

## Summary Review of Standard Forum Activities

Topic Area	Summary of Potential Activities	Status	Associated Action Item	Process State <sup>1</sup>	NRC Recommended Future Action <sup>2</sup>
License Renewal <ul style="list-style-type: none"> <li>• Light Water Reactor Sustainability (LWRS)</li> <li>• Subsequent License Renewal (SLR)</li> <li>• Aging management Programs (AMPS)</li> </ul>	Recommended: <ol style="list-style-type: none"> <li>1. ASME should revise existing standards to consider environmentally-assisted fatigue and Mechanism of crack initiation</li> <li>2. ACI should consider developing standards that address ASR, Irradiation effects and creep</li> <li>3. IEEE develop a standard for cables defining acceptable methods to estimate the remaining useful life curves</li> <li>4. NESCC report on cables identified that IEEE 323-203 and 1202-2006 should be endorsed in RGs 1.189 and 1.89</li> <li>5. ASME and ASNT develop standards that use improved NDE methods to better implement Aging Management Programs (AMPs)</li> <li>6. Develop standards that mitigate age related degradation: ASME and AWS qualification weld repair methodologies and IEEE cable rejuvenation</li> </ol>	<ol style="list-style-type: none"> <li>1. ASTM revised standards E185, E2215, &amp; E900 in 2015. ASTM committee E10.02 is developing a standard on thermal ageing. ASME is revising Code Case N-830. Need SDO Champion.</li> <li>2. Need SDO Champion</li> <li>3. Unknown</li> <li>4. Unknown</li> <li>5. Unknown</li> <li>6. Unknown</li> </ol>	<ol style="list-style-type: none"> <li>1. ASME and ASTM offered to update its items in the table related to license renewal                             <p><b>Status:</b></p> <p><b>ASME:</b></p> <ol style="list-style-type: none"> <li>2. License Renewal                                     <ul style="list-style-type: none"> <li>○ Reactor pressure vessel and low-alloy steels – Work is progressing or assigned</li> <li>○ Piping - Work is progressing or assigned</li> <li>○ NDE Techniques - Could be considered under ANDE-1</li> </ul> </li> </ol> </li> </ol> <p><b>IEEE</b></p> <ol style="list-style-type: none"> <li>3. Update the information in the table related to IEEE 323 and cable condition monitoring.                             <ul style="list-style-type: none"> <li>○ Status: IEC/IEEE 60780-323 was issued in Feb 2016. NRC has started work to revise RG 1.89 for Rev 3</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Pre-planning</li> <li>2. Pre-planning</li> <li>3. Pre-planning</li> <li>4. Pre-planning</li> <li>5. Pre-planning</li> <li>6. Pre-planning</li> </ol>	<ol style="list-style-type: none"> <li>1. Continue</li> <li>2. Continue</li> <li>3. Discontinue</li> <li>4. Discontinue</li> <li>5. Discontinue</li> <li>6. Discontinue</li> </ol>

<sup>1</sup> The following definitions of Action State” terms used are:

- Pre-Planning – The participants of NRC Standards Forum identified an activity that may require the development or revision of a standard, but the coalition has not been formed nor has the action plan (roadmap) been developed.
- Planning – The participants of NRC Standards Forum identified an activity that may require the development or revision of a standard and the coalition is developing an action plan (roadmap).
- Implementation – Coalition and action plan existed and is being implemented to develop or revise a standard.
- Effort stopped – No further NRC Standards Forum discussion or action is needed

<sup>2</sup> The following definitions of “Disposition” terms used are:

- Complete – The NRC Forum participants have decided that all NRC Standards Forum efforts are completed, and that the SDO is implementing the action plan
- In-Progress - The NRC Forum participants are defining an action plan (roadmap) to explore the need for a new or revised standard
- Discontinue - The NRC Forum participants decided that insufficient need exists to define an action plan (roadmap) or the implementation of the action plan (roadmap) is being managed by SDO as part of its processes.

