

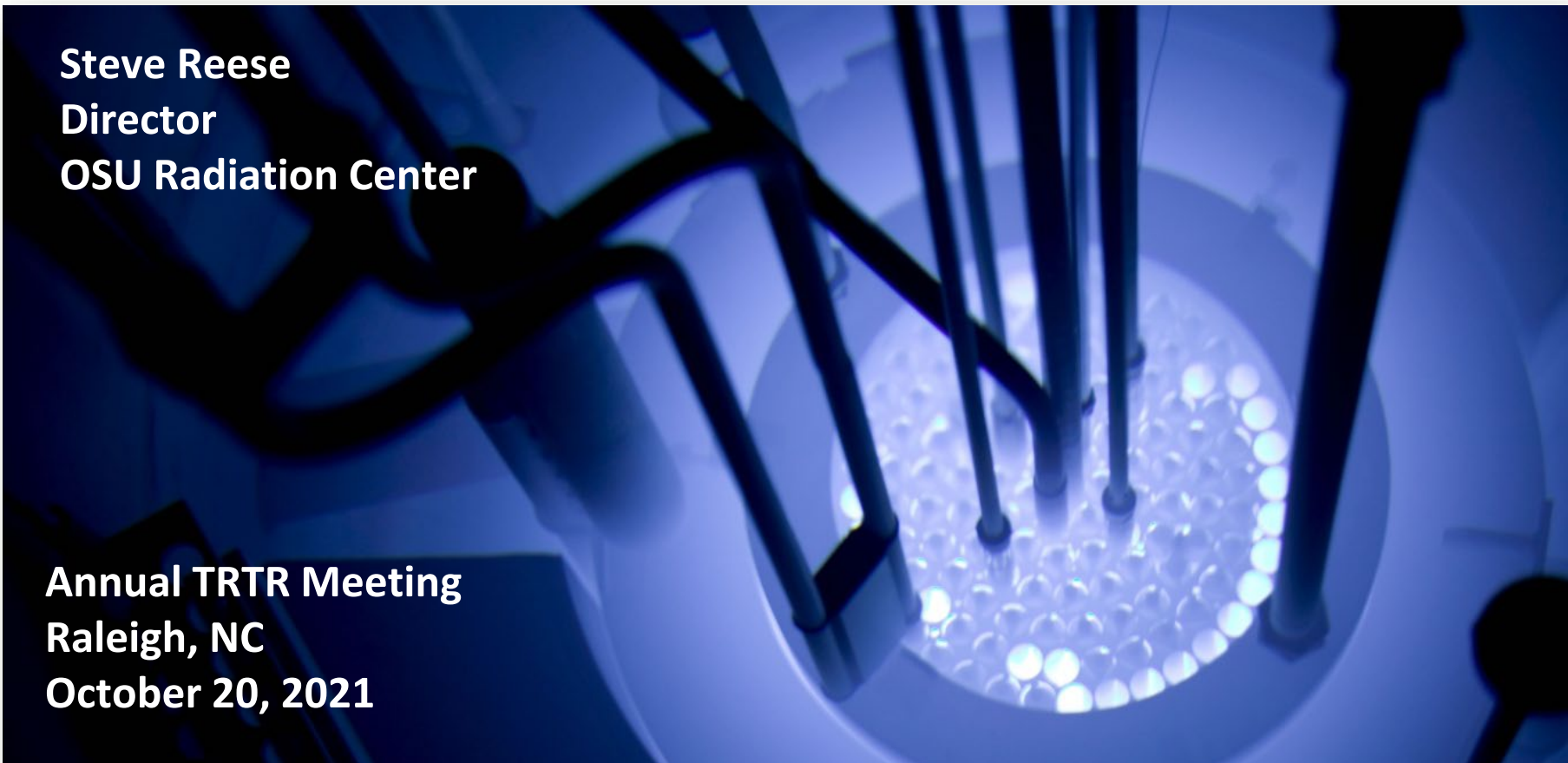


**Oregon State  
University**

# **Panel on Digital Modifications at Non-Power Production or Utilization Facilities**

**Steve Reese  
Director  
OSU Radiation Center**

**Annual TRTR Meeting  
Raleigh, NC  
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# The Panel Before You

We would like to start a conversation about examples and issues involving digital upgrades. This panel, composed of NRC staff involved in review of NEI 21-06, includes:

- **Duane Hardesty**

Senior Project Manager

Non-Power Production and Utilization Facilities Branch

Division of Advanced Reactors and Non-Power Production and Utilization Facilities

