

Smart Spokane Meeting Minutes

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Meeting Minutes #1

September 12, 2016

8 a.m. – 9 p.m.

GJL 218

Attendees: Professor Hess, Jordan Scott, Dan Craig, Jesus De La Cruz, Jacob Dolan

- Wikipage needs to be created
- Moderator and Secretary will take turns every week
- Create Gantt Chart for scheduling
- Attend Avista meeting on September 21, 9:30 a.m. (~ 2 hours long)
- Talk to Avista about setting up a client meeting on September 21
- Get an understanding of what project is about by next meeting
- Primary contact for Avista: Eric Lee. Also Randy Ganettinger
- T.O. Engineering contacts: Natasha and JR Norvel
- Travel will be included in the budget
- One person needs to attend the “every other Wednesday” meetings
- One person needs to get UI certified to be a driver (talk to Stephanie)
- Create a Google drive for all documentation
- Come up with a set of questions for our future client meeting (send to Avista 3 days before)
- Design review is in November
- Talk to Solar Roadway team about presentation styles for Design Review
- Create a group text and group Facebook chat for communication
- Next weeks meeting is thus far in the same location
- Talk to Poven Penky about documentation on the project

Meeting Minutes #2

September 19, 2016

8 a.m. – 9 a.m.

GJL 218

Attendees: Professor Herb Hess, Jordan Scott, Dan Craig, Jesus De La Cruz, Jacob Dolan

- Avista Kickoff Meeting on September 21, 2016
- Set up the Avista meeting at the kickoff
- AGC group, Master Control Group
- Poven Penky (Schweitzer), access his paper on the microgrid for solar and ability for storage
- Where put solar panels? What quantities?
- How many batteries? Where to put all the batteries?
- Roughly figure out where solar panels would be put. Be flexible.
- Must be assembled electrically on demand
- Look at in-stream generators for an alternative
- Research all feasible alternatives for other renewable energies
- hhess054, jordan3185scott for Google drive purposes
- Ian King, Connor
- Come with questions to Avista meeting (Business Dress)
- Design review at 8 on Friday

Smart Spokane

Meeting Minutes

September 26, 2016

I. Call to order

Daniel Craig called to order the regular meeting of Smart Spokane at 8:00am on September 26, 2016 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

[Secretary Name] conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, Jesus De La Cruz, and Jacob Dolan.

III. Approval of minutes from last meeting

No one read the minutes from the last meeting.

IV. Open issues

a) Interview Questions

The team and their team mentors reviewed the Randy's responses to the questions for the Client Interview. The mentors filled in the parts where Randy left things to them. Most of the answers boiled down to read Pavan's Thesis, and determine it as part of the project.

b) Bi-Monthly Meeting

The time and location of the Bi-Monthly telephone meeting with Randy was shared with the members of Smart Spokane. Smart Spokane was directed to have a member attend for all of these meetings.

V. New business

Alternative Sources of Renewable Energy

It was noted that Smart Spokane does not need to limit its designs to solely solar power. Professor Hess shared that the next largest renewable resource to use would be biomass. Specifically, wood chips similar to what the University of Idaho is currently using at its steam plant. Professor Hess also mentioned that this resource and hydropower has a negative political charge.

VI. Action Items

- a) Jordan: Determine who is setting up the Pullman Battery Tour
- b) Jordan: Distribute the digital copy of Pavan's Thesis
- c) Smart Spokane: Read Pavan's Thesis

VII. Adjournment

Daniel Craig adjourned the meeting at 8:30am.

Minutes submitted by: Jacob Dolan

Minutes approved by: Jesus De La Cruz

Smart Spokane Meeting Minutes

October 3, 2016

I. Call to order

Daniel Craig called to order the regular meeting of Smart Spokane at 8:00am on October 3, 2016 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

[Secretary Name] conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, Jesus De La Cruz, and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon. Additions will be outlined in Section IV and V below.

IV. Open issues

c) Spokane and Pullman Field Trips

Jordan has been in contact with Randy about the upcoming field trip to Spokane. Randy has said the trip will be on an upcoming Wednesday, but the date has not yet been decided upon.

As far as the field trip to Pullman to view the battery storage, no date has been decided upon. A tour of battery storage may be available in Spokane

d) Preliminary Discussion of Pavan's Thesis

Dan asked the question as to how the group can obtain the critical loads outlined in the thesis. Jordan says the names and locations of these critical loads should be in the other files sent out last week.

e) Sub-Team Meetings

Jordan approved the idea of creating a schedule for sub team meetings and letting the other groups have access to when these times will be.

