

# Adopting the **I**nternational **S**ystem of Units for Radiation Measurements in the United States

**Day 2: September 30, 2016**

*The National Academies of*  
SCIENCES • ENGINEERING • MEDICINE

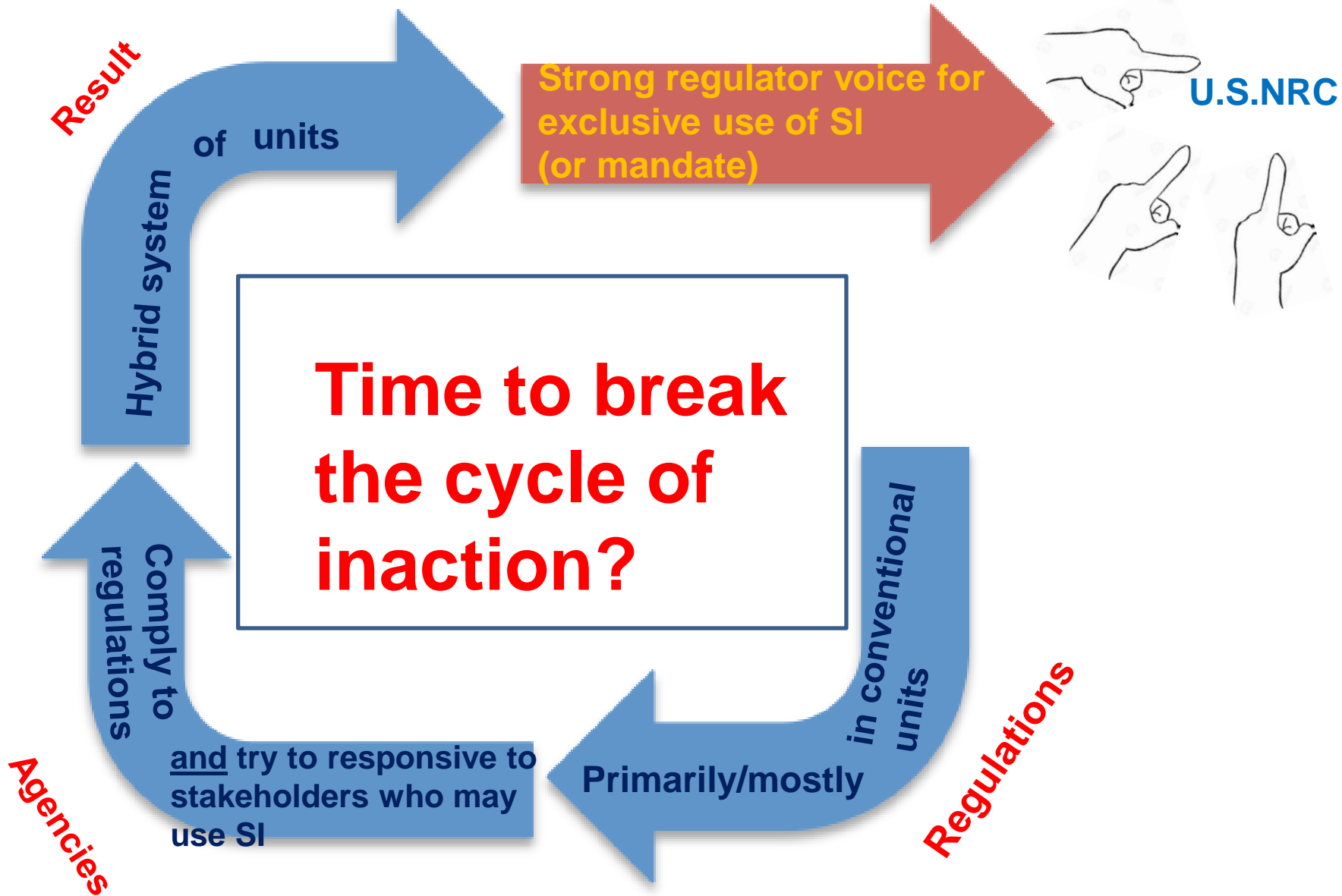
# Agenda at a Glance

Day 2

- ✓ **Cost-Benefit Analysis Considerations**
- ✓ **Lessons Learned from**
  - **Medicine**
  - **Canada**
  - **UK**
  - **European Commission**
- ✓ **Next Steps**



# **General Comments and Discussion**



# Why are we having the talk about system conversion?

- Well-demonstrated **communication issues among radiation professionals** during a radiation emergency associated with conversion from one unit system to the other.
  - But....problems exist even when communicating in one unit system due to the sometimes inappropriate use of units.
- **Risk communication with the public and media is not usually affected by the different units** because they do not care about units. In general they care only about the message.
  - The exception would be if scientists make a serious mistake in conversion.
  - But....the scientific community is failing to communicate risk despite years of academic research.
  - Is conversion to SI an **opportunity** to improve how we communicate the message?

# Common Arguments Heard

## **AGAINST conversion**

- Conversion could **impede performance and cause confusion** particularly during an emergency
- Costs of modifying and new documentation, training, instruments
- Possible health risks due to errors

## **FOR conversion**

- Use of traditional and/or hybrid units could **impede performance and cause confusion**
- Consistency with international partners

# Conversion **is already** endorsed by

## Nationally

- NCRP
- NIST
- Health Physics Society/Journal
- Radiation Research Journal

## Internationally

- ICRU
- ICRP




# What Could Trigger Conversion?

- High-level mandate
- Other?

# What Could Facilitate Conversion?

- Advance notice
- Short phasing period/no phasing period
- Assistance (training modules, financial)

# Next Steps

- **Status quo?**
- **Develop a plan for conversion and convert**
  - An agency [  U.S.NRC] takes the lead and changes its regulations; others follow?
  - The nuclear industry [via INPO] does it voluntarily?
  - Congressional mandate?
- **Let the issue rest for another... 20 years?**



**THANK YOU!**

# Reminders

- Academies workshop summary ~ winter, 2017
- [NRSB@nas.edu](mailto:NRSB@nas.edu) to receive notice of release