<p>NESCC Task Group Reports</p>	<ol style="list-style-type: none"> <li>1. Concrete Report</li> <li>2. Concrete Repair Report</li> <li>3. Polymer Piping Report</li> <li>4. Welding Report</li> <li>5. Cable Report</li> </ol>	<ol style="list-style-type: none"> <li>1. Reviewed by ACI committee – no action proposed</li> <li>2. Reviewed by ACI committee – no action proposed</li> <li>3. Active in ASME Section XI</li> <li>4. Unknown if ASME and AWS working</li> <li>5. Updates to RGs 1.89 and 1.189 identified in License Renewal section</li> </ol>	<ul style="list-style-type: none"> <li>• The ACI representative was asked to write a summary of his comment on concrete research conducted by ACI and efforts to incorporate results into standards. If possible, he was asked to write a brief (~2 page) roadmap on what work still needs to be done and by whom. <b>Status:</b> Circulated the Concrete Report and received little or no feedback. No interest was expressed. Suggests the NRC engage the ACI at its board level, it might get better traction.</li> <li>• In a future NRC Workshop, assemble the “concrete consortium” to update the state of knowledge for such degradation modes as ASR and irradiation and related standards. <b>Status:</b> Action remains open to be addressed at a future NRC Standards Forum meeting.</li> <li>• NRC offered to review the recommendations in the Welding TG report and decide whether further work on this topic by NESCC is warranted. Additional input may be sought from ASME, AWS, EWI, and EPRI. <b>Status:</b> Action remains open to be addressed at a future NRC Standards Forum meeting</li> </ul>	<ol style="list-style-type: none"> <li>1. Effort stopped</li> <li>2. Effort stopped</li> </ol>	<ol style="list-style-type: none"> <li>1. Completed</li> <li>2. Completed</li> <li>3. Completed</li> <li>4. Discontinue</li> <li>5. Discontinued</li> </ol>
<p>Operating Licensed facilities (Reactors and Fuel)</p>	<ol style="list-style-type: none"> <li>1. Industry is requesting the use of polymer piping at operating plants</li> <li>2. Counterfeit, fraudulent and suspect items (CFSI)</li> </ol>	<ol style="list-style-type: none"> <li>1. ASME Section XI working</li> <li>2. NRC completed its effort, DOE recommends a standard (Need SDO Champion)</li> </ol>	<ul style="list-style-type: none"> <li>• A Dept. of Energy staff member stated that standards improvements related to counterfeit and suspect items (CFSI) are still needed. He was asked to describe the need (beyond ASME NQA-1), and if possible, to draft a roadmap of what needs to be done and by whom.</li> </ul>	<ol style="list-style-type: none"> <li>1. Implementation</li> <li>2. Effort stopped</li> </ol>	<ol style="list-style-type: none"> <li>1. Complete</li> <li>2. Discontinue</li> </ol>

			<p><b>Status:</b> DOE issued, "U.S. Government Procurement Anti-Counterfeiting Inter-Agency Working Group, Report to the President of the United States," dated March 6, 2012. Report asks, are federal agencies and industries comfortable to address counterfeiting risk into their procurement regulations? If not, now it is time review procurement requirements and amend if necessary. Specifically, requirements for traceability of procured items, what to do if counterfeit item is received and installed in critical system etc. The author recommends, developing a consensus-based anti-counterfeiting standard in cooperation with industry and National/International Standards Bodies. Currently, suppliers, contractors, subcontractors and the US Government use various terminology and procedures across the anti-counterfeiting spectrum that results in a less than optimal procurement environment.</p>		
New Reactors Advanced Reactor Designs	<ol style="list-style-type: none"> <li>1. Small Modular Reactors</li> <li>2. Digital instrumentation and Controls (I&amp;C)</li> </ol>	<ol style="list-style-type: none"> <li>1. Developed ASME SMR Roadmap report, issue if current ASME criteria are sufficient for NRC licensing, still an active issue. (ASME is the SDO Champion)</li> <li>2. Status for new reactor design unknown (need name of the SDO Champion)</li> </ol>	<ul style="list-style-type: none"> <li>• Small modular reactors</li> </ul> <p><b>Status:</b></p> <ul style="list-style-type: none"> <li>○ Work is progressing for Section XI, Division 2</li> <li>○ Code Case for Alternative Examinations for Section XI, Division 3, Using System Based Code</li> <li>○ Revision of O&amp;M for SMRs in development (Several O&amp;M Code Cases are also being considered in lieu of a Code change)</li> <li>○ New O&amp;M standard for new reactor for safety-significant components in non-safety systems with passive post-accident heat removal systems</li> </ul>	<ol style="list-style-type: none"> <li>1. Pre-planning</li> <li>2. In-progress</li> </ol>	<ol style="list-style-type: none"> <li>1. Continue</li> <li>2. Continue</li> </ol>