V. New business

a) Logbook and Portfolio Expectations

The expectations for these are outlined on the course website. Be sure to write the Meeting Minutes in a large font in order to gain credit for these. Also, focus on reflections in the logbook and portfolio

b) Industry Panel Expectations

Make sure to bring a resume and possibly a business card for future employment.

c) Hospital Generators

Randy has revealed that generators at the hospitals are able to be paralleled and used. Avista is willing to give credit for retrofitting these generators to run off natural gas.

VI. Action Items

d) Smart Spokane: Read Pavan's Thesis

e) Smart Spokane: Get UI driver certified

f) Smart Spokane: Set up presentation of Snapshot Day with Jordan

g) Smart Spokane: Logbooks and Portfolio due 10/4/2016

h) Smart Spokane: Research alternative energy storage

i) Smart Spokane: Detailed definition of problem by next meeting

VII. Adjournment

Jacob Dolan adjourned the meeting at 8:30am.

Minutes submitted by: Dan Craig

Minutes approved by: Jesus De La Cruz

Smart Spokane Meeting Minutes

October 10, 2016

8:00 a.m.

I. Call to order

Daniel Craig called to order the regular meeting of Smart Spokane at 8:00am on September 26, 2016 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

[Secretary Name] conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, Jesus De La Cruz, and Jacob Dolan.

III. Approval of minutes from last meeting

Meeting was agreed. Additions will be addressed in the sections below.

IV. Open issues

a) Discuss updated Gantt Chart

Update the Gantt chart such that it contains specific dates for completion

b) Update on UI driver certification

See Becky for more details

V. New business

a) Discussion about Jordan's Master Controller

Nano-grids are not an option; the micro-grids can be connected in parallel with the grid.

b) Discuss Solar Panel Controller/Converter

It is not necessary to explore the circuit diagram of the converter; it can be used as black box.

Figure out the connector to the grid.

Find a model to bring to steady state.

Look into transients.

Know the locations of solar panels.

Look at Pavan's files in more detail.

Look into the garbage plant (by the hospital) find out how it is connected into the grid.

VI. Action Items

- c) Finish looking into Pavan's thesis
- d) Research on alternatives storage energy. And find out how safe it is, how it affects loads, where it needs to be place, buy properties if necessary.
- e) Look at the possibility of changing the river level.

VII. Adjournment

Daniel Craig adjourned the meeting at 8:30am.

Minutes submitted by: Jesus De La Cruz

Minutes approved by: Jesus De La Cruz

Smart Spokane Meeting Minutes

October 17, 2016

I. Call to order

Daniel Craig called to order the regular meeting of Smart Spokane at 8:00am on October 17, 2016 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

[Secretary Name] conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon. Additions will be outlined in Section IV and V below.

IV. Open issues

f) Discuss Snapshot Day

Professor Hess reviewed the snapshot slides that Jacob provided. The overall consensus was that the poster was good for the first snapshot, but some items needed to be clarified. In other words, the problem scope needs to be defined more clearly. This will be done on Friday between Jordan and the group.

Also, the batteries are just a small part of the energy storage in Pavan's Thesis. We may be thinking the storage will be greater than what is actually capable.

g) Update on UI driver certification

Jacob has completed the UI driver certification and will be the one who checks out the van for our upcoming field trips. Try and do as early as possible if the dates of use are known.

V. New business

c) Discussion about GHTC IEEE Conference

Professor Hess and Jacob both attended this conference during the weekend. Some new technologies were introduced that Jacob will disclose with the group at a later date.

d) Preparations for specifying the grid

Some grid specifications need to be done for next week's meeting. This will include all parameters that are specific and needed with our project.

e) Viper Converters

Jordan has offered a solution for a converter that monitors voltage on either side of the bus. Also, crossover of our group and Jordan's group may occur during load shedding.

VI. Action Items

j) Smart Spokane: Check out vehicle for field trips

k) Smart Spokane: Summary of our work in the past two weeks sent to Jordan by October 18

l) Smart Spokane: Discuss detailed project goals with Jordan on October 21

m) Create specifications for the grid by next meeting

VII. Adjournment

Jacob Dolan adjourned the meeting at 8:30am.

Minutes submitted by: Dan Craig

Minutes approved by: Jesus De La Cruz

Smart Spokane Meeting Minutes

October 24, 2016

I. Call to order

Jesus de La Cruz called to order the regular meeting of Smart Spokane at 8:00am on October 14, 2016 at Gauss/Johnson Micron Lab, University of Idaho.

II. Roll call

Jesus conducted a roll call. The following persons were present: Jordan Scott, Dan Craig, and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon.

