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Pre-Application Meeting to Discuss Model No. RAJ-II Letter Authorization to Allow the Shipment of GNF FeCrAl Clad Rods in Lead Test Assemblies

June 21, 2017

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Purpose – Pre-application meeting to discuss future submittal of the Model No. RAJ-II letter authorization to allow the shipment of FeCrAl clad rods in Lead Test Assemblies (LTA)

Open Portion of Meeting

- Introduction/Opening Remarks Jim Harrison
- Schedule Needs for Letter Authorization Jim H
- Characteristics of FeCrAl Cladding Russ Fawcett
  a. Introduce FeCrAl Cladding Material
  b. Summary of FeCrAl LTA Goals and Objectives

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Closed Portion of Meeting

- Overview of Differences Between FeCrAl Lead Test Rod Segments and Current CoC Russ F & Kate Martin
- Discuss Approach and Content of the Letter Authorization in the Following Areas:
  - a. Structural Evaluation — Kate Martin
  - b. Thermal Evaluation — Mine Yilmaz
  - c. Containment Evaluation — No Impact
  - d. Shielding Evaluation — Chris Kmiec
  - e. Criticality Evaluation — Chris Kmiec
  - f. Package Operations — No Impact
  - g. Maintenance — No Impact
- Closing Summary

Schedule

Ship Date – Early December 2017

Letter Authorization Approved – Mid Nov 2017

Submit Letter Authorization Request – Mid July

Pre-Submittal Meeting – Mid June

GNF FeCrAl Introduction Call – April 6

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Overview of GNF's ATF Lead Test Assembly (LTA) Program

Russ Fawcett
June, 2017

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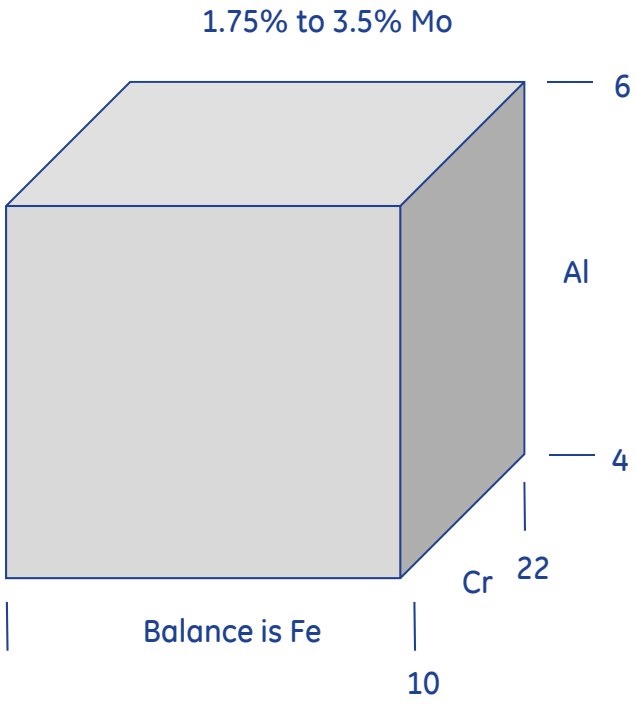
DOE Phase 2 Accident Tolerant Fuel Program

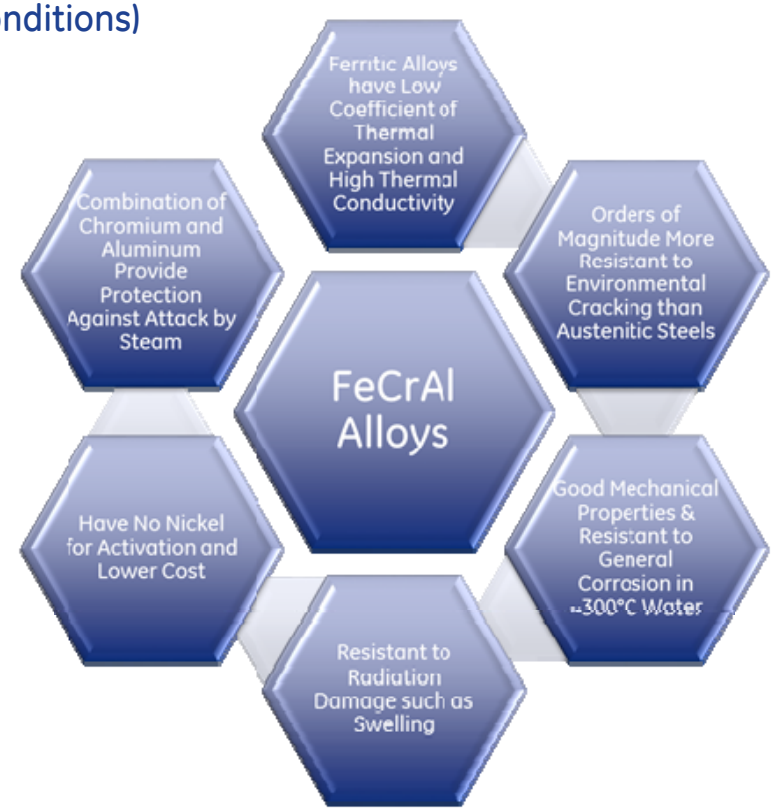
The objective of GNF's Phase 2 ATF program is to: 1) install GNF FeCrAl clad lead fuel rods (LFR) into a commercial reactor for material characterization, 2) better describe how a transformation to ferritic steel cladding would impact safety and operation, and 3) develop the material characterization to support a BWR fuel assembly design that is matched to the material.

