EE 492 sdmay24-30 “New Nuclear”

Bi-Weekly Report #1

Team Members: Dana Boor, Jeremy Yost, Damien Henry, Zachary Hainline, Mason Richards, Muhammad Syukri Bin Ahmad Zainal Akmar.

On January 22nd, 2024 our team held our kickoff meeting for the semester with our advisor, Dr. James McCalley. All team members were present except Mason Richards, who had a conflict with his work schedule and was excused from the meeting. The following agenda was sent out in advance and outlines what was to be discussed at the meeting:

MEETING AGENDA

Location:	Coover 2222
Date:	January 22nd, 2024
Time:	3:00 pm

AGENDA DETAILS

I. INTRODUCTIONS

a. Dana will take attendance.

II. NEW BUSINESS

a. Discuss schedule for weekly meetings.

b. Review of our design from EE 491 (What did we accomplish? What did we learn? What next steps are we planning?)

c. Discussion of any changes or improvements to the evaluation criteria derived in EE 491.

d. Discussion of the objectives and requirements for EE 492.

e. Discussion of the schedule and milestones for the project.

f. Review our team process and discuss any changes or improvements.

g. Q&A session.

III. OLD BUSINESS

a. N/A

IV. CONCLUSION

a. Next meeting will be held week of January 29th.

The following are detailed discussion points from the meeting, with decisions made and actions to be taken:

a. Discuss schedule for weekly meetings.

Our team decided to alternate our weekly meetings between Mondays and Wednesdays from 3-4pm, allowing all team members to participate in meetings at least once every two weeks (Mason Richards and Jeremy Yost have conflicts with class and work schedules that prevent them from attending each week). This plan was agreed upon by group members and our advisor.

Dana Boor reserved conference rooms in Coover Hall for all team meetings throughout the semester.

b. Review of our design from EE 491 (What did we accomplish? What did we learn? What next steps are we planning?)

As a team, we reviewed the objectives given to us at the beginning of EE 491 and discussed the status of each objective.

c. Discussion of any changes or improvements to the evaluation criteria derived in EE 491.

As of right now, our team has decided to continue carrying out the plan we developed in EE 491. We will alter the plan as a group if necessary.

Dr. McCalley asked us to describe how we will communicate our final design. Our team will use a written report, power point presentation, and a poster board to share our design with others.

d. Discussion of the objectives and requirements for EE 492.

For calculating the cost to benefit analysis, our team found that we still need to determine the following: The costs associated with construction, fuel, O&M, Land, decontamination and demolition, and finance. We also need to determine prices for the sale of electricity and reserve benefit.

Dr. McCalley recommended using EIA and NREL data for these estimations.

For use of CEP software, we need to find ramping rate, reserve benefit, heat rate, fuel costs, VOM/FOM, MISO energy prices.

We also need to identify components from each design we want to see in the final design. Components need to be compatible with each other.

e. Discussion of the schedule and milestones for the project.

The major milestones for our project for this semester will be detailed in the schedule presented by the team to Dr. McCally the week of 1/29. Overarching project milestones were reviewed earlier in the meeting.

f. Review our team process and discuss any changes or improvements.

The plan developed in EE 491 for developing our recommended nuclear reactor design will be adhered to this semester. If changes become necessary, we will decide on those as a group.

g. Q&A session.

Dr. McCalley asked, “In the end, what do we really want to show?” We discussed the end-of-project deliverables for our team (as described in discussion point c)

Additionally, we discussed how to use our testing software to find out what constraints are necessary for new nuclear to be possible/profitable?

Next Steps:

Week of 1/29: Team will present project schedule for this semester to Dr. McCalley.

Week of 2/12: Team will present in detail the components of each team member’s recommended design that we believe should be in the final design, along with heat rate and ramping rate information for each design.