Load Management

Unused or abandoned cables not terminated at equipment or marked for future use shall be removed. Load connection best practices for facilities are listed below:

- Twist-lock receptacles and plugs for all underfloor or overhead receptacles should be provided.
- Receptacles on the power strip within a cabinet or rack do not require locking-type receptacles.
- Some systems use a plug-in bus way system installed adjacent to the loads or cabinets. The bus way's design should allow new load taps to be installed while the bus is energized without creating any arcing or transients.

Locking receptacles should be used for connecting the input cords of the power strips and for larger ITE. For in-rack loads using straight-blade cords, anti-pullout tie downs should be used where cords plug into the power strips.

Power distribution cables originating from different source PDUs, RPPs, electrical phases, taps off the same PDU, or electrical panels should be clearly identified as to their source, phase, and load capacity.

If permitted or required by the Rwanda Standards Board, cables from different sources may have different color jackets and connectors.

Branch circuit overload protection devices should be de-rated by a design factor of 20% (e.g., be at least
25% larger than their connected ITE load) to ensure that circuits are not operating at the edge of their
circuit breaker trip rating.

- For equipment and systems that require power feeds from more than one power source to provide availability (typically Class F3 or Class F4), the power cords should be split across two of the cabinet power strips. To provide availability for single-corded equipment and for equipment that utilizes multiple cords but is not power feed-fault tolerant, these items should be plugged into a rack-mounted power strip or receptacle fed by a larger upstream, automatic static transfer switch (ASTS), or some other point-of use ASTS.
- Equipment with three power cords should have one of the three plugs on a rack-mounted power strip or receptacle fed by a static transfer switch or point-of-use switch. The other two plugs should be plugged into receptacles supported by different PDUs. These other two receptacles should not be on static transfer switches.
- Power cords should be mechanically connected at the point of entry to the rack or a piece of ITE. This may be accomplished via the ITE manufacturer's cable tie downs, hook-and-eye straps, cable ties, or similar attachment that allow for the secure attachment of the power cable to the enclosure and would prevent the accidental disconnection or damage of cable. Provide slack loop, as appropriate, in the tie down to allow for some cable

movement.

- UPS sources should be paired or grouped together and represented by individual panels or remote power panels for ease and clarity.
- Plugs and rack-mounted power strips should be located where thermos graphic testing can observe all critical connections and over-current protection devices while operating.
- Cable management should be used.
- Disruption to future operations should be minimized by locating distribution equipment to permit expansion and servicing with minimal disruption.
- All power receptacles and junction boxes should be labeled with the PDU/RPP/panel number and circuit breaker number. Each PDU/RPP/panel circuit breaker should be labeled with the name of the cabinet or rack, or the grid coordinates of the equipment that it supports.
- All power receptacles and junction boxes installed under an access floor system should be attached to the access floor or the structural floor per manufacturer’s recommendations when required by the Rwanda Standards Board.
- Receptacles and junction boxes should be mounted on a channel to keep raceways and equipment above the subfloor. This attachment may be made mechanically via concrete anchors, brackets attached to the access floor pedestals, or even industrial hook-and-loop NRTL-listed fasteners, which make an excellent, dust-free alternative to drilling in an anchor or adhesives. Additionally, boxes and other electrical devices should be mounted at least 25 mm (1 in) above the subfloor to prevent water intrusion in the event of a leak.
- Every computer room, entrance room, access provider room, and service provider room circuit should be labeled at the receptacle with the PDU or panel board identifier and circuit breaker number.
- Receptacles on UPS power should be color coded, have a color-coded label, or have a colored dot to indicate the specific upstream UPS power source.
- Supply circuits and interconnecting cables identified for future use should be marked with a tag of enough durability to withstand the environment involved.

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