

From: Khan, Nadim
To: Russell, Andrea
Cc: Ray, Sheila; Titus, Brett
Subject: RE: AP1000 STS Bases Question on 3.8.1
Date: Tuesday, March 30, 2021 12:09:31 PM

Hi Andrea,
Sheila and I have looked at the information below and determined that the revision to the VEGP TS Bases is better than the AP1000 STS Bases. The information in the VEGP TS Bases is still accurate and is consistent with the information provided in IEEE Std. 450 which is on battery testing.

Please let me know if you have any questions.

Thanks,
Nadim Khan

From: Ray, Sheila <Sheila.Ray@nrc.gov>
Sent: Tuesday, March 30, 2021 9:34 AM
To: Russell, Andrea <Andrea.Russell@nrc.gov>; Titus, Brett <Brett.Titus@nrc.gov>; Khan, Nadim <Nadim.Khan@nrc.gov>
Subject: RE: AP1000 STS Bases Question on 3.8.1

Great! Thanks also for the CAC!

From: Russell, Andrea <Andrea.Russell@nrc.gov>
Sent: Tuesday, March 30, 2021 9:28 AM
To: Ray, Sheila <Sheila.Ray@nrc.gov>; Titus, Brett <Brett.Titus@nrc.gov>; Khan, Nadim <Nadim.Khan@nrc.gov>
Subject: RE: AP1000 STS Bases Question on 3.8.1

Yes, this week or next week would be fine. I appreciate the help.

Also, not sure if you all have a generic CAC you use to assist other branches with electrical questions, so here is the CAC for this work if you need to have it added to your timesheet to charge time to it:

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From: Ray, Sheila <Sheila.Ray@nrc.gov>
Sent: Tuesday, March 30, 2021 9:26 AM
To: Russell, Andrea <Andrea.Russell@nrc.gov>; Titus, Brett <Brett.Titus@nrc.gov>; Khan, Nadim <Nadim.Khan@nrc.gov>
Subject: RE: AP1000 STS Bases Question on 3.8.1

Thanks Andrea. Nadim and I will take a look at the information provided as well as some of the IEEE consensus standards on battery testing. Is it ok to get back to you by the end of the week?

Thanks.
Sheila

From: Russell, Andrea <Andrea.Russell@nrc.gov>
Sent: Tuesday, March 30, 2021 9:22 AM
To: Titus, Brett <Brett.Titus@nrc.gov>
Cc: Ray, Sheila <Sheila.Ray@nrc.gov>; Khan, Nadim <Nadim.Khan@nrc.gov>
Subject: RE: AP1000 STS Bases Question on 3.8.1

Thanks so much!

From: Titus, Brett <Brett.Titus@nrc.gov>
Sent: Tuesday, March 30, 2021 9:19 AM
To: Russell, Andrea <Andrea.Russell@nrc.gov>
Cc: Ray, Sheila <Sheila.Ray@nrc.gov>; Khan, Nadim <Nadim.Khan@nrc.gov>
Subject: RE: AP1000 STS Bases Question on 3.8.1

Thanks for the email, Andrea.

I've copied the experts from my branch who should be able to answer the question on the TSs.

Sheila and Nadim – If you need any support from me on this, feel free to give me a call or set up a meeting for all of us to discuss.

~BT

From: Russell, Andrea <Andrea.Russell@nrc.gov>
Sent: Tuesday, March 30, 2021 9:14 AM
To: Titus, Brett <Brett.Titus@nrc.gov>
Subject: AP1000 STS Bases Question on 3.8.1

Brett

I have a question regarding an electric TS for AP1000 STS. We are updating the standard tech. specs. and noticed a difference between Vogtle language and the standard for the bases in 3.8.1. Is there someone in your branch that has been involved with the new reactor electrical TSs that I could reach out to? It should require minimal effort (1-2 hours or less) for the question I have. Below is the comparison and question.

Any assistance would be appreciated.

Basically the question is: Is the Vogtle language in the far left column better or more accurate than the STS bases language in the 2nd column. The spacing in the columns is wonky to help us compare line to line, so don't worry about that. The colored font (light blue and red) indicates the differences.

VEGP TS Bases up to Rev. 59	AP1000 STS Bases draft Rev. 1	Differences	Disposition / Action
Bases Section B 3.8	-		
Bases Subsection B 3.8.1 Rev. 54			
SRs under SR 3.8.1.3 paragraphs 4 and 5	SRs under SR 3.8.1.3 paragraphs 4 and 5		

<p>The modified performance discharge test is a test, in the "as found" condition, of a battery's capacity with the discharge rate(s) modified to encompass every portion of the battery duty cycle. This allows the performance test to be accomplished in the minimum amount of time while still demonstrating the high rate capability of the battery to meet duty cycle requirements. Thus, a modified performance test satisfies both the requirement to perform periodic performance tests as well as the requirement to perform periodic service tests.</p> <p>The battery terminal voltage for the modified performance discharge test is required to remain above the minimum battery terminal voltage specified in the battery service test for the duration of the service test portion of the test. ...</p> <p>....</p> <p>Initial conditions for the modified performance discharge test are identical to those specified for a service test.</p>	<p>The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test.</p> <p>The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.</p> <p>A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity.</p> <p>Initial conditions for the modified performance discharge test should be identical to those specified for a service test.</p>	<p>Differences appear to stem from changes incorporated in PTS Bases before Rev. 54</p> <p>The 2015 GTST for STS Bases for SR 3.8.1.3, paragraphs 4 and 5 appear to be unchanged from DCD Rev 19 GTS Bases- and are not changed in draft Rev. 1 of Bases for STS SR 3.8.1.3</p> <p>Comment (cch): Suggest checking with Electrical Branch about whether the PTS revised Bases Paragraphs 4 and 5 are better or more accurate than the STS Bases paragraphs.</p>	<p>Action (apr): Determine whether the PTS revised Bases Paragraphs 4 and 5 are better or more accurate than the STS Bases paragraphs.</p>
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Andrea Russell
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