

# USED FUEL STORAGE AND TRANSPORTATION ISSUE RESOLUTION PLAN

Issue Number: I-20-03

Performance Margins Recommendation: IV-1,3,4,5

Rev. 6.18.2020

**Title:** Develop industry Best Practices guide for thermal modeling

## I. Summary of Resolution Plan

Industry, NRC, and EPRI will interact in public meetings and workshops as well as through letters to achieve the following:

- Identify the current issues for industry with the implementation of the current best practices guidance
- Using the identified recommendations from the Thermal Modeling and Decay Heat PIRTs (Recommendation IV-1), create guidance for an informed approach, including (for example):
  - actionable definition of gross rupture and related fuel cladding integrity performance metrics such as use of stress analysis + peak clad temperature or average rod temperature vs. peak clad temperature
  - greater flexibilities with more accurate decay heat models
  - realistic ambient temperature measurements vs. upper bound assumptions
  - graded approach for mesh convergence (currently costly GCI needed by all vendors)
- Implement the guidance into a Topical Report.
- Submit the Topical Report to NRC for approval and endorsement (Note this action will accomplish Recommendation IV-2)

## II. Proposed Actions and Due Dates

ACTION	RESPONSIBLE PARTY	DUE DATE
1. Complete initial revision of RIRP	NEI	Complete
2. Review and discuss guidance to be developed at workshop	NEI & NRC	Complete
3. NRC/NEI Workshop featuring EPRI presentation on gross rupture definition, fuel metrics and formation of an expert panel to define gross rupture and inform development of fuel cladding performance metrics	EPRI/NRC	Complete
4. NRC/NEI Workshop that includes NEI presentation and review of the revised Thermal RIRP I-20-03 and EPRI presentation of graphic showing connection of PIRTs to thermal recommendations	NEI & NRC	June 23, 2020
5. Thermal Modeling, Decay Heat Modeling, and Fuel Performance PIRT Public Reports	EPRI	June 30, 2020
6. Definition of Gross Rupture PIRT/Workshop	NEI/EPRI & NRC	August 2020
7. Workshop on Alternative Fuel Performance Metric(s) to Ensure no Gross Ruptures: <ul style="list-style-type: none"><li>• Thermal Modeling/Stress Analysis</li><li>• Fuel Performance Metric (alternate criteria – average, % of cladding, etc.)</li></ul>	NEI/EPRI & NRC	November 2020
8. Gross Rupture PIRT/Workshop Technical Basis Report	EPRI	January 2021

<b>ACTION</b>	<b>RESPONSIBLE PARTY</b>	<b>DUE DATE</b>
9. Develop draft Topical Report for thermal modeling and performance metrics	NEI/EPRI	January 2021
10. Alternative Fuel Performance Metric PIRT/Workshop Technical Basis Report	EPRI	March 2021
11. Review draft Topical Report in follow-on public workshop	NEI & NRC	TBD
12. Revise TR based on workshop alignment	NEI	TBD
13. Submit TR following revision and review	NEI	TBD
14. NRC provides letter affirming applicability of TR	NRC	TBD
15. NRC initiate review, approval, and endorsement of Topical Report (i.e. implementation of Recommendation IV-2)	NRC	
16.		