IV. Open issues

a) Pullman Battery Tour - Jordan

The tour is at 10am Tuesday, October 25, at Sweitzer Engineering Laboratories (SEL). Therefore, the group will be leaving from the parking lot next to the steam plant by 9:30am at the latest. The trip is estimated to take 1-2 hours.

b) Spokane Avista Field Trip - Jordan

The meeting is at 9am Wednesday, November 2, at Avista Utilities Spokane Office. Therefore, the group will be leaving from the parking lot next to the steam plant by 7:00am at the latest. The group is estimated to return around 3pm. Lexi will be the primary guide. A side trip to Krispy Kremes after the meeting is unconfirmed.

c) Project Goals - Dan

The reordering of goals according to sub-project (i.e. Hospital generators) is complete. The Hospital and Relay goals are both Priority 1 but the hospital goals have a lower sub-priority. Therefore, work on the Relay goals should be done first and if progress is slowed by questions, fill in the time with work on Hospital goals.

V. **New business**

a) Roof Space Measurement - Jacob

Consider all roof space as potential locations for solar panels. Use the Google Earth program to Approximate the dimensions of the roofs. Warning: check building integrity because old buildings may not be able to support the extra weight of the solar panel setup.

b) Generator Nameplate for Sacred Heart - Daniel

The only specification on Sacred Heart's generators available is voltage. Additional information will likely be required for relays, and conversion kits.

c) Microgrid Resource - Jordan

Jordan has a Microgrid textbook for loan.

VI. **Action Items**

a) Smart Spokane: Check out vehicle for field trips

b) Jacob Dolan: Check with IT Department about Google Earth on University Computers.

c) Smart Spokane: Provide input and complete the Wikipage.

VII. **Adjournment**

Jesus de La Cruz adjourned the meeting at 8:30am.

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane Meeting Minutes

October 31, 2016

I. Call to order

Daniel Craig called to order the regular meeting of Smart Spokane at 8:00am on October 31, 2016 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

Daniel conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon. Additions will be outlined in Section IV and V below.

IV. Open issues

a. Project Goals – Daniel Craig

The group reviewed the Project Goals with Professor Hess. He noted that the word efficient should be replaced with appropriate as appropriate covers efficient. He also mentioned that most of the goals should be complete and are in Pavan's Thesis. He also noticed that the goals should be updated after the field trips according to what was learned.

b. Diesel to Natural Gas Conversion

Professor Hess mentioned that there are diesel/ natural gas hybrids that work by switching between the two sources. Daniel then mentioned that he found a hybrid that mixed the fuels together.

During this time Professor Hess mentioned the goal of the grants was to "Bring in new technology to Spokane for the benefit of the rate payers."

c. Clarification of Viper Relays and Caterpillar ATS integration with hospital generators

For the hospital generators, it will be solely ATS integration.

d. Roof space

The National Renewable Energy Laboratories provides program for calculating the solar panel space. The desired roof space should be listed in Pavan's Thesis.

V. **New business**

a. **Elevator Pitch Competition – Jordan and Professor Hess.**

It is not required to participate in the Elevator Pitch Competition.

b. **Itinerary for Spokane Field Trip**

Will be sent out by Jordan. The first location that will be visited will be one of the hydroelectric dams.

The van is rented and should leave around 7am on November 2, 2016 in order to reach the destination in time.

VI. **Action Items**

- a. Jordan Scott – Send out the itinerary for the Spokane Trip
- b. Jesus de La Cruz – Check out the vehicle for the Spokane Trip
- c. Daniel Craig – Set up the Project Design Review and reserve a room.
- d. Jacob Dolan – Pick up the keys and the vehicle and prepare the routes.

VII. **Adjournment**

Daniel adjourned the meeting at 8:25am.

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane Meeting Minutes

November 7, 2016

I. Call to order

Jesus de La Cruz called to order the regular meeting of Smart Spokane at 8:00am on November 7, 2016 at Gauss/Johnson Micron Lab, University of Idaho.

II. Roll call

Jesus conducted a roll call. The following persons were present: Jordan Scott, Dan Craig, and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon.

IV. Open issues

- a) Updated Project Goals – Dan will be updating these and uploading to the Google drive as soon as possible
- b) Set a University of Idaho share drive – Talk with Arvila about setting up this drive. Should be able to help us out.

V. New business

- a) ATS Preferred Model - Dr. Hess does not have any specific model to be used. Also, an ATS may not even be needed for our purposes. Smart Spokane should look into alternatives for switching of power.

Action Items

- a) Look into setting up the UI share drive
- b) Prepare for Preliminary Design Review

VI. Adjournment

Jesus de La Cruz adjourned the meeting at 8:30am.

