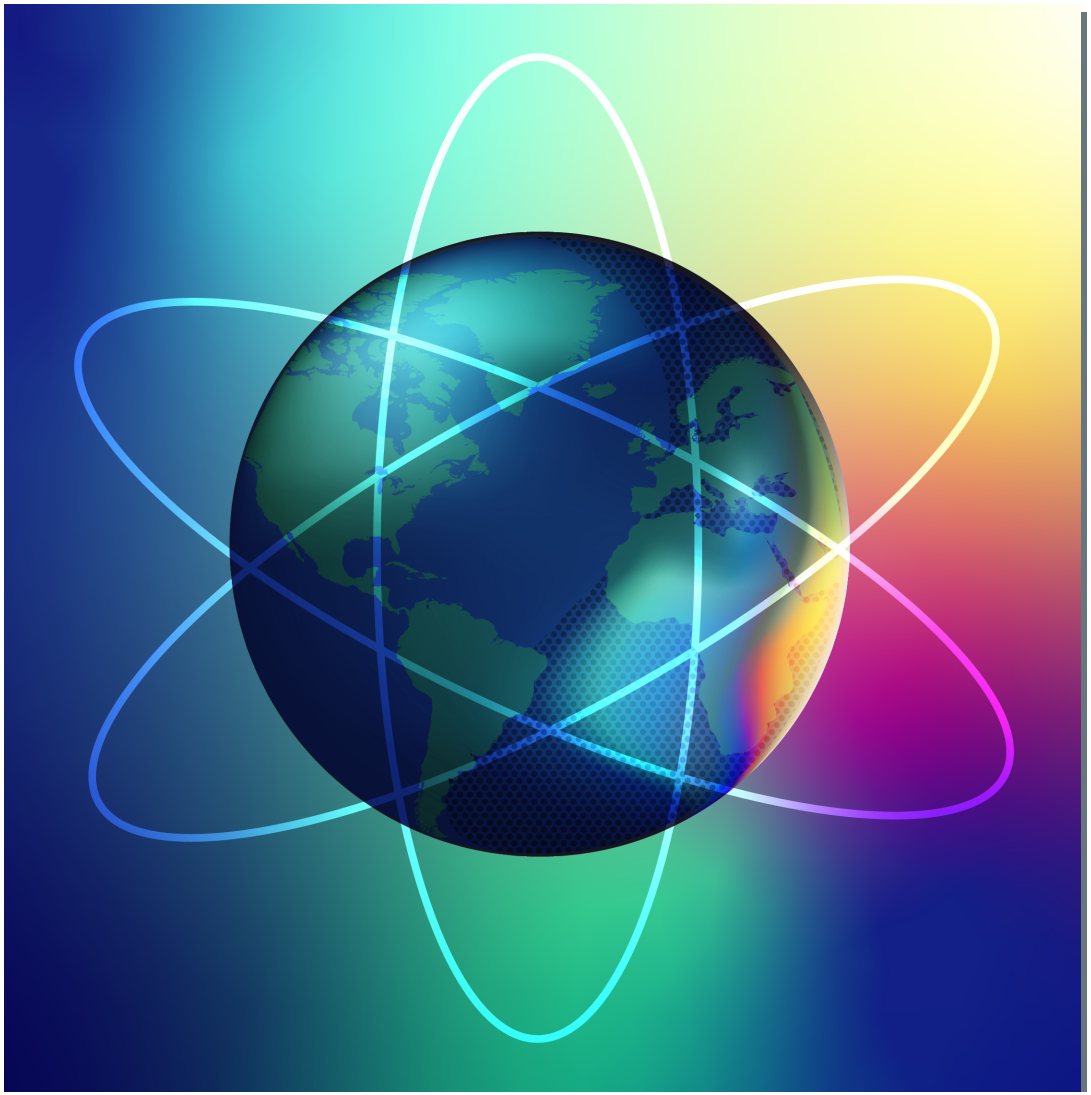


NUCLEAR ENERGY INSTITUTE

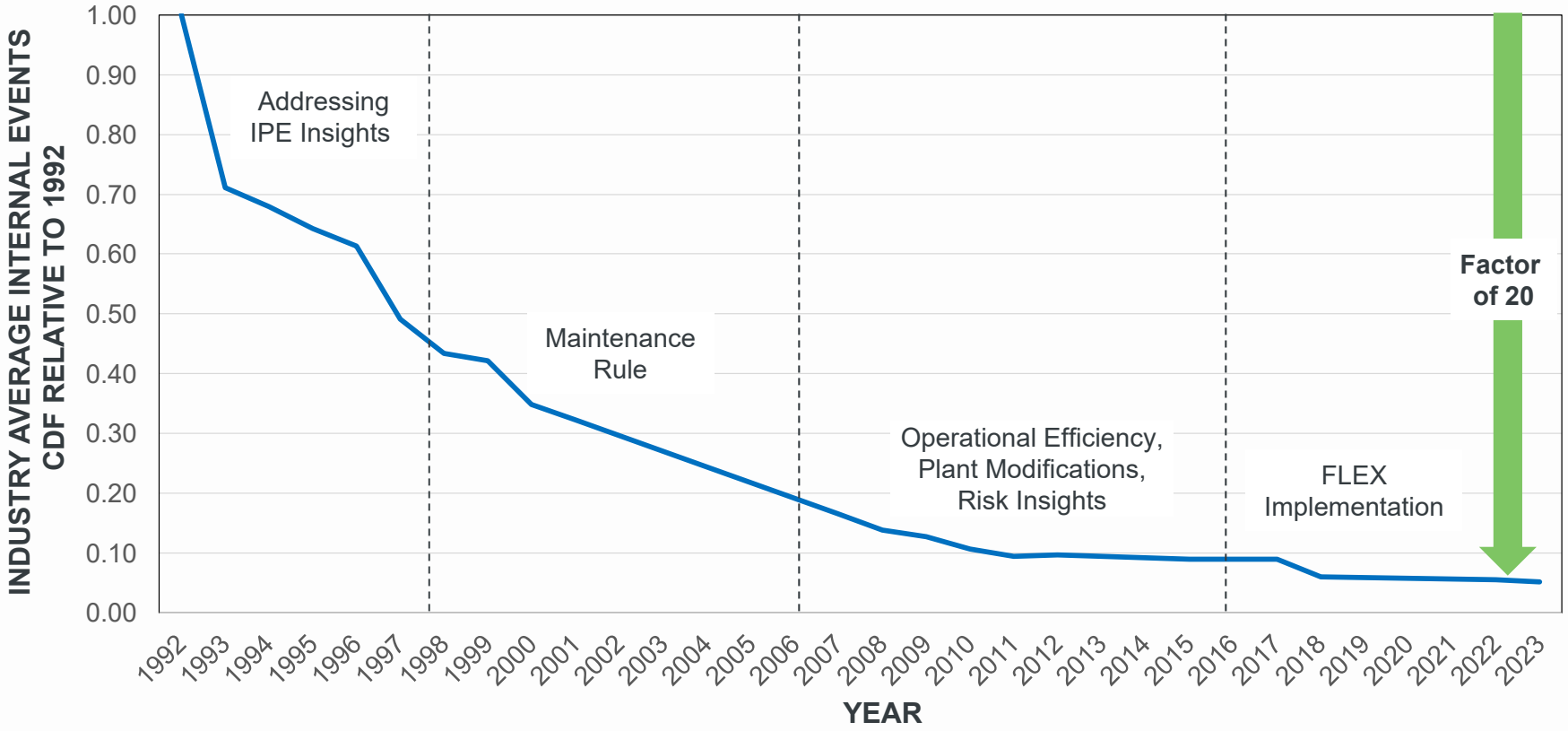
The Evolving Role of Risk-informed Decisionmaking in Nuclear Safety

Doug True

NRC Regulatory Information Conference

March 14, 2024

Risk-informing Improves Safety



Source: Multiple Sources including IPE submittals and ROP data for Mitigating System Performance Index

The Changing Role of PRA

* - LMP = Licensing Modernization Project

Large LWR PRA ≠ Advanced Reactor PRA

Example Aspect of PRA	Current Fleet	Advanced Reactors
Important Safety Systems	Active	Passive
Equipment Reliability Data	Plentiful	Limited
Human Actions for Accident Avoidance	Many	Few
Accident Progression Uncertainties	Limited	Plentiful
Modes of Operation	At-Power	All
Hazard Sources	Core	All
Predominant Risk Drivers	Internal Hazards	External Hazards
Accepted Methods	Nearly All	Some
Margin to Safety Goals	Adequate	Significant
Useful Surrogate Risk Measures	In Use	Not Defined

Closing Thoughts:

- PRA has been shown to be a valuable regulatory tool enabling:
  - Better safety focus & improved efficiency
- What we know today as “risk-informed” may be of little relevance for advanced reactors
- Changing the role of PRA must be undertaken with an appreciation for the strengths & limitations of the PRA models and a clear regard for uncertainties

