



DOME Front End Engineering Experiment and Design

April 2024

Changing the World's Energy Future

Troy P Burnett



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NRIC

National Reactor
Innovation Center

DOME Front End Engineering Experiment and Design

FEEED

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04/2024



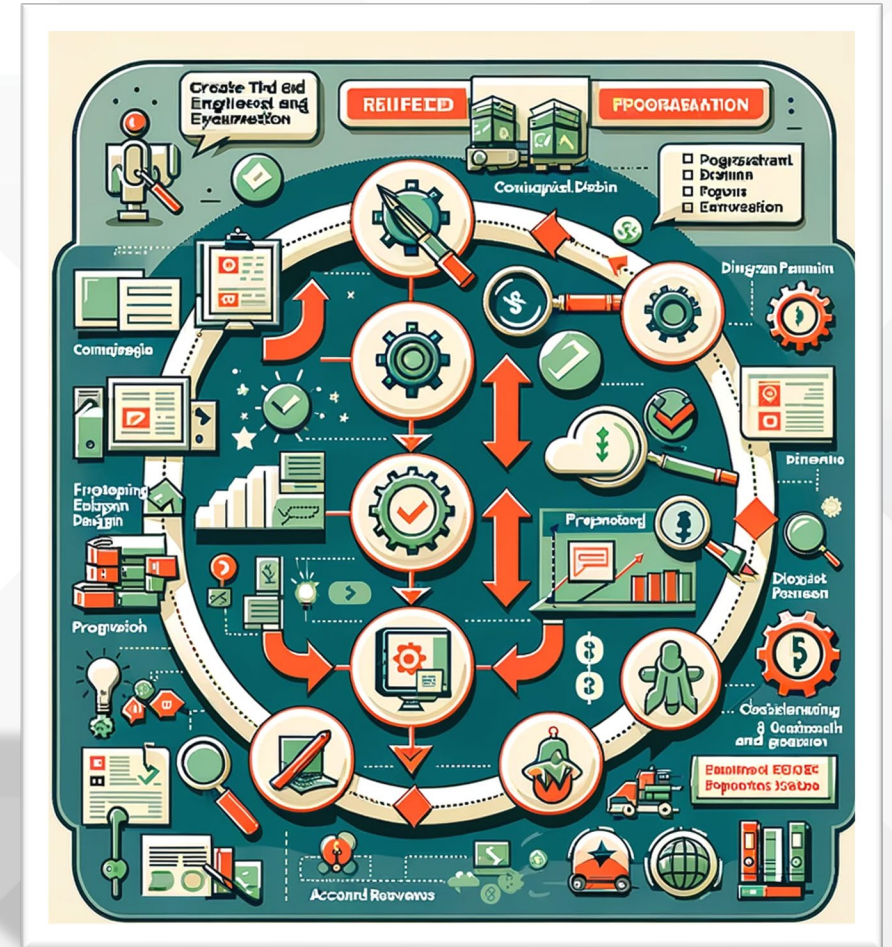
FEEED Overview

- Steps for Initiating FEEED
- Explore the FEEED Process
 - Key Activities
 - Key Deliverables
- Provide an update on FEEED Progress with FEEED Developers
 - Radiant
 - USNC
 - Westinghouse



