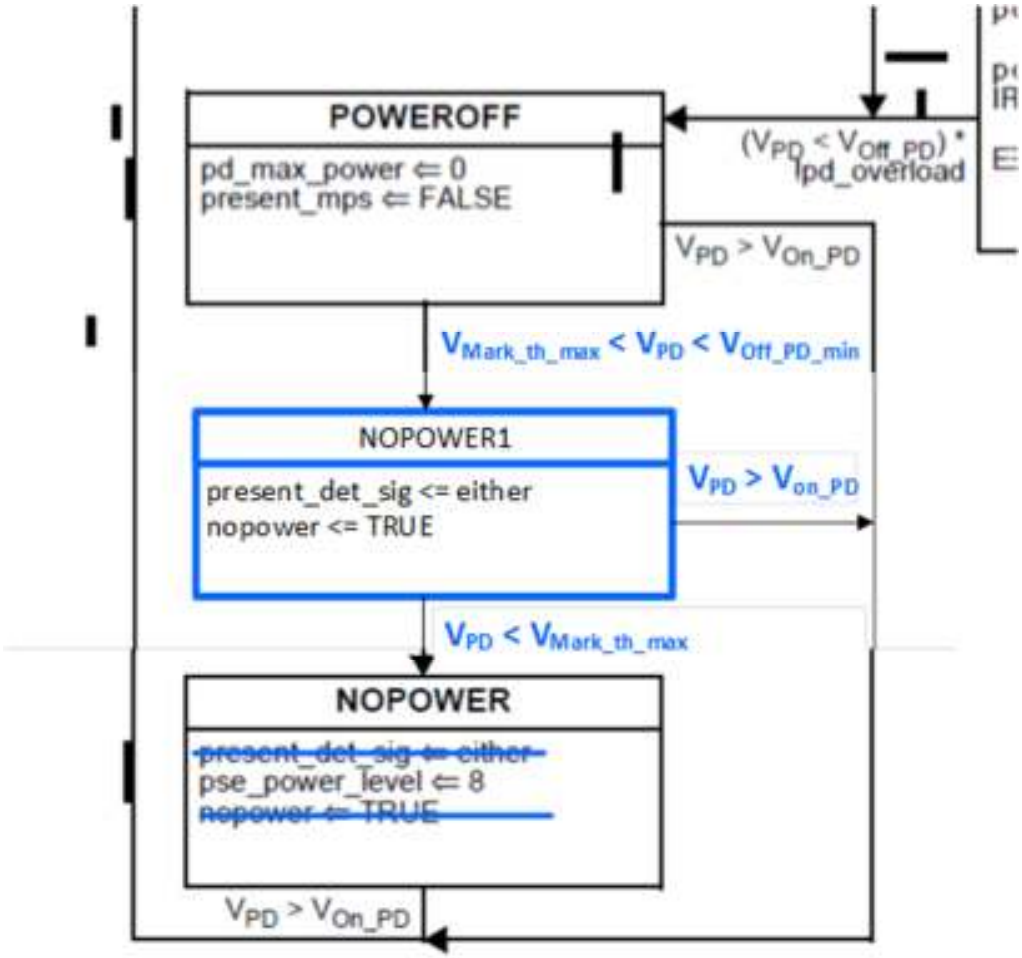
The proposed remedy is based on reducing the input voltage range in which we are forced to assign pse_power_level to 8 from: Vpd < VOff_PD_min to: Vmark_th_max < Vpd < VOff_PD_min.

Proposed Remedy:

1. ***Chane state machine from:***



To:



2. Repeat the proposed changes for dual-signature PD.

End of Remedy