USB Power Delivery ENGINEERING CHANGE NOTICE

Title: Slew Rate Exception for Source
Applied to: USB Power Delivery Specification Revision 3.0 Version 1.1

Brief description of the functional changes proposed:
The list of scenarios that are not subject to the slew rate controls is incomplete. Discharging after a disconnect and applying VBUS during a fast-role swap should also be exempt from slew rate controls.

Benefits as a result of the proposed changes:
The benefit of this ECR is to allow sources to quickly discharge their bulk capacitance after an unplug.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
None

An analysis of the hardware implications:
Relaxing of requirements to what was the original intent.

An analysis of the software implications:
none

An analysis of the compliance testing implications:
Compliance testers would not need to test for slew rate when an unplug event occurs.

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Actual Change Requested

(a). Section 7.1.14, Page 232

From Text:

Scenarios where V_{BUS} slew rate limits do not apply and V_{BUS} ***May*** transition faster than specified are as follows:

- When first applying V_{BUS} to a port operating as DFP.
- When discharging V_{BUS} to ***vSafe0V*** during a Hard Reset.
- When increasing V_{BUS} from ***vSafe0V*** to ***vSafe5V*** during a Hard Reset.
- During a Fast Role Swap when the V_{BUS} power source connected to the Hub UFP stops sourcing power.

To Text:

Scenarios where vSrcSlewPos and vPpsSlewPos V_{BUS} slew rate limits do not apply and V_{BUS} ***May*** transition faster than specified are as follows:

- When first applying V_{BUS} after an Attach.
- When increasing V_{BUS} from ***vSafe0V*** to ***vSafe5V*** during a Hard Reset.
- During a Fast Role Swap when the initial Sink applies V_{BUS}.

Scenarios where vSrcSlewNeg and vPpsSlewNeg V_{BUS} slew rate limits do not apply and V_{BUS} ***May*** transition faster than specified are as follows:

- When discharging V_{BUS} to ***vSafe0V*** during a Hard Reset.
- When discharging V_{BUS} to ***vSafe0V*** after a Detach.
- During a Fast Role Swap when the V_{BUS} power source connected to the Hub UFP stops sourcing power.

(b). Section 7.1.4.1, Page 220

New Paragraph at end of section:

Section 7.1.14 lists transitions that are exempt from the vSrcSlewPos limit.

(c). Section 7.1.4.2, Page 221

New Paragraph at end of section:

Section 7.1.14 lists transitions that are exempt from the vSrcSlewNeg limit.

(d). Section 7.1.4.3, Page 223

New Paragraph at end of section:

Section 7.1.14 lists transitions that are exempt from the vPpsSlewNeg and vPpsSlewPos limits.