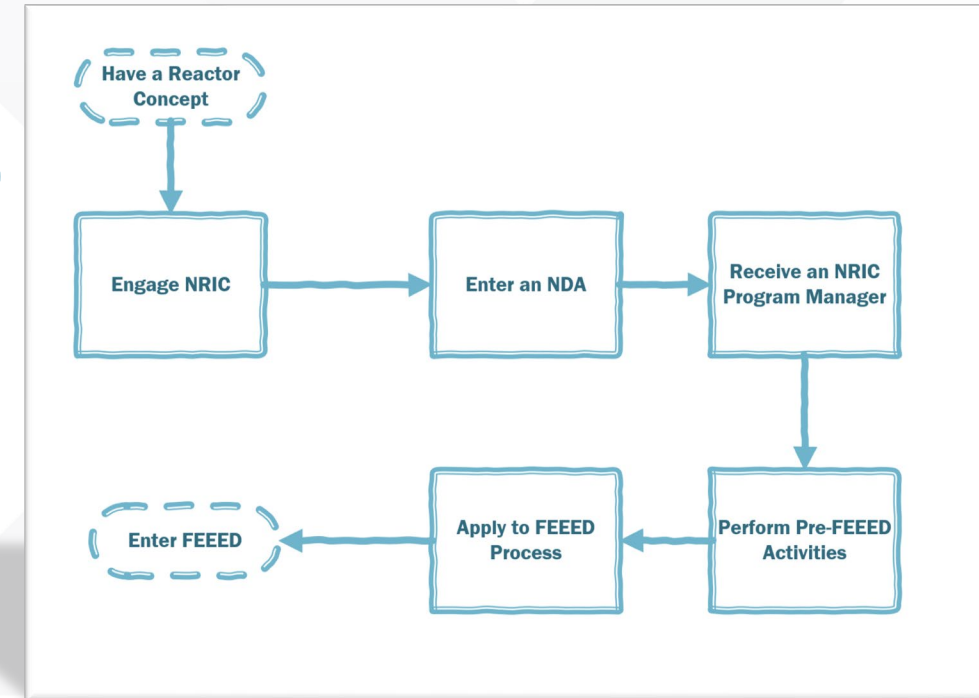
DOME Test Bed Program

- This has never been done before
- No developed program
- There are a lot of known unknowns
- Process, procedures,..... Being developed as we go
- Thank you for helping navigate
 - Radiant
 - USNC
 - Westinghouse