- **Norbert Carte**

Senior Electronics Engineer

Instrumentation and Controls Branch

Division of Engineering

- **Dave Beaulieu**

Reactor Operations Engineer

Reactor Inspection Branch

Division of Reactor Oversight

## 10 CFR 50.59 Guidance

**NEI 96-07 Rev 1**, “Guidelines for 10 CFR 50.59 Evaluations,” provides methods that are acceptable to the NRC staff for complying with the provisions of 10 CFR 50.59

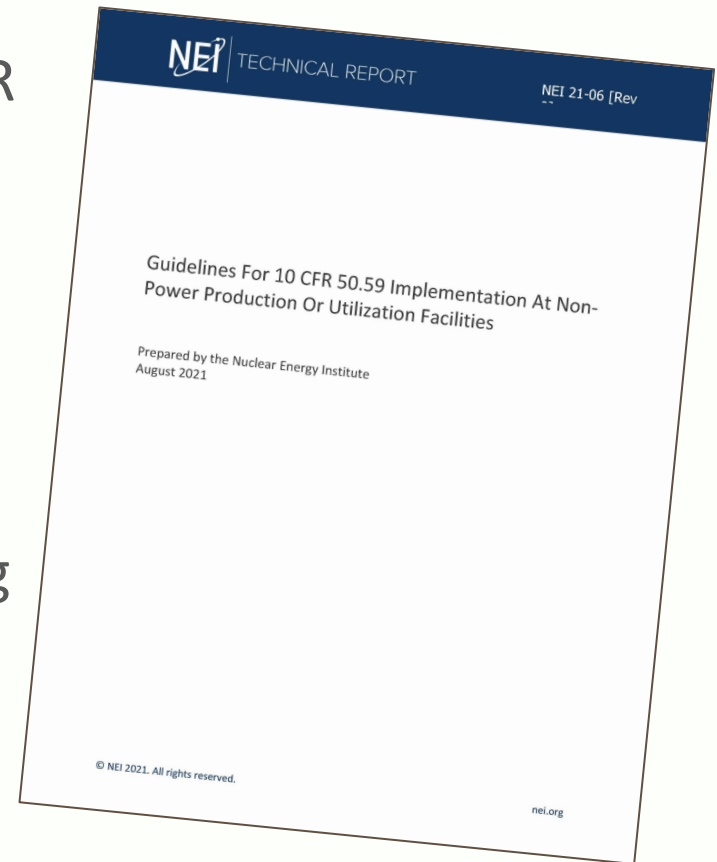
**NRC Regulatory Guide 1.187 Rev 3**, “Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments” endorses Revision 1 of NEI 96-07 with some clarifying statements

- As stated in Regulatory Guide 1.187, NEI 96-07 is applicable to non-power reactors
- However, certain provisions in the guidance that discuss the relationship of other regulatory requirements to 10 CFR 50.59 may not be fully applicable to non-power reactors because of differences in those other requirements.

# 10 CFR 50.59 Guidance at Non-Power Facilities

**NEI 21-06 Rev 0**, Guidelines For 10 CFR 50.59 Implementation At Non-Power Production Or Utilization Facilities

- Revision of NEI 96-07 applicable to research reactors
- Currently seeking endorsement from NRC through issuance of a Reg Guide



# Current Digital Modification Guidance

## Revision 1 of NEI 96-07, Appendix D, “Supplemental Guidance for Application of 10 CFR 50.59 to Digital Modifications”

- Guidance was produced to help with making changes involving digital equipment.
- Process applies to both safety and non-safety related equipment as well as digital-to-digital activities

We are going to start working on a non-power production and utilization facilities specific version of digital modification guidance and seek endorsement through a Reg Guide. Intend to incorporate comments related to digital modifications found in Reg Guide 1.187, NEI 96-07 App D, NEI 01-01, and RIS 2002-22.

# What is a digital modification?

Generally, digital modifications consist of three areas of activities:

1. **Software-related activities**

[Changes to facility or SSC]

2. **Hardware-related activities**

[Changes to facility or SSC]

3. **Human-System Interface (HSI)-related activities**

[Changes to a procedure; "how SSCs are controlled or operated"]

Not *usually* used for reactor protection systems or engineering safety features actuation systems (requires license amendment)

# Can you spot all the digital modifications?



# Panel Discussion

- Open the floor for discussion
- Interested in getting feedback from the community on:
  1. Examples of digital modifications (perhaps to be used as examples in the coming guidance document)
  2. Aspects of digital modifications that are particularly difficult
  3. Aspects of digital modification that resulted in violations