



U.S.NRC

United States Nuclear Regulatory Commission

Protecting People and the Environment

***Status of Lessons Learned
from the Fukushima
Dai-ichi Accident***

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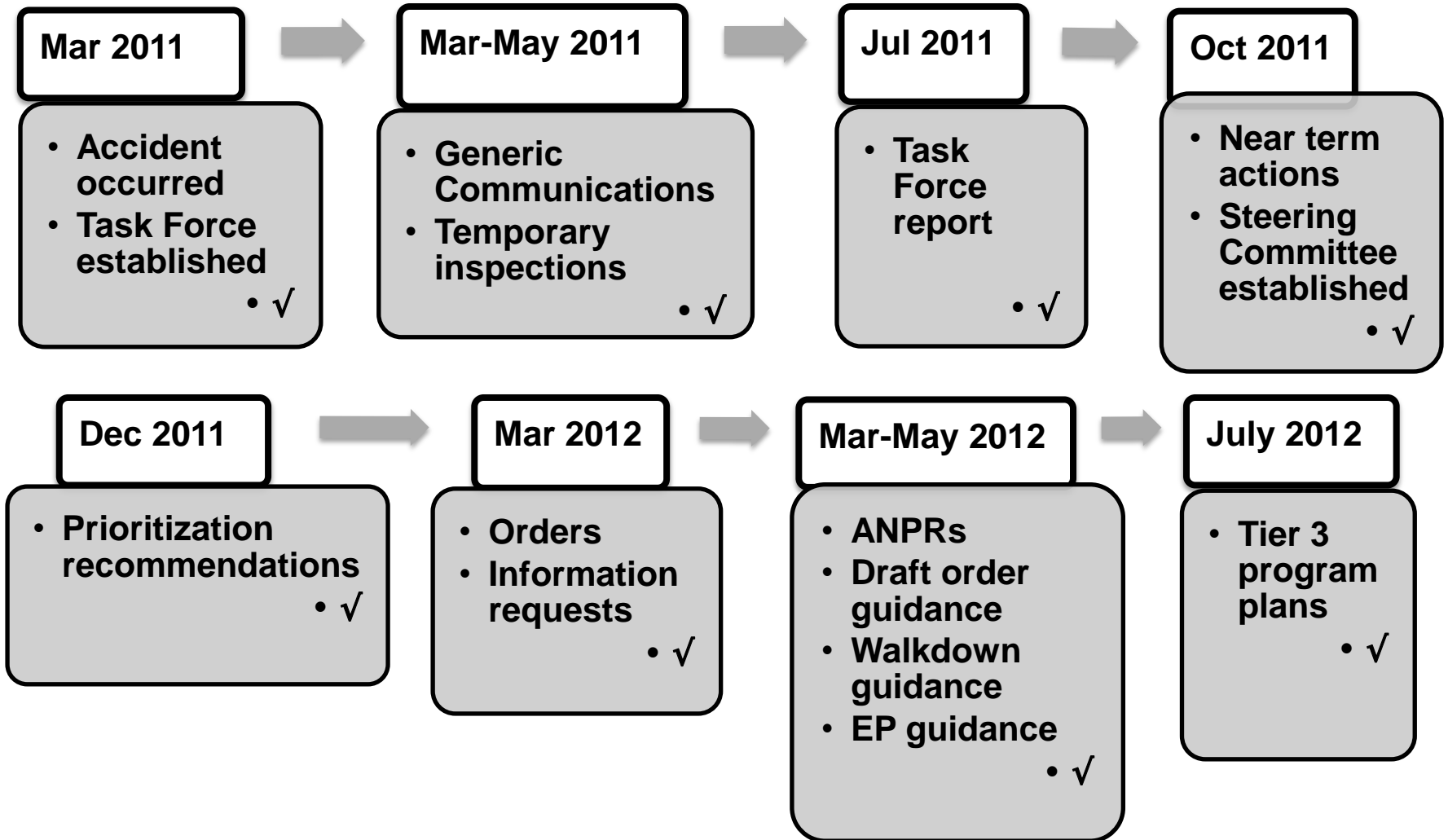
Agenda

- ***Purpose***
- ***Status of lessons learned***
 - ***Tier 1***
 - ***Tier 2***
- ***Tier 3 approach and plans***