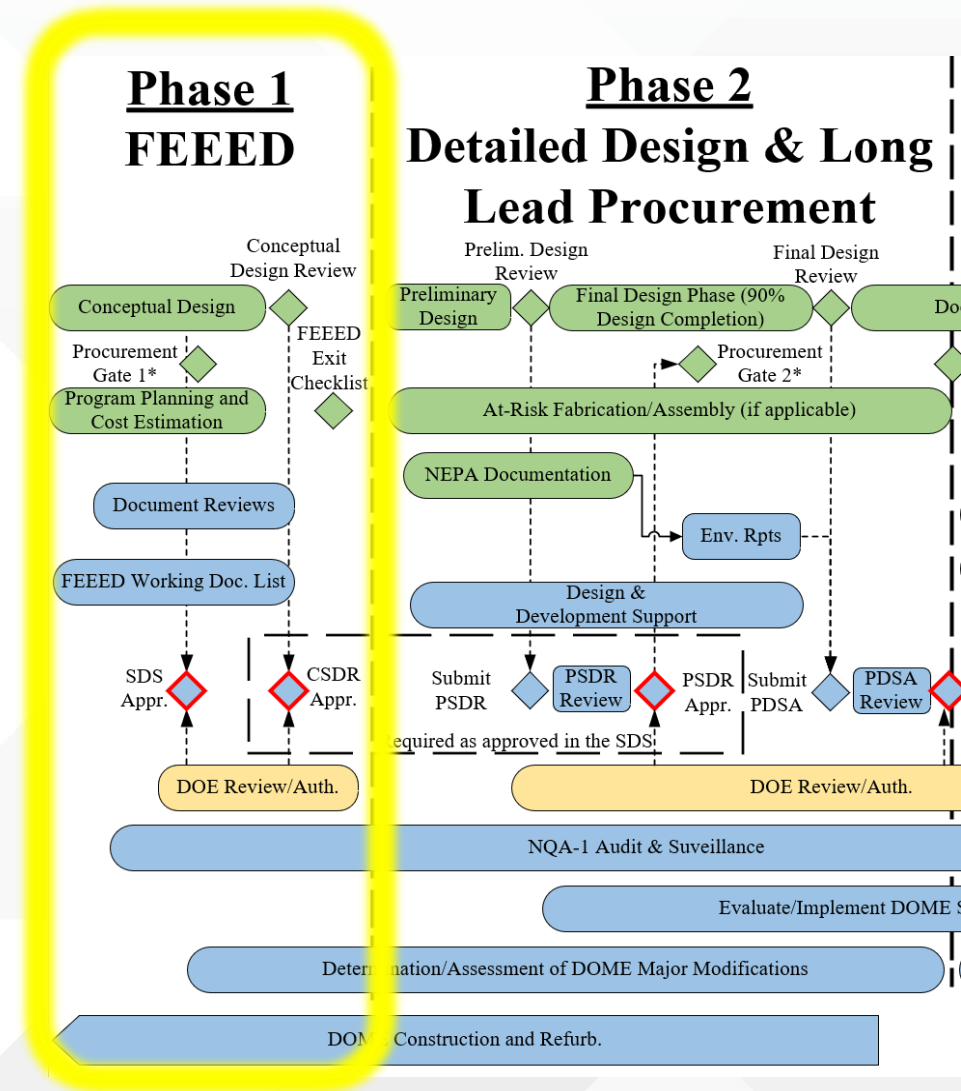
Initiating FEEED

- Contact NRIC
 - Introduce your company and project
 - Enter a Non-disclosure agreement (NDA)
 - Receive an NRIC Program Manager
- Pre-FEEED activities
 - Qualified Supplier
 - Pre-conceptual design input from NRIC
 - General discussion and guidance
 - Determine FEEED Funding/Contracting Mechanism
- Apply to Enter FEEED Process



FEEED Key Activities and Deliverables

- Key Activities
 - Program Planning
 - Cost Estimate
 - Conceptual Design
 - Experiment Design
- Deliverables
 - Safety Design Strategy
 - Experiment Design Outline
 - Conceptual Design Review
 - Conceptual Safety Design Report





FEEED Funding/Contracting Mechanism

- DOE Cost Share
 - Dependent on funding availability
 - Can cover costs associated with
 - NRIC personnel
 - Some developer costs
 - Contract type
 - CRADA
 - Subcontract
 - Implementation time up to 4 to 6 months
- Developer Funded
 - Developer covers all NRIC costs
 - Contract Type
 - CRADA
 - SPP
 - Implementation time up to 4 to 6 months



Future Work

- Will continue to engage
 - New advanced reactor developers
 - Existing Pre-FEEED developers
- Will entertain FEEED applications
 - As developers progress and are ready
 - As funding becomes available
 - Cost share opportunities
 - NRIC covered costs
 - As resources are available
 - As demand increases





FY 23/24 FEEED Process

- Expression of Interest (EOI) advertised in June
 - Received seven expressions of interest
- RFP solicited in July
 - Received five proposals
- Awarded three 80/20 cost share contracts in Fall of 2023
 - Radiant
 - USNC
 - Westinghouse





FY 24 FEEED Work

- Safety Design Strategy
 - Westinghouse received DOE acceptance December 2023
 - Radiant has submitted
 - USNC working on submittal
- Held in person design reviews
 - Westinghouse
 - Radiant
- Strategic Planning
- Consultation and Collaboration
 - Ongoing document and design reviews
 - Fuel cycle planning
 - Fuel Specification
 - Fuel fabrication



FY 24 FEEED Work Continued

- Conceptual Safety Design Report
 - Radiant
 - Completed review
 - Working on submittal
 - USNC
 - Developing design and documentation
- Preliminary Safety Design Report
 - Westinghouse
 - Completed review
 - Incorporating Comments
 - Submitted to INL for review





FY 23/24 FEEED Status Updates

- Westinghouse – Erin Orga
- USNC – Wes Deason
- Radiant – Elliott Korb





NRIC

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5/21/2024

www.nric.inl.gov