

June 25, 2009

MEMORANDUM TO: Ronaldo V. Jenkins, Chief  
Electrical Engineering Branch  
Office of New Reactors

FROM: Tania Martinez Navedo, Electrical Engineer */RA/*  
Electrical Engineering Branch  
Division of Engineering  
Office of New Reactors

SUBJECT: REPORT ON TRIP TO THE INSTITUTE OF ELECTRICAL AND  
ELECTRONICS ENGINEERS STATIONARY BATTERY COMMITTEE  
MEETING IN ROHNERT PARK, CA

DATES OF VISIT: June 7-11, 2009

PURPOSE: To participate in the Institute of Electrical and Electronics Engineers  
Stationary Battery Committee meeting

ACCOMPANNING  
PERSONNEL: Matthew McConnell, NRR/ADES/DE/EEEEB  
Sheila Ray, NRR/ADES/DE/EEEEB  
Liliana Ramadan, RES/DE/MEEB

The Power Engineering Society's (PES) Stationary Battery Committee of the Institute of Electrical and Electronics Engineers (IEEE) hosted its summer meeting in Rohnert Park, CA from June 7, 2009, through June 11, 2009. The purpose of this meeting was to collectively work with conference participants to improve IEEE standards relating to stationary batteries. Specifically, we assisted with the development of new revisions to IEEE standards related to stationary batteries, including IEEE Standard 450, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," IEEE Standard 485, "IEEE Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications", and IEEE 535, "IEEE Standard for Qualification of Class 1E Lead Storage Batteries for Nuclear Power Generating Stations." We also attended the IEEE Stationary Battery Committee's Nuclear Power Working Group.

Highlights:

1. On June 7<sup>th</sup>, 2009, two technical topics were discussed: 1) Fault Current in DC Systems & Arc Flash and 2) Hydrogen Detectors and Ventilation.
2. As part of a continuous effort and discussions on the qualification of batteries for extended duty cycles (duty cycles over 8 hours), the EPRI-sponsored test plan is being considered for incorporation into IEEE Std 535. Both Mr. McConnell and Ms. Martinez Navedo are part of the IEEE Std. 535 working group. Our effort will help create a

standardized qualification plan for nuclear power plants that plan to use batteries with extended duty cycles.

3. At the Nuclear Power Working Group meeting, NRC Staff informed the group of NRC activities and industry operating experience related to stationary batteries. The Office of Nuclear Reactor Research (NRR) discussed the development of TSTF-500 and the changes made when compared with TSTF-360. NRR also discussed operational experience as it pertains to batteries in the last year (Fitzpatrick 2009-002-00 (333), Farley 2008-001-00 (364), Waterford 2008-004-00 (382), SONGS 2008-008-01 (361), SONGS 2008-003-00 (362), and SONGS Special Inspection Findings). The Office of New Reactors (NRO) discussed the need to expedite the creation/inclusion of the qualification plan for batteries with extended duty cycles in support of the NRC's review efforts for new passive reactor designs. The Office of Nuclear Regulatory Research (RES) discussed the upcoming research project that will involve confirming the adequacy of float current monitoring to replace specific gravity monitoring for the purpose of determining a battery's state-of-charge. RES also noted that the research project will review the impact of overcharging and its effect on batteries.

No regulatory commitments or decisions were made by the NRC staff at this meeting.

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OFFICE	NRO/DE/EEB	NRR/DE/EEEE	NRR/DE/EEEE	RES/DE/MEEB
NAME	TMartinez Navedo	MMcConnell	SRay	LRamadan
DATE	6/22/2009	6/25/2009	6/24/2009	6/25/2009

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