

# Zachry Nuclear Engineering

## RADTRAD-NAI Training Syllabus

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Topics generally covered in the introductory training course include:

- Introduction
- Basic Dose Analysis Topics
- Meteorological Data and Atmospheric Dispersion Factors
- Source Terms
  - Core design
  - Fuel failures
  - Reactor Coolant System inventory
  - .NIF and .DCF files
- Iodine Spiking
  - Pre-accident
  - Accident initiated (concurrent)
- Control Room HVAC Modeling (with recirculation and in-leakage)
- Steam Release Calculations
- Compliance Matrix
- RADTRAD Model Limitations
- Design Basis LOCA Modeling
  - Sprays
  - Containment release
  - ECCS
  - Dose point set-up
- Technical Support Center/Emergency Operating Facility Considerations
- Timestep Sensitivity
- Example Exercises
  - RADTRAD-NAI fundamentals
    - Logging into Zachry Nuclear website
    - Using the graphical user interface
  - Fuel Handling Accident
  - Design Basis Loss of Coolant Accident
  - Control Rod Drop with Loss of Offsite Power
  - Main Steamline Break outside Containment
  - RADTRAD-NAI input changes for different cases of the same accident (e.g. iodine spiking)