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Maintenance, Testing and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants

Comment On: NRC-2013-0048-0001

Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants

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General Comment

Please consider the following enhancements to DG 1269

1 Replace the battery "BEFORE" capacity reaches 80% not "when capacity drops below 80%.

2 Fully charged float current range is stated as '0.5 - 2.0 Amps' However most utilities are using 2.0 A as their acceptance limit for all the installed batteries independent of size, even though the actual recorded float current in many cases is less than 50 milliamps. The universal use of a 2 Amp acceptance criteria appears un-conservative. Because of this variation in actual field measurements of float current, the sizing calculation recommendations in IEEE-485 should use a Design Margin correction factor of no less than 1.05 to account for the "not fully recharged" condition.

3 Using float current as a measure of charge should be only used for a limited time following a recharge when the electrolyte may be stratified. Float current can be affected by a number of variables besides the average condition of a string of cells, such as the actual float voltage and the inter-cell connection resistance.

4 If float current is used to determine capacity, a calibrated shunt, as noted in the referenced NUREC/CR-7148, should be used NOT a clamp-on meter.

5 The Acceptance Criteria for the Service Test and the Modified Performance Test should have BOTH the Load Current Profile and the Required Minimum Voltage Profile for all period steps during service duty portion of

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 Add = E. Orlowski (EXO)
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both tests.

6 The service duty portion of the modified performance test is an as-found test with no temperature compensation. Therefore, the total Amp-hours removed in the service duty portion of the modified performance test should be adjusted for initial electrolyte temperature when calculating the total amp-hours to be discharged in the performance duty section.