

Attendees: Kayden Chad Hatem Majed, Dr. Li and Dr. Johnson

Action Items For Review: (15 min)

AI:21 Chad

Build a unit for synchronizing the power system in the advanced power lab to the Avista system. This action item is going to change to configuring a SEL-351 so that it can be used to synchronize the system. I plan to get a copy of the 351 documentation at work. (10/16)
Due 12/15

AI:26 Kayden Due 11/20

Kayden will talk to JJ about installing WEBEX software for "all users" onto the conference room computer for meetings with Stephanie. 10/30 In progress.

AI:27 Kayden Due 11/11

Figure out how to print the Gantt chart for the next meeting with Stephanie. 10/30 Still need to figure out how to print only the Gantt chart. 11/06 Still in progress. 11/19 still in progress

AI:31 Chad Vorse 11/2 **No started, in progress.**

Review the motors textbook to assist with understanding the test we are doing from the IEEE standard and any workarounds that will be needed in the lab. Update: I have started reviewing the textbook, especially on the slip questions that came up during the design review. I still need to work on understanding the motor tests we are doing and how the IEEE test will be modified since we cannot supply a voltage higher than 240V to the VFD.

AI:33 All 11/6 **Done, Slides due 11/7.**

Everyone will spend another Friday morning working on the design review. We should have a date, some answers to our questions, and we will attempt to make some slides.

AI:34 Majed Hatem 11/6 **Slides were complete and presented in Design Review**

Work on developing a good slide or two regarding the RSCAD model and the work you plan to do.

AI:36 Chad Vorse Due 11/9 **Done**

Ask whether any of the work on the project is considered confidential, especially concerning if we need to put things on the WIKI page. **Dr. Fischer has said all the information is public.**

AI:37 Everyone Due 12/3

Review the parameters of the VFD to determine if there is any opportunity to enter characterized values from the motor work into the VFD.

AI:38 Everyone 11/19

Ask Mike West about how he set up the VFD parameters in the beginning.

New Agenda Items

Review goals for lab on Sunday Evening:

Chad

- My goal is to publish mechanical RPM and Slip by the end of the weekend, 11/22
 - I have successfully interacted with the encoder and read information coming back.
- I also plan to have a modified motor test for the no-load test and assist Hatem and Majed in conducting the test if they are in this weekend.

Majed

- Conduct one of the tests, it has not been picked yet
 - Windage loss, friction loss, $I^2 R$ losses and ID Run
- Hoping to get the hardest one out of the way
- Work on the RSCAD tutorial
 - We started the tutorial on RSCAD and made some good progress on learning that.
 - Started friction and windage losses test and the supply voltages are not sufficient. Dr. Hess has been asked for advice, still awaiting a response. Maybe Dr. Johnson would have ideas as well.
 - Majed has stated that he and Hatem will be working through the rest of the tutorial in RSCAD.
 - Completing the no load test

Hatem

- Hook the load bank directly to the machine
 - Hooked the load bank up to the Model Power System
 - Andy went over the connection to the model power system, the load bank connections, and RSCAD tutorial/documentation.
 - Determining the time constant of the system, we need to learn how to test for this.

Kayden

- Put on paper the connections to the VFD and the board. Create a list of registers that would be nice to see written to. (Change reference or increase/decrease speed).
- Mostly planning research, probably not too much hands on.
 - Kayden worked on researching the communication protocol.
 - The protocol is MODBUS and Kayden has worked with that at work. (Good news for us).
 - Set up a test and development environment at home.
- Kayden will be out of town for the holidays. He is hoping to finish his MODBUS driver over the break and then write the first parameters when he gets back.

New Minutes

New list of questions:

Dr. Fischer stated in the design review that it was not important to have lightening fast response to changes in frequency. Furthermore, he said we want the system to replicate the response of prime movers in the power industry. Two examples were a steam turbine and a hydro-powered turbine.

- It feels like we have had another large shift in the paradigm of our goals. We have consistently used the terms "fast as possible" and "small as possible" in our documents that have been reviewed by our technical advisors, but now it sounds like neither of these are true.
- Dr. Fischer specifically said "The VFD is capable of responding instantly. We do not want that... we do not want the VFD in the RTDS model."

Two reasons to characterize the machine. The parameters of the machine can be entered into the drive to tune the drive.

It is also worth have a simple model of the machine and the drive in the RTDS. The dynamics of the drive may not be very noticeable since the machine will be responding so much faster than the prime movers in the final model.

Dr. Johnson provides a book that has models within it. They are block diagrams but they have to have parameters added to it.

Dr. Johnson has the report and some other material for the power grid design team from a couple of years ago. He is going to provide this information to us.

Hatem asks about the time delay. The block diagrams are similar to what you have seen in signals courses. Our job is filling in the information for the block diagrams.

Kayden asked about who Doug Taylor is. He is an SEL engineering that relocated to Spokane.

Minutes, raw form...

AI: Invite Stephanie, Normann, etc. for the snapshot meeting.

AI: Send slide to Kayden for the snapshot meeting.

AI: Team will meet at the lab at 8:30 in the morning.

Dr. Johnson and Dr. Hess will be available on Monday.

11/06/2015

Byte-Back Team Agenda / Minutes