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane Meeting Minutes

November 14, 2016

I. Call to order

Jacob Dolan called to order the regular meeting of Smart Spokane at 8:00am on November 7, 2016 at Gauss/Johnson Micron Lab, University of Idaho.

II. Roll call

Jacob conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, Jesus De La Cruz and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon.

IV. Open issues

- a) Action Item Check: Updated Project Goals – Project goals were uploaded by Dan last week and are now on the share drive.
- b) Hospital Generators: Do they turn on automatically? Professor Hess stated that they do turn on automatically and that a UPS system supplies the hospital until the generators are at a healthy voltage.

V. New business

- a) Preliminary Design Review – Located in the ECE Conference Room at 8 am on November 18. Group will meet later this week to show Jordan the progress made.

Action Items

- a) Send out invites by the 15th and arrive one hour early to the Design Review

VI. Adjournment

Jesus de La Cruz adjourned the meeting at 8:30am.

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane Meeting Minutes

November 28, 2016

I. Call to order

Daniel Craig called to order the regular meeting of Smart Spokane at 8:00am on November 28, 2016 at Gauss/Johnson Room 218, University of Idaho.

III. Roll call

Daniel conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, and Jacob Dolan.

IV. Approval of minutes from last meeting

Approval of minutes was agreed upon. Additions will be outlined in Section IV and V below.

V. Open issues

a.) Design Review Feedback

Professor Hess mentioned that Design Reviews are also a time for the seniors to ask questions of the professors not just for the professors to ask questions about the project. He also mentioned that the hour passes by much faster if the professors are arguing.

b.) Expectations for Snapshot #2

Professor Hess mentioned that the Advisory board meeting is held later that Friday. Therefore the professional engineers attending that meeting will show up to the snapshot event as well. A poster board is still fine for this snapshot, but more specifics will be required. If there are not on the board, the visitors will ask narrow pointed questions. Therefore it is a good idea to rehearse the elevator pitch. A solid pitch means less questions. "If they sense blood in the water they will be coming for you."

This is also a good opportunity to learn from the visitors.

Also, Professor Hess would like to see our plant to "land" the project included in the snapshot pitch. This will provide a decent idea of where the group needs to go.

VI. New business

a.) Airway Heights Garbage Energy Generation –Professor Hess.

Consider including the Airway Heights Waste Incineration facility as a potential renewable resource for the project. It should bring in a few more MW.

VII. Action Items

- a.) Jacob Dolan and Jesus De La Cruz – Identify whether the new 9:30 Monday time will work for next semester.
- b.) ? – Reserve a room for next semester general meetings for Smart Spokane
- c.) Jacob Dolan – pick up the poster board for Snapshot.

VIII. Adjournment

Daniel adjourned the meeting at 8:25am.

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane Meeting Minutes

December 5, 2016

I. Call to order

Jacob Dolan called to order the regular meeting of Smart Spokane at 8:00am on November 7, 2016 at Gauss/Johnson Micron Lab, University of Idaho.

II. Roll call

Jacob conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, Jesus De La Cruz and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon.

IV. Open issues

- a) Spring Semester General Meeting Time – Smart Spokane will now meet at 9:30 a.m. on Mondays. Make sure to reserve a room.
- b) Finals Week General Meeting? Still a Go? No, this is our last meeting for the rest of the semester
- c) Reminder: Jordan's February Event – Date not confirmed yet. Late January or early February probably.

V. New business

- a) Snapshot # 3 Presentation Options – Randy from Avista stated that an iPad should be integrated into our board in order to zoom in on the Google maps that show our proposed sites.
- b) Private RDG and Properly Handling Negative Loads – Professor Hess says that this might be an idea for the next senior design group. Although for now we should treat neighborhoods like a package or single load.
- c) Possibility: Indoor Energy Storage Locations – The Spaghetti Factory downtown is right off the rail line and has vacancy for a possible storage location.

Action Items

- a) Nail down how to land this thing
- b) Use Powerworld and continue working over break
- c)

VI. Adjournment

Jesus de La Cruz adjourned the meeting at 8:30am.

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane Meeting Minutes

January 20, 2017

I. Call to order

Jacob Dolan called to order the regular meeting of Smart Spokane at 1:30 p.m. on January 20, 2017 at Gauss/Johnson Micron Lab, University of Idaho.

II. Roll call

Jacob conducted a roll call. The following persons were present: Professor Herb Hess, Dan Craig, Jesus De La Cruz and Jacob Dolan.

