License Renewal Is a Success Story for Nuclear Power

- Over 90% of our operating fleet have received LR to 60 Years
- Without LR, over 42 units would have already been shut down
- CFR anticipates further rounds of renewal, NRC Commissioners agree
- Six Years, DOE, EPRI Intensive effort – Result SLR approval

SLR Generic Aging Lessons Learned (GALL) & SRP

- Several years of industry, DOE, EPRI and NRC interaction and public meetings to produce usable guidance for the industry in conducting SLR
- Published for stakeholder use in July 2017

Lead Plant Applications

- Turkey Point Submitted first SLR application in February, 2018
- Peach Bottom on track to submit application on July 10, 2018
- Surry remains on track for first quarter 2019 submittal
- North Anna on track for 2020 submittal
- Many more plan to submit SLR
SLR ROADMAP

2009
- First license renewal.
  Plants enter the period of extended operation

2016
- Begin license renewal submittal preparation

2018
- First SLR application submitted

2020
- First SLR license approved by NRC

2024
- 5 Year minimum to submit SLR for continued operation per timely renewal

2029
- First plant to reach 60 years of operation
The Case for Implementing Digital I&C

- Make improvements to plant **Efficiency** – **Cost Savings**
- Improve long-term **Reliability** of critical I&C systems
- Manage component obsolescence
- Helps support the Business Case for 2\textsuperscript{nd} License Renewal (>60 Years)
- Improve overall nuclear plant **Safety**
- OE – Industry in the US has been implementing digital upgrades for the past 25 years improving plant safety with significant success driven by plant availability and trip reduction modifications
Critical Actions

• Industry Chief Nuclear Officers commissioned the Digital I&C Working Group to break down barriers to full plant application of digital systems
• NRC Commissioners instructed staff to establish a plan to “modernize the NRC regulatory infrastructure” - NRC Digital I&C Integrated Action Plan (IAP)
• U.S. Nuclear Industry, as led by the Nuclear Energy Institute (NEI), are working with NRC staff to identify key opportunities and develop a plan to resolve digital issues
• This must be a step change and not a minor adjustment to current policy to be successful
I LOVE OLD PICKUP TRUCKS…

1978 Ford F150
351CI V8, modified
Front Disc Brakes, Analog Ignition Control
AM Radio
Brake light comes on after attempting stop
F150 - best selling truck in US

2016 Ford Flex
3.5L V6
ABS Brakes, Adaptive cruise control
Digital Engine/transmission control
Digital Traction Control
Front, side and top air bags
Sends vehicle health report to email
Bluetooth, driver assist, integrated entertainment system, etc.
Digital I&C Modernization Plan (MP) Schedule

MP1A: RIS 2002-2 “Licensing Digital Upgrades”

MP1B: NEI 16-16 “Addressing Common Cause Failure (CCF)”

MP2: 96-07, Appendix D “Supplemental Guidelines for Digital I&C 50.59”


MP4A: Revision to ISG-06 “Digital License Amendment Requests”

MP4B: Infrastructure (Long Term)

Final Document Issued May 2018

NRC Decision to Endorse TBD

NRC Decision to Endorse 3Q2018

EPRI Results in 2018, Approval TBD

NRC Issue Revision 4Q2018

2018/2019
On January 25, 2018, Victor McCree, NRC EDO initiated the formation of the NRC Transformation Team.

Goal is to identify “transformative changes to NRC’s regulatory framework, culture, and infrastructure” with a focus on new technology:
- Digital I&C
- ATF
- Advanced Reactors
- Big data
- Advanced Manufacturing

NRC report delivered to Commission in May 2018.

NEI Formed an Industry Transformation Team:
- Representatives from major utilities, DOE, EPRI, INPO
- Prepared and delivered a report to the NRC in March.
CURRENT STATUS

- **NEI Transformation Report** delivered to NRC
- NRC recommendations will likely be limited to licensing issues related to new technology
- NEI Proposes to include total life-cycle of regulatory involvement
- Applies to Current Fleet as well as New and Advanced Rx

Find Report at [www.nei.org/transformation](http://www.nei.org/transformation)
• 19 recommendations in transformation document
  – Unnecessary resources are spent on areas of low safety significance

• Need for an overarching and consistent decision making framework
  – Maximize focus on safety and optimize use of resources
Creating a unified framework for decision making allows issues to be communicated using common language and metrics.
1. Communicate that the transformation effort is essential to the future of the industry
   – Need to maintain leadership and resources focused on the transformation initiative
2. Communicate that neither the industry nor NRC can transform in a vacuum
   – Establish a Joint NRC-NEI group to oversee implementation
3. Drive a more holistic vision to transformation
   – Transformation needs to be broader than new technology
   – Develop an integrated regulatory decision-making concept focused on safety significance for any regulatory issue
4. Develop a joint Transformation Roadmap with DOE, EPRI and Industry coordinated by NEI.
Questions?