

#### Transformation at the NRC

#### Dan Dorman, Team Leader **Transformation Team**



"The world as we have created it is a process of our thinking. It cannot be changed without changing our

Albert Einstein

#### Why Transform?

#### **A BRIEF CHRONICLE** OF THE AUTOMOBILE

8500

1500

1950

66



a self-propelled vehicle, arguably the first automobile design.

1886: Karl Friedrich Benz and Gottlieb Daimler, who never met, each invent a gas-powered automobile.



A Google self-driving car is at fault in a minor



Traditional cars are outlawed. leaving only self-driving vehicles on the road.



We are in the midst of seeing more change in the next five years than we've seen in the last 50 years."

MARY BARRA CEO of General Motors







# Why Transform at the NRC?

"The nuclear industry has indicated plans to introduce new and novel technologies... Because the use of such new nuclear technologies would challenge our current regulatory framework, we must not only innovate, but also identify and implement transformative change."

> --- Victor McCree, Executive Director for Operations 1/25/18 – Formation of Transformation Team



## What is Transformation?

- Continuing to ensure safety and security of the operation of civilian nuclear applications
- Significantly different ways to regulate
- Further enhancements in our effectiveness, efficiency, and agility





### What the Transformation Initiative is Not

- An alteration of NRC's mission to ensure adequate protection
- Innovation Incremental changes or
   better ways of doing
   what we are currently
   doing
- A short-lived effort

#### Incremental Change or Transformation?



## What is the Tasking?

- Harvest transformation ideas and strategies from inside and outside the agency to successfully implement transformation and sustain a transformative organizational culture.
- Develop and recommend specific area(s) to initiate transformation within the NRC.
- Develop a strategy and communications plan(s) for the specific area(s) recommended to foster transformation in NRC's culture.
- Develop a Commission paper that describes the merits of transformation, with recommended approaches and estimated schedules/resources.

#### Timeline







#### **Specific Areas for Consideration**

- Digital instrumentation and controls
- Advanced fuel technology
- Advanced reactor applications
- New and emerging materials and manufacturing methods
- Big data

#### **Outreach Efforts**



Internal	
ADM, RES, NSIR, NRR/DLP, OIP, OCA, NRR/DORL, OEDO,	completed
OCAA, OPA, SECY, SBCR, OI, NRR/DMPS, NRR/DE, OGC,	
NRR/DRA, NRR/DIRS, NRR/DSS, OCFO, OCIO, NRO/DEI,	
NMSS/DUWP, NMSS/DRM, NMSS/DSFM, OCHCO, RI, RII, RIII,	
RIV, NMSS/FSCE, OE, ACRS, NMSS/MSST, NRO/DCIP,	
NRO/DNRL, NRO/DSEA, NRO/DSRA, ASLBP, NMSS	
External	
NuScale, William Ostendorff, GSA, DOD, NEI, DIUx-Chris	completed
Kirchhoff, Dominion, Oklo, DOE, EPRI, Rock Creek Tech,	
Lockheed Martin, Technology Resources, GE Hitachi,	
Westinghouse, Curtis-Wright/Scientech, NewClear Day,	
OAS/CRCPD, UCS, DOE ARPA-E, US Army, Air Force, FERC,	
Framatome, NASA, FDA, NIA, ACMUI, FAA, Naval Reactors,	
Apollo Fusion – Mike Cassidy, TerraPower, Terrestrial Energy, NEA	
international regulators (Finland, Japan, France, UK), DOT	

#### **RIC Session – March 13 - completed**

#### Themes



- Systematic Expansion of Risk-Informed Licensing
  - Incentives for safety improvements
  - Systems/integrated approach to risk
  - Application of operating experience
  - Leveraging existing reviews
- Additional flexibility for licensees to make facility changes
- Timely resolutions to challenges associated with new technology
- Performance based reviews and incremental/early approvals
  - Digital Instrumentation and Controls
  - Transition to Accident Tolerant Fuels
  - Advanced Reactor Licensing
- Culture
  - Advance Innovation Forums as Agency Process
  - Leadership Model for Vision and Communication
  - Staff rotations to organizations doing transformative work
  - Incentives for advancing new ideas
  - Organizational focus
  - Measurement of existing culture and trending of effectiveness



#### **Next Steps**

- Alignment on recommended changes to regulatory framework/culture
- Issuance of SECY Paper May 2018