UNC CHARLOTTE
*The* WILLIAM STATES LEE COLLEGE *of* ENGINEERING

# Senior Design Project Description for SPRING 2017

# Project Title: Conceptual Design of an Escort Railcar using a Buffer Railcar (AREVA_RAIL)

Supporter: AREVA

Supporter Technical Representative: ASSIGNED

Faculty Mentor: _____ ASSIGNED __X__ TBD (check one)

Single Team __X__ Dual Team _____ (check one)

Personnel (EN/ET): _____ E, _____ Cp, _____ Cv, __5__ M, _____ SE

(Complete if the number of students required is known)

Expected person-hours: (250 per student)

**Description of Project:**

Spent nuclear fuel and other radioactive waste from nuclear facilities must be safely transported to waste disposal and storage facilities. Rail has been determined in several studies to be a good method to transport the radioactive waste. For transport of radioactive waste by rail three types of cars are required: railcar to carry the waste, buffer car, and escort car. This project is to design the escort car using a buffer railcar.

**Initial Project Requirements (e.g. weight, size, etc.):**

There will be an escort railcar using a buffer railcar with a Sea-Land container-like attachment that:

1. Meets AAR-2043 standards
2. Meets Escort Car requirements
3. Can be loaded and unloaded by a crane
4. Utilizes only the available buffer car attachment points (no modification to buffer car)
5. Establish economics of various attachments

**Expected Deliverables/Results:**

A complete design with cost estimate for the system is to be provided.

**List here any specific skills or knowledge needed or suggested (If none please state none):**

None