III. Open issues

a) Reminder: Spring Semester's General Meeting Time – For now, the meeting time is set for 9:30 a.m. on Monday mornings. This will be confirmed at our next general meeting time.

b) Reminder: Jordan's February Event – Time is set for February 8 at 10 a.m.

c) Verify Computer Program for the Grid Model – Powerworld will be used for this project. Take advantage of Pavan's models that he has already created.

IV. New business

a) Design Review: Scheduling – For now, the next design review will be on Friday, February 3 at 1:30 p.m. This will be discussed further with the group and finalized at our next general meeting.

b) Idaho Falls Micro-grid Tour – Dan toured the INL Micro-grid project in Idaho Falls, ID and has gained a new point of contact for any questions that Smart Spokane may have.

Action Items

a) Setup Design Review time and location

b) Powerworld Learning

c) Finalizing PV locations/amount

V. Adjournment

Jacob adjourned the meeting at 1:50 p.m.

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane

Meeting Minutes

January 23, 2017

I. Call to order

Jesus De La Cruz called to order the regular meeting of Smart Spokane at 8:00am on January 23, 2017 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

Jesus conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon. There was no additions.

IV. Open issues

a. Design Review Feedback

According to Professor Hess, Avista's original model for Spokane's downtown distribution line was modeled in the program Synergiee. The rest of the system was modeled in Powerworld. Uidaho graduate, Pavan Penkey converted the Synergiee model to Powerworld. He then built the system in Synergy to double check how it worked. Smart Spokane members Dan and Jesus received error messages when they attempted to open Pavan's files in Powerworld 18. Hess recommended that they try Powerworld 19 and suggested that they could get access to Powerworld 19 from Jordan and the Master Control group.

b. Wednesday Avista Meeting

Smart Spokane needs to have a representative present at 10:00 am in the first floor conference room for the bimonthly Avista phone conference.

c. Avista Stage Gate Meeting

The Avista Stage Gate Meeting will be on Wednesday, February 8th, 2017. It will be held in Gauss/Johnson Room 218, University of Idaho at 10:00 am. Smart Spokane may need to supply a 1 to 2 slide summary of the work to be included in the Master Control group's presentation. At least one member will need to present the slides. A detailed one page report may also be required. This report should include the complete set of goals and a record of progress. As Professor Hess counsels "If you don't <include the goals and progress>, they will ask. It is better to head off the questions."

V. **New business**

a. **Rescheduling of the Design Review – Daniel**

Jordan explained that it might be better to reschedule the design review until after the weekend so more work may be done. Tuesday was ruled out as too close to the Stage Gate meeting for revision to be properly done. Monday was ruled out because Jordan could not attend until late at night. Hess would not be able to attend unless he moved a meeting with a graduate student. In the end, the Design Review was left at the originally scheduled time (Friday, February 3rd, 2017 at 1:30pm).

b. **Power world Model**

Graduate student Paven Penkey has assembled an extensive model of Spokane. Yes, the hydro-electric generators will be staying the model. Professor Hess mentioned that another group may be hired to create a better model for the hydro-electric generators. The Battery locations specified in the model are just theoretical (i.e. locations were proposed and the model analyzed for those locations). The 13 loads specified were listed according to importance. The question for us is “What loads can the system afford to supply? ” These loads will be treated as a grouping with regards to connection.

c. **Master Control Group’s Load Shedding**

According to Jordan, work on the load shedding is planned to occur after Stage Gate.

d. **Hospital Generators**

According to Professor Hess, the hospital generators are designed to supply more than enough power for the hospital. This is probably in the case that one of the generators is inoperable during an emergency. There should be no fear of crippling the hospitals’ own power supplies when syncing the generators to the grid. The generators should be able to run in parallel. Connecting to the grid requires use of the transfer switch. This switch is the input/output connection for the hospital and the rest of the Spokane network. If the river generators are on, the hospital generators may need synchronization.

VI. **Action Items**

- a. Jordan – Send an example of a report for the Avista Stage Gate Meeting to Dan.
- b. Dan – Reserve a room for the Design Review on Friday February 3rd, at 1:30pm.
- c. Smart Spokane – Review the Rankings of the Critical Loads.

VII. **Adjournment**

Jesus adjourned the meeting at 8:25am.

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane

Meeting Minutes

January 30, 2017

I. Call to order

Jesus De La Cruz called to order the regular meeting of Smart Spokane at 9:30 a.m. on January 30, 2017 at Gauss/Johnson Micron Lab, University of Idaho.

II. Roll call

Jacob conducted a roll call. The following persons were present: Professor Herb Hess, Dan Craig, Jesus De La Cruz, Jordan Scott and Jacob Dolan.