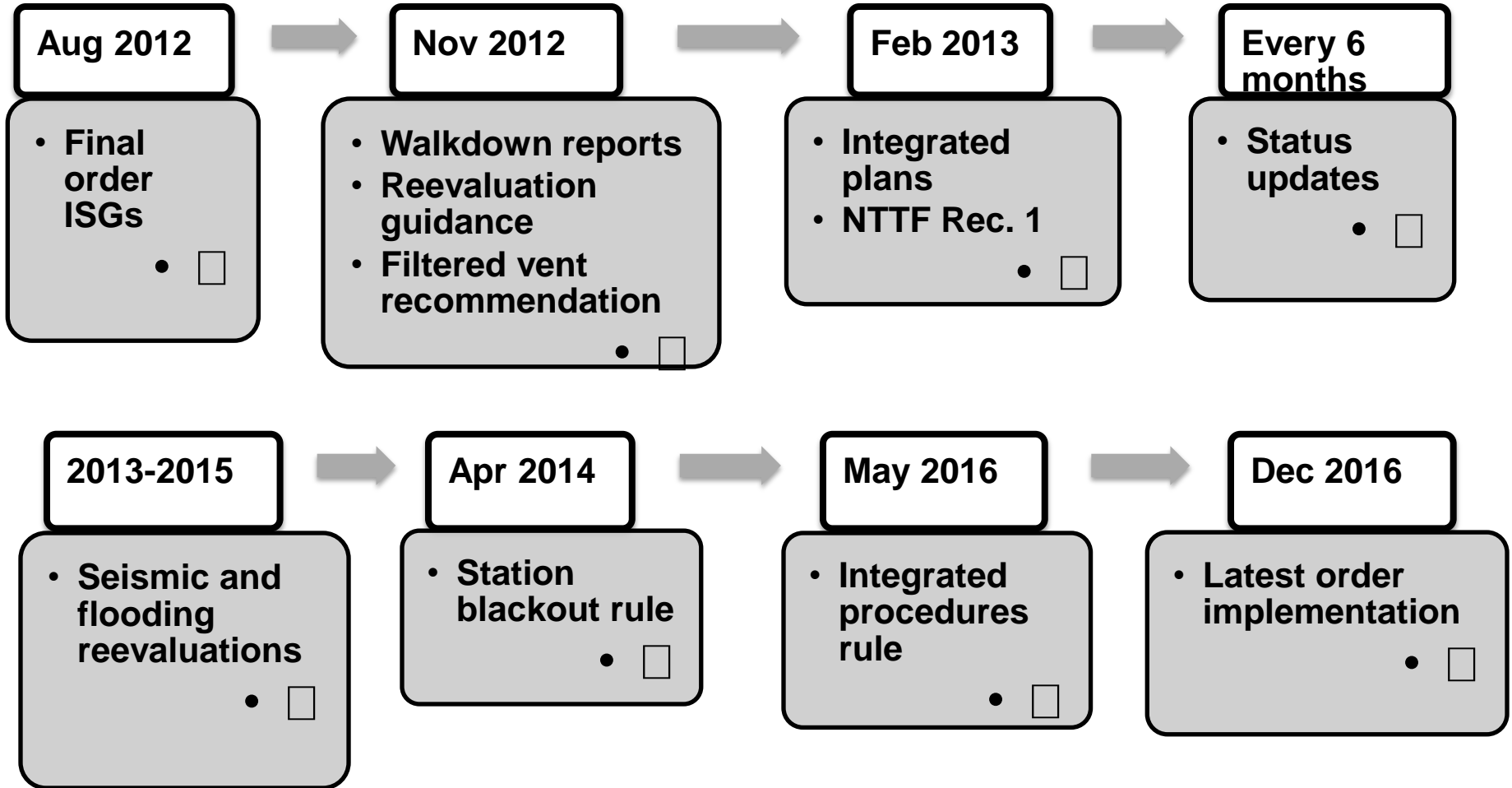
Progress Overview

- ***Safety enhancements being realized***
- ***On schedule with continued significant progress***
- ***Productive frequent stakeholder engagement***
- ***Other agency priorities continue***

Timeline



Timeline



Guiding Principles

- ***Do not distract from safety of operating facilities***
- ***Do not displace work of greater safety benefit or other high priority activities***
- ***Move forward promptly***

Tiers

- ***Tier 1 - Start without delay and sufficient resources exist***
- ***Tier 2 - Technical assessment needed, dependence on Tier 1 actions, or resource limitations***
- ***Tier 3 - Further study or dependent on other action, critical skills, or Recommendation 1***

