



## Welcome to the USNRC 2018 TRACE/SNAP User Workshop

### Instructors

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**TRACE Assessment, Applications & Development**

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**TRACE Assessment, Applications & Development**

**Ken Jones, Applied Programming Technology**  
**SNAP Development**



Information Systems Laboratories, Inc.

## **Welcome to the USNRC 2018 TRACE/SNAP User Workshop**

### **Support Personnel:**

Colleen Amoruso, ISL- Vienna VA

Registration, Workshop Notebooks, Coordination Activities



# Objective

The workshop activities are intended to increase the competency of intermediate and advanced TRACE users.

The workshop focus is on applying TRACE and employing SNAP to facilitate the analysis process.

Elements of User Competency Addressed by the Workshop Lectures and Exercises:

## **“Getting the Code to Run”**

Diagnosing and correcting input errors

Diagnosing and circumventing code execution failures

# Objective (continued)

## **Familiarity with Component Model Usage, Capabilities & Limitations**

- Developing component model input suitable for specific applications
- Using appropriate connections among component models

## **Understanding and Developing Control System Models**

- Selecting the problem variables to be controlled and their target values
- Identifying parameters influencing those problem variables
- Developing schemes for varying the parameters in order to achieve the desired control in the model

## **Recognizing Anomalous Model Behavior**

- Unintended asymmetries in the results
- Evaluating if magnitudes and trends of calculated solutions “make sense”

# Outline

The workshop activities feature lectures mixed with computer exercises in session. A detailed outline appears in the front of the notebook.

## **Monday Morning**

Over view of TRACE Code Theory and Components (ISL)

SNAP Overview – Setting up SNAP, Job Stream, Restarts, Initial conditions Renodalization, jEdit Integration, Diagnostic Output (APT)

## **Monday Afternoon**

SNAP Variables, Job Stream, Post Processing, Uncertainty Model Notebooks, Job Stream Sequences (APT)

# Outline (continued)

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## **Tuesday Morning**

Overview of the TRACE fuel model improvements. Key TRACE Modeling Considerations: flow area changes, frictional losses, side connections, off-take model, loop closure, modeling guidelines (ISL)

## **Tuesday Afternoon**

Analysis Techniques with exercise (ISL)



# Outline (continued)

## **Wednesday Morning**

Core Nodalization and Reflood Heat Transfer Modeling Exercise (ISL)

Choked and Unchoked Break Modeling Exercise (ISL)

## **Wednesday Afternoon**

Steam Generator Modeling Exercise (ISL)

PWR System Model Steady-State Exercise (ISL)

- Constrained steady state
- Maintaining multiple sets of initial and boundary conditions in a base input model
- SNAP user numerics to facilitate modeling

# Outline (continued)

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## Thursday Morning

PWR System Model Steady-State Exercise (continued)

PWR System Model SBLOCA Exercise (ISL)

- Break modeling
- Transient calculation and analysis

## Thursday Afternoon

BWR Model Considerations (ISL)

- Setting up a BWR model
- Obtaining steady-state conditions
- Perform a LBLOCA





## Other Information

**TRACE Version:** 5.0 Patch 5

**SNAP Version:** 2.6.1

In addition to the printed notebook, we will be providing you CDs with electronic files: notebook presentations, instructions and input files for running the workshop example problems.

The CDs will not contain the codes, which should be obtained separately through your normal channels.



# Practicalities

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## **Workshop session times each day:**

Morning 8:30 AM – 12:00 Noon

Afternoon 1:00 PM – 4:30 PM

Lunch will be from 12:00 Noon to 1:00 PM

Additional breaks have been scheduled within the morning and afternoon sessions.

We hope you benefit from and enjoy this training program.

Please ask any of us if you need anything to make your workshop experience more productive or enjoyable.