III. Open issues

a) Power World Access - Keys.

Talk to JJ to see on the possibility of accessing PowerWorld through VNP. Then do a follow up with Dr Hess about the plans on getting access to PowerWorld.

b) Master Control Group Progress

Jordan and his team are still working on doing some test modeling, and figuring out plans for load shutting scheme.

c) Refresher: Design Review II goals

Design review goals were turned in to Jordan and Dr Hess to be reviewed.

Action Items

a) Action Item: Daniel – Design Review Room Reservations

IV. Adjournment

Jacob adjourned the meeting at 1:50 p.m.

Minutes submitted by: Jesus De La Cruz

Minutes approved by: Smart Spokane

Smart Spokane Meeting Minutes

February 13, 2017

I. Call to order

Jesus De La Cruz called to order the regular meeting of Smart Spokane at 9:30 a.m. on February 13, 2017 at Gauss/Johnson ECE Conference Room, University of Idaho.

II. Roll call

Jesus conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, Jesus De La Cruz and Jacob Dolan.

III. Open issues

a) Power World Access – key: Jordan will be setting up card access to his office this week. Professor Hess will be putting our vandal card numbers into the system shortly. Also, Professor Hess and Professor Johnson will be asking Avista for more licenses to PowerWorld.

b) Stage Gate Meeting: Rescheduled for February 22, 2017 at 3:30. Room to be determined by Lynn.

IV. New business

a) Feedback on stage gate PowerPoint slides: Know which loads will be shed and prioritized and how they were prioritized. Figure out the cost to install these units. Change the slide to best case as Spring and not Spring/Fall.

b) Get contact information from Tom Rhinehart: Jordan has this information in his office.

V. Action Items

a) Logbook due Friday:

b) Jacob – update wiki-page:

c) Jesus and Dan – work on PowerWorld:

d) Smart Spokane – Send Jordan Two Page Report by Wednesday, February 15, 2017

VI. Adjournment

Jesus adjourned the meeting at 10 a.m.

Minutes submitted by: Dan Craig

Minutes approved by: Smart Spokane

Smart Spokane Meeting Minutes

February 27, 2017

I. Call to order

Jacob Dolan called to order the regular meeting of Smart Spokane at 9:30am on February 27, 2017 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

Jacob Dolan conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, and Jesus De La Cruz.

III. Open issues

A. Power World Access – Keys

There are two computers on the senior design lab that contains PowerWorld with full licenses.

B. Stage Gate Review

Avista showed a great interest on the RTDs. The implementation of RTDs on Avista would be a great idea for future senior design and master thesis.

IV. New issues

A. Next Stage Gate

The next stage gate will take place sometime on April.

B. Next Avista Visit

The trip to Avista the new senior design group will do will be more or less the same as the one Smart Spokane has done last semester.

C. Meet and Greet with Full Team – Integration Talks

Meeting concerning the integration talk will be set up once the project is on the final stage.

V. Action Items

Jacob – update wikipage

Jesus and Dan – Work on PowerWorld

VI. Adjournment

Jacob adjourned the meeting at 10:00am.

Minutes submitted by: Jesus De La Cruz

Smart Spokane Meeting Minutes

March 6, 2017

I. Call to order

Daniel Craig called to order the regular meeting of Smart Spokane at 8:00am on March 6, 2017 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

Daniel conducted a roll call. The following persons were present: Professor Herb Hess, Jesus De La Cruz, and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon. There were no additions.

IV. New business

d. Method of Submitting Deliverables

The deliverables will be submitted in two portions; a hard copy in a nice folder and a digital copy.

The following will be included in the physical copy: Portfolio, logbooks, Final Design Report, the final Project Poster. The Final Design Report is for just Smart Spokane's Section of the Microgrid work. For the layout and design of the Final Poster, reference the final posters of previous teams displayed in the hallways of the engineering buildings.

The following will be included in the online copy: digital copies of the documents included in the physical folder, the Powerworld models, the Google Earth Diagram, the accompanying excel documents. These need to be saved to an online folder separate of any one computer and submitted on a memory stick or CD.