			<ul style="list-style-type: none"> <li>The ANS representative mentioned ongoing work on safety criteria for advanced reactors. He offered to provide the PINS form for ANS 30.1. <b>Status:</b> ANS is providing a presentation at the September 2016 NRC Standards Forum that discusses this topic.</li> <li>NRC was asked to provide a summary of standards-related work planned by the SMR Regulators' Forum, for the status table. <b>Status:</b> Topic for future NRC Standards Forum</li> <li>NRC offered to contact the IEEE subcommittee for an update on digital I&amp;C work. <b>Status:</b> IEEE providing a presentation at the September 2016 NRC Standards Forum.</li> <li>The ASTM representative offered to provide updated information on nuclear fuel design after the relevant committee meets (1/2016). <b>Status:</b></li> </ul>		
Other Topics	<ol style="list-style-type: none"> <li>Current Fuel Design</li> <li>Accident Tolerant Fuel</li> </ol>	<ol style="list-style-type: none"> <li>Draft regulatory guides (DG 1261 and DG 1262) rule is being drafted</li> <li>The maturity level of this subject is insufficient to develop standards</li> </ol>		<ol style="list-style-type: none"> <li>Effort stopped</li> <li>Effort stopped</li> </ol>	<ol style="list-style-type: none"> <li>Complete</li> <li>Complete</li> </ol>
Fukushima Related Topics	<ol style="list-style-type: none"> <li>During a workshop[ in 2012, only the issue related to enhanced reactor and containment instrumentation was found to be a good fit to the capabilities and timeframe for consensus standards development. A development timeframe of 3-4 years would support the NRC's NTTF activity schedules</li> </ol>	<ol style="list-style-type: none"> <li>By 2016, revised IEEE 497 to address design criteria for severe accident monitoring instrumentation channels</li> </ol>	<ul style="list-style-type: none"> <li>The IEEE representative was asked to summarize work related to spent fuel pool instrumentation for severe accidents, e.g., IEEE 497. <b>Status:</b> Project Action Request approved by NPEC on July 19, 2016 for a new standard "Standard for Spent Fuel Pool Instrumentation"</li> <li>NRC was asked to separate evaluation of beyond design basis earthquake (e.g., North Anna) to a new line in the tracking table.</li> </ul>	<ol style="list-style-type: none"> <li>Implementation</li> </ol>	<ol style="list-style-type: none"> <li>Complete</li> </ol>

			<b>Status: Added</b>		
EPRI Advanced Nuclear Technologies	1. EPRI has an active ANT research program	1. The EPRI ANT program is an active research program that may have relevance to the NRC Standards Forum community	1. The EPRI offered an updated status table for their standards-related research under the ANT program. NRC offered to work with EPRI to refine the details of the chart <b>Status:</b> EPRI presentation being given and opportunity to identify SDO Champion during the September 2016 NRC Standards Forum	1. Pre-planning	1. Continue
Updating Industry Standards	1. Convert NEI document to SDO standards	1. Working on the possible conversion of NEI 09-10	1. NEI offered guidance on gas accumulation in ECCS systems (NEI 09-10) as a candidate document to be converted to a standard <ul style="list-style-type: none"> <li>“Guidelines for effective prevention and management of system gas accumulation” is confirmed for the December 2016 O&amp;M agenda</li> </ul>	1. Pre-planning	1. Continue
Risk Related Standards	1. Safety classifications of systems, structures and components (SSCs) 2. Reliability Assurance Program (RAP) 3. Probabilistic Risk Assessment (PRA) 4. Risk terminology	1. Active in the ASME, JCNRM is SDO Champion		1. Pre-planning 2. Pre-planning 3. Pre-planning 4. Per-planning	1. Continue 2. Continue 3. Continue 4. Continue