Ongoing Related Efforts

- ***Filtration of hardened vents for Mark I and II containments***
- ***NTTF Recommendation 1***
- ***Economic consequences***



Status of Lessons Learned

David Skeen, Director

Japan Lessons Learned Project Directorate

Brian Sheron, Director

Office of Nuclear Regulatory Research

Tier 1

- ***3 Orders***
- ***3 Requests for information***
- ***2 Advance notices of proposed rulemaking***
- ***Safety enhancements***
- ***On schedule***

Overview - Orders

	Order	Draft Guidance	Final Guidance	Operating Reactor Completion
Mitigating Strategies	✓ Mar 2012	✓ May 2012	On schedule Aug 2012	2 refueling outages or Dec 2016
Hardened Vents	✓ Mar 2012	✓ May 2012	On schedule Aug 2012	2 refueling outages or Dec 2016
Spent Fuel Pool Instrumentation	✓ Mar 2012	✓ May 2012	On schedule Aug 2012	2 refueling outages or Dec 2016

Mitigating Strategies Order

- ***Strategies/equipment for beyond-design-basis external events***
- ***Interim staff guidance***
 - ***Draft issued May 2012***
 - ***Evaluating comments received***
 - ***Considering endorsement of industry guidance document***
- ***On schedule***

Reliable Hardened Vent Order

- ***Mark I and II containment venting for core and containment cooling***
- ***Interim staff guidance***
 - ***Draft issued May 2012***
 - ***Evaluating comments received***
- ***On schedule***

Reliable Spent Fuel Pool Instrumentation Order

- ***Improved decision making***
- ***Interim staff guidance***
 - ***Draft issued May 2012***
 - ***Evaluating comments received***
 - ***Considering endorsement of industry guidance document***
- ***On schedule***

Seismic and Flooding Walkdowns

- ***Identify and address degraded, nonconforming, or unanalyzed conditions***
- ***Endorsed guidelines – May 2012***
- ***Issued temporary instructions***
- ***Walkdowns/inspections underway***
- ***On schedule***

Seismic and Flooding Reevaluation

- ***Reevaluation using current seismic and flooding standards***
- ***Flooding prioritization – May 2012***
- ***Developing guidance***
- ***Considering endorsement of industry guidance document***
- ***On schedule***

EP Communications Systems and EP Staffing

- ***Power supplies for communication systems, and EP staffing during multi-unit events***
- ***Staff endorsed industry guidance – May 2012***
- ***On schedule***

Rulemakings

- ***Station blackout***
 - ***ANPR closed May 2012***
 - ***Developing rulemaking basis***
 - ***Final rule on schedule for April 2014***
- ***Integrating on-site emergency response procedures***
 - ***ANPR closed June 2012***
 - ***Developing rulemaking basis***
 - ***Final rule on schedule for May 2016***

Tier 2

- ***Spent fuel pool makeup capability***
- ***EP enhancements for multiunit and prolonged station blackout dose assessment, training and exercises, and equipment and facilities***
- ***Other natural hazards***

Tier 3

- ***Periodic seismic and flooding update***
- ***Seismically induced fires and floods***
- ***Vents for other containment designs***
- ***Hydrogen control and mitigation***
- ***EP enhancements for multiunit events and prolonged station blackout***
- ***ERDS capability***
- ***Additional EP topics***

Tier 3

- ***ROP modifications for defense-in-depth framework***
- ***Staff training on severe accidents***
- ***Emergency planning zone size***
- ***Potassium iodide beyond 10 miles***
- ***Transfer spent fuel to dry casks***
- ***Reactor and containment instrumentation***

Hydrogen Control and Mitigation

- ***Known impact on reactor safety***
- ***Assess hydrogen control measures***
- ***Evaluate accident sequences***
- ***Evaluate hydrogen migration***
- ***Assess technical basis of 50.44***

Transfer of Spent Fuel to Dry Cask Storage

- ***Confirm conclusions regarding safety of spent fuel pools***
- ***Assess whether significant safety benefits (or detriments) would occur from expedited transfer of spent fuel to dry casks***

Acronyms

- ***ANPR – Advance notice of proposed rulemaking***
- ***EP – Emergency preparedness***
- ***ERDS – Emergency response data system***
- ***ISG – Interim staff guidance***
- ***NTTF – Near term task force***
- ***RFI – Request for information***