The online copies and the final report will be turned into Dr. Hess. The Portfolio and the logbooks will be turned into Dr. Feng Li.

e. Technical Presentation Requirement

The Capstone Senior Design Class has a requirement that each team must do a technical presentation near the end of April. There are only 10 slots for a technical presentation during the Annual Engineering Design Expo. The team was wondering if they could do theirs during the last stage gate or close to it. Dr. Hess suggested that they check with Jordan Scott to see if that is allowable.

f. Remote Access to Powerworld for Senior Design Expo

Dr. Hess verified that the team can use remote access to the new Powerworld licences in order present the power world models at the expo. See J.J. for the details and the preparations. The department also has 2 projectors to check out. Reserve early, demand will be high on the day of expo.

g. Undergraduate Research Expo

This expo occurs on the 24th of April. Smart Spokane is required to attend the Undergraduate Research Expo in a similar capacity of a Snapshot day. The Final Poster is required for this expo. An Abstract report (50-100 words) is due by the 3rd of April.

h. Misc.

The bi-monthly meeting will be held this week at 10:00am.

This Tuesday at 11:30am, the Microgrid team will be meeting with Avista representatives about potential project ideas. Actual results vary. Dr. Hess will likely attend or swap with Dr. Chakchouk.

VI. Action Items

- d. Team – Portfolio, Team Member citizenship forms
- e. Jordan – Run project proposal ideas past Avista. Inform team of proper time for technical presentation
- f. Dan & Jesus –Powerworld Simulations
- g. Jacob – Update Wikipage and work on Solar Panel Modules

VII. Adjournment

Daniel adjourned the meeting at 10:10am.

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane Meeting Minutes

March 20, 2017

9:30 a.m.

Type of Meeting: Regular

Meeting Facilitator: Jacob Dolan

Invitees: Professor Herb Hess, Jordan Scott, Dan Craig, Jesus De La Cruz, Jacob Dolan

I. Call to order

II. Roll call

III. Open issues

A. Snapshot Review – Dr. Hess said that our poster board was very good. He asked us if he could keep it to show future students.

B. Power World Progress – Jesus and Dan have started and are trying to pin down where the critical loads are located. Also, there is a slight issue with some of the bus voltages that need to be figured out.

C. Avista Proposal – Jacob and Jesus discussed future work with the project continuing into graduate school.

IV. New issues: Open Discussion – There was no more open discussion during this portion of the meeting

V. Adjournment

Smart Spokane Meeting Minutes

March 27, 2017

I. Call to order

Jesus De La Cruz called to order the regular meeting of Smart Spokane at 8:00am on March 6, 2017 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

Daniel conducted a roll call. The following persons were present: Professor Herb Hess, Daniel Craig, and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon. There were no additions.

IV. Old Business

a. Snapshot Review Follow-Up

Professor Hess noted that the poster board was good. He complimented on the prominent title placement and the visibility of the team member names. However, we also need to increase visibility for people with poor eyesight.

Professor Hess commented that the specifications looked “orphaned.” It needs a title to help convey what the section is about. He also explained that we don’t need all our work to be on the poster. The hardest part for the final poster will be “What not to put on the board.” For the options slide (Deliverables) add Analysis or Documented Recommendations.

Professor Hess then reminded that we need to finish all processes by April 14th. Everything must be done by May 5th.

V. New business

i. Final Poster Board

You must convey only the main items. Make it eye candy (i.e. make it appealing for the eyes). For a great example look at the ads in technical or trade publications. The eye often wanders from the lower right to the upper left to the upper right and finally down the bottom left. Therefore if you want to hide a part of the poster, place it by the rim on the lower left corner. Place show pieces in the center. Don’t forget color! The background should be dull while accented importance with bright red and similar colors. Do not present a wall of text. Therefore do not list all the deliverables but enough to convey the message that we’ve done great stuff. The name or main point is usually in the upper right. Design your board with your audience in mind. Do fun stuff and break out of the 3x3 grid trend. Include a picture of people. Perhaps

Chris Willson or someone else who is outspoken in our graduating class (Tess, Shea, Brandan Napsinger). Above all else, Have Fun!

j. Upcoming Presentations

The next presentation is at the Undergraduate Research Expo on April 24th.

k. Technical Presentation Requirement

Schedule it with Avista for stage gate. It should be 10 minutes max so only one speaker. Stage gate's date is still not settled.

l. May 1st Meeting

The status of the meeting is still undecided. Professor Hess informs us that 9/10 bosses expect their employees to have a suggestion when a conflict occurs with a meeting.

m. Avista Group Meeting

Occurs on Tues. May 2nd. This internal meeting will be in IGC conference room at 2:00pm.

n. Critical Loads

No one knows about why Pavan split the loads.

VI. Action Items

- h. Team – Undergraduate Research Expo Abstract Due Mon. 4/3/2017
- i. Team – Undergraduate Research Expo Sign Up
- j. Reserve a room for the Tues. Avista Meeting.

VII. Adjournment

Daniel adjourned the meeting at 10:10am.