Ferritic steel cladding (FeCrAl) continues to be a promising candidate as an alternative to the current fuel system with high likelihood of feasibility and safety & operational benefit.

The FeCrAl Space



- GNF FeCrAl is considered to be in the ferritic stainless steel family
  - The function of Cr is to provided corrosion resistance at normal operating conditions and AOO & DBA
  - The function of Al is to provide high temperature oxidation resistance at BDBA conditions
  - The purpose of Mo is high temperature strength (i.e. at accident conditions)



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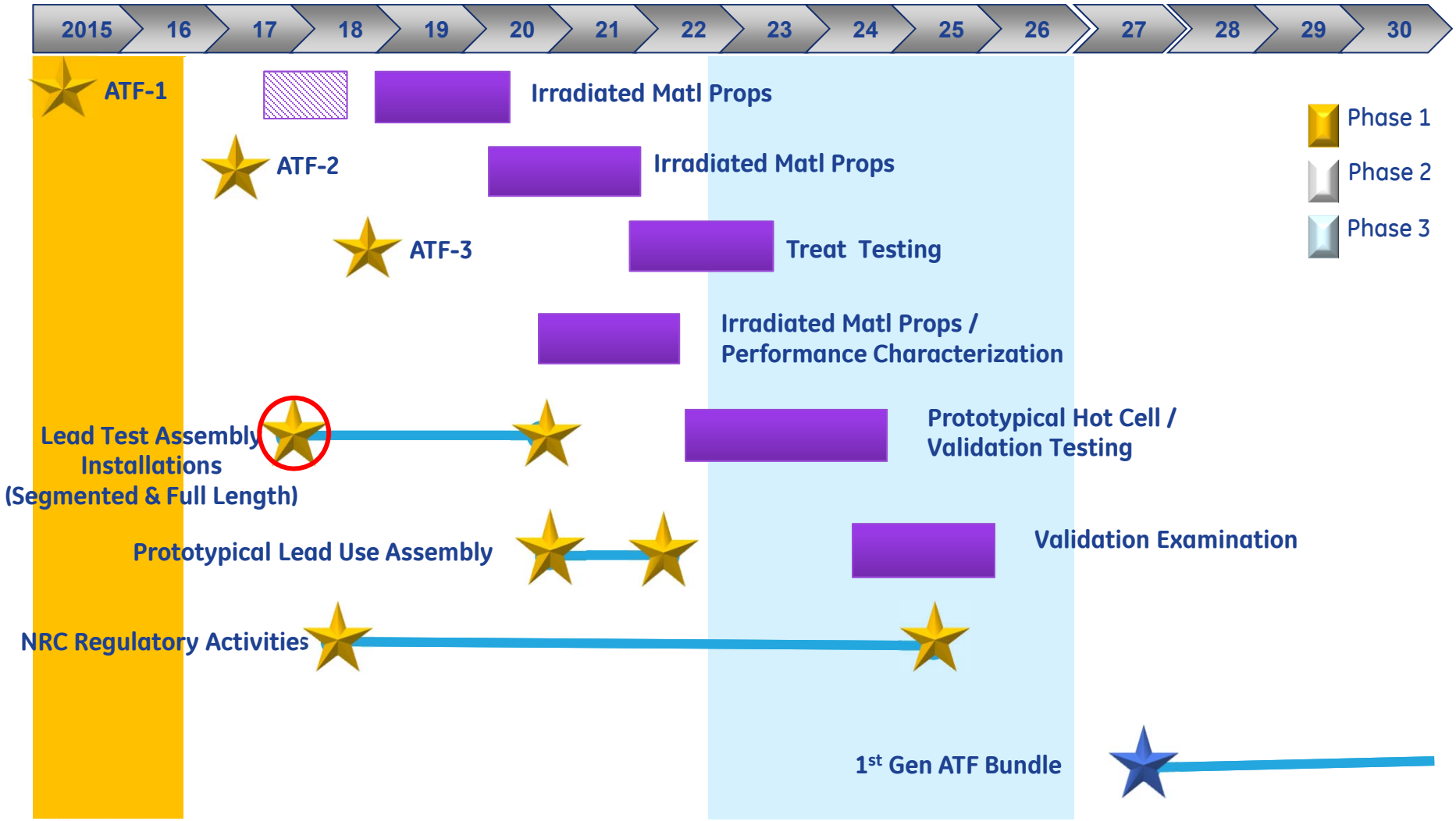
Looking Forward



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Initial Installation & RAJ-II Letter Authorization

- GE/GNF is partnering with SNC to install a small quantity of Lead Fuel Rods (LFR) into otherwise normal GNF2 fuel assemblies for installation into Plant Hatch, Unit 1 Cycle 29
  - GNF2 is GNF's production 10x10 fuel assembly
  - GNF2 is operating in numerous BWRs domestically and normally transported in the RAJ-II
  - A few normal fuel rods are replaced by the subject GNF FeCrAl clad LFRs
- Several parameters associated with the LFRs fall outside of the RAJ-II CoC (e.g. cladding material & dimensions)
- As such, a Letter Authorization request is in the final stages of preparation and scheduled to be submitted to the NRC in July
  - All requirements of the RAJ-II SAR addressed