TITLE: DS430 – Design of Electric Power Systems for NPPs

COMMENTS BY REVIEWER Reviewer: G. Singh Matharu Page..1.. of...4. Country/Organization: USA / NRC Date:				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1.9	This guide applies to all types of nuclear power plants. The extent of the electrical power systems important to safety…	Typographical				
2	1.11	Figures 1, 2 and 3 show examples of Nuclear Power Plant	Editorial				
3	2.4	The off-site power system ~~will ideally~~ should be designed to provide AC power to the plant during all modes of operation.	Clearly define the main purpose of offsite power design				
4	2.7	Stand-alone power supplies, ~~for example~~ such as separate power for security systems, are not included.	Editorial				
5	2.8	include the ~~plant~~ main generator, ~~plant~~ generator step up transformer, auxiliary transformer, standby transformer and the distribution system	Editorial				
6	2.9	Protective relays detect ~~The~~ loss of the preferred AC power supply to the Electrical Power Systems ~~triggers~~ and auto ~~the~~ start~~up~~ ~~of a~~ the standby electrical power source. In most cases the plant safety analyses assume that the standby AC power source will be used for plant shutdown following design basis accidents as this source has limited capacity and a time delay associated with powering the safety busses.	Provide reason why the onsite power source is used in safety analyses.				

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7	2.30	When electrical systems powering equipment important to safety - directly or via transformers, switchgear and switchyards – are connected to equipment not important to safety (that is equipment not required for prevention of abnormal operation or for mitigating the consequences of failures or accident conditions) should preferably be isolated from standby power sources during accident conditions.	The statement as written does not state anything				
8	2.39	**2.39. Electrical installations should be designed and erected in such a way that they can withstand voltages that can be expected to occur in the ~~installation~~ system during all modes of operation**	Editorial for clarity				
9	3.1	The design shall ~~be such as to~~ ensure that any interference between items important to safety will be prevented, and in particular	Editorial (Note, this is a repeat statement)				
10	4.1	The design basis for each item important to safety shall be established systematically, validated ~~justified~~ and documented. The documentation shall provide the necessary information for the operating organization to maintain, modify and operate the plant in a safe~~ly~~ manner	Editorial for clarity				
11	4.10	and loss of transmission system elements including single phase open conditions	Operating experience in USA				

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12	4.12b 1.11	This range defines the operating requirements for equipment such as motors, ~~for~~ pumps, inverters, battery chargers and valve actuators (used in the accident analyses (safety analyses) of the plant) where performance characteristics are adversely impacted when operating outside the allowable band. …	Rewritten to offer clarity and reason for evaluating the allowable band				
13	5.4	Add: • Harmonics due to switching surges or rotating equipment • Loss of single phase or open phase condition	Operating experience in USA				
14	5.4	5.4 is repeated in the document					
15	5.20	The availability of spare components such as an uninterruptible power supply, or battery charger, ~~might~~ preclude operating restrictions in the event of a failure or maintenance related outage of these critical components	Editorial				
16	5.35	~~Might~~ Protect against common cause failure due to common normal, abnormal, or accident environments, the effects	Editorial				
17	5.35	~~Might~~ Reduce the likelihood of common cause failures	Editorial				

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18 19	6.49 8.2	~~It needs to be taken into account that~~ The operation of Nuclear power plants requires particular coordination between Transmission System Operator and nuclear power plant operator Replace it with following: "Alternate AC power supplies are provided to protect the electrical systems against the simultaneous failure of offsite and emergency on-site AC power supplies. This involves AC power sources that are diverse in design and not susceptible to the events that caused the loss of onsite and offsite power sources."	Editorial				