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane Meeting Minutes

April 3, 2017

I. Call to order

Dan Craig called to order the regular meeting of Smart Spokane at 9:30am on April 3, 2017 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

Jacob Dolan conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, and Jesus De La Cruz.

III. Open issues

A. Jordan: Next StageGate?

Jordan stage gate is still pending due to his load shedding scheme program.

StageGate might not take place until the summer.

B. Power World Questions

The breaker on load 7 and 5 are probably disconnected because they are connected to other loads and could represent additional loads connected to them. Account for them.

C. Undergraduate Research Abstract due today

- Keep it simple.
- Focus on the technical paper get them done by the time we are done with school.
- About 10-15 pages without a table of content.
- Good practice for thesis.

IV. Action Items

Jacob – update wikipage

Jesus and Dan – Work on PowerWorld

V. Adjournment

Dan Craig the meeting at 10:00am.

Minutes submitted by: Jesus De La Cruz

Smart Spokane Meeting Minutes

April 17, 2017

I. Call to order

Jesus De La Cruz called to order the regular meeting of Smart Spokane at 9:40am on April 17, 2017 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

Jesus conducted a roll call. The following persons were present: Professor Herb Hess, Jrodan Scott, Daniel Craig, and Jacob Dolan.

III. Approval of minutes from last meeting

Approval of minutes was agreed upon. There were no additions.

IV. Old Business

a. Biweekly Avista Conference Call

The Avista conference call is this Wednesday. Smart Spokane need to send Jordan a brief summary of their progress and a member to attend the meeting.

IV. New business

a. Emergency Poster Board Creation

If the copy center has a long queue, the team use Kinkos to get the final poster board printed.

b. Final Report

A reminder: 10-15 pages single spaced. The format will be similar to Pavan's thesis. This includes having a table of contents and a references list.

c. North American Power Symposium

The extended group needs to write 4-6 pages in IEEE standard for this symposium.

d. Powerworld Pavan's Load Voltages

Some loads are at 480 V. Others are at 13.2 kV in Pavan Penkey's Powerworld model. No one knows why. Jordan should send a report with the concerns to Randy at Avista. Dr. Hess recommends looking into Pavan's documentation to find the answer.

VI. Action Items

1. Team – Complete Filing the Electronic Documents for Jordan Scott

VII. Adjournment

Minutes submitted by: Jacob Dolan

Minutes approved by: Smart Spokane

Smart Spokane

Meeting Minutes

April 24, 2017

9:30 a.m.

Type of Meeting: Regular

Meeting Facilitator: Jesus De La Cruz

Invitees: Professor Herb Hess, Jordan Scott, Dan Craig, Jesus De La Cruz, Jacob Dolan

- I. Call to order
- II. Issues
 - A. Expo technical presentation format – Dr. Hess says that the presentation should be very similar to StageGate and Design Reviews. This means that we will be having a powerpoint. Have one or two people presenting while another is at the booth. 15 minutes of presentation with 5 minutes of questions.
 - B. Length of Mondays Undergraduate Research Symposium – The length is two hours, however we only need to be there for one hour. Dr. Hess will stop by and report on our performance.
 - C. Open Discussion – StageGate is still set for May 12 at 12:30 in IRIC 32. Expo will go from 9 a.m. to 4 p.m. Be ready to setup at about 8 a.m.
- III. Action Items
 - A. Work on final report – Jordan wants us to make sure that it is the same format as Pavans Thesis. Should be about 15 pages with a lot of diagrams to show and represent the work we have been doing.
- IV. Adjournment

Smart Spokane Meeting Minutes

May 2, 2017

I. Call to order

Dan Craig called to order the regular meeting of Smart Spokane at 9:30am on May 2, 2017 at Gauss/Johnson Room 218, University of Idaho.

II. Roll call

Dan Craig conducted a roll call. The following persons were present: Professor Herb Hess, Jordan Scott, Dan Craig, and Jesus De La Cruz.

III. Open issues

A. Expo Feedback

- Smart Spokane did a great job.

B. Action Items Turning in Process

- The Talk with the student that will do the continuation of the project to update him with what we have done so far.
- Keep the presentation under 7 minutes long.
- Prove a flash drive containing all the documents Smart Spokane has.
- Use APA format for the final report.

IV. Action Items

- A. StageGate PowerPoint – May 3
- B. Logbooks – May 5
- C. Portfolio - May 5
- D. Turn in Poster - May 5
- E. Wikipage - May 5
- F. Hard Copy/Electronic Archive - May 5
- G. 10-15 Page Report - May 5

V. Adjournment

Dan Craig the meeting at 10:00am.

Minutes submitted by: Jesus De La Cruz