
The Nuclear Power Revival in Japan

December 14, 2017

The Federation of Electric Power Companies of Japan

Chairperson, Nuclear Power Development and Policy Committee

Hideki Toyomatsu

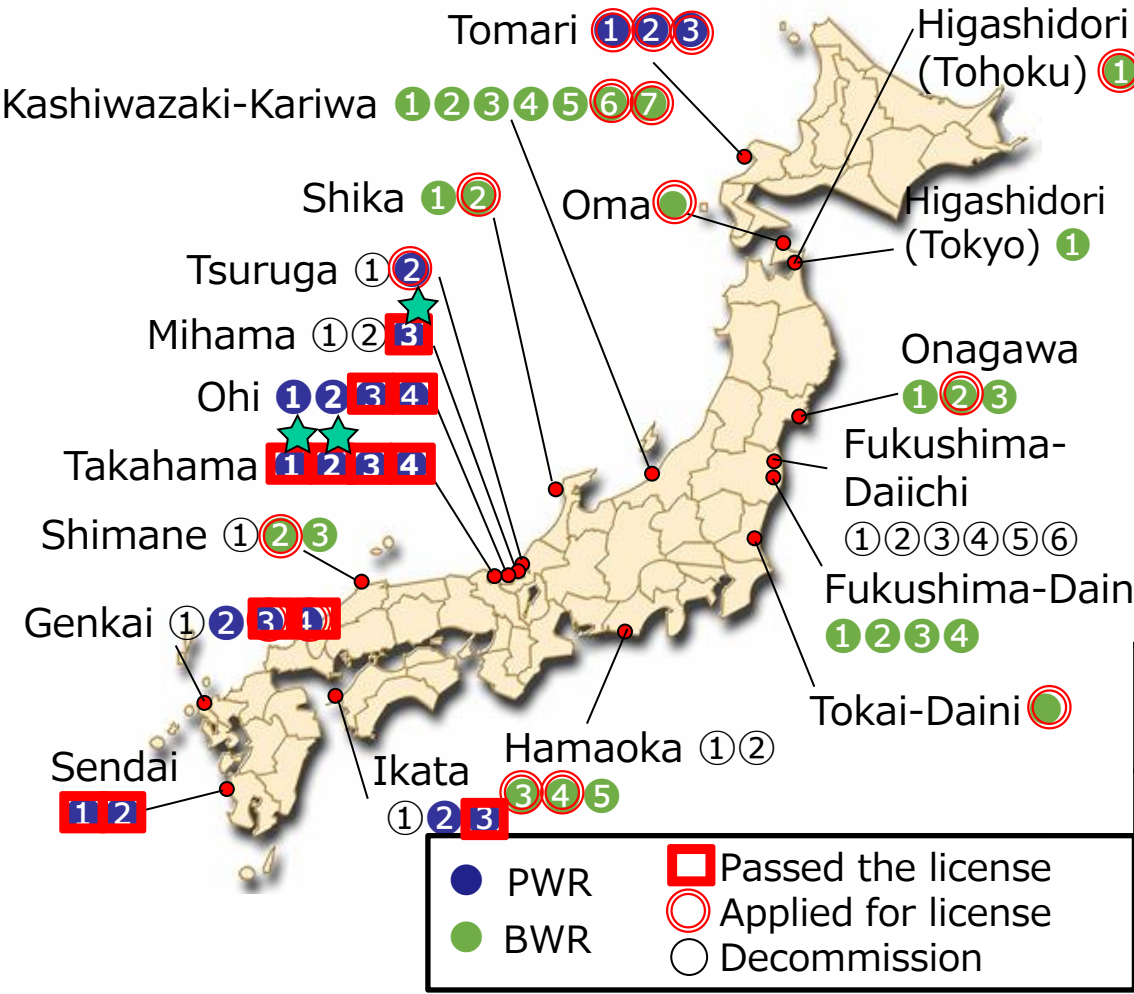


1. Status of Nuclear Power Stations in Japan

- Status of restart
- Challenges for nuclear power generation

Status of restart (1)

- 26 plants (16 PWRs and 10 BWRs) applied for the installation license to meet the new regulatory requirement.
 - 12 Plants (PWR) passed the review of the installation license.
- 3 units licensed to extend operation over 40 years (PWR)



Status of review of installation license	PWR (●)	BWR (●)	Total
Passed (◻)	12	0	12
Applied (○)	4	10	14
Not applied yet	4	15	19
Total	20	25	45

Three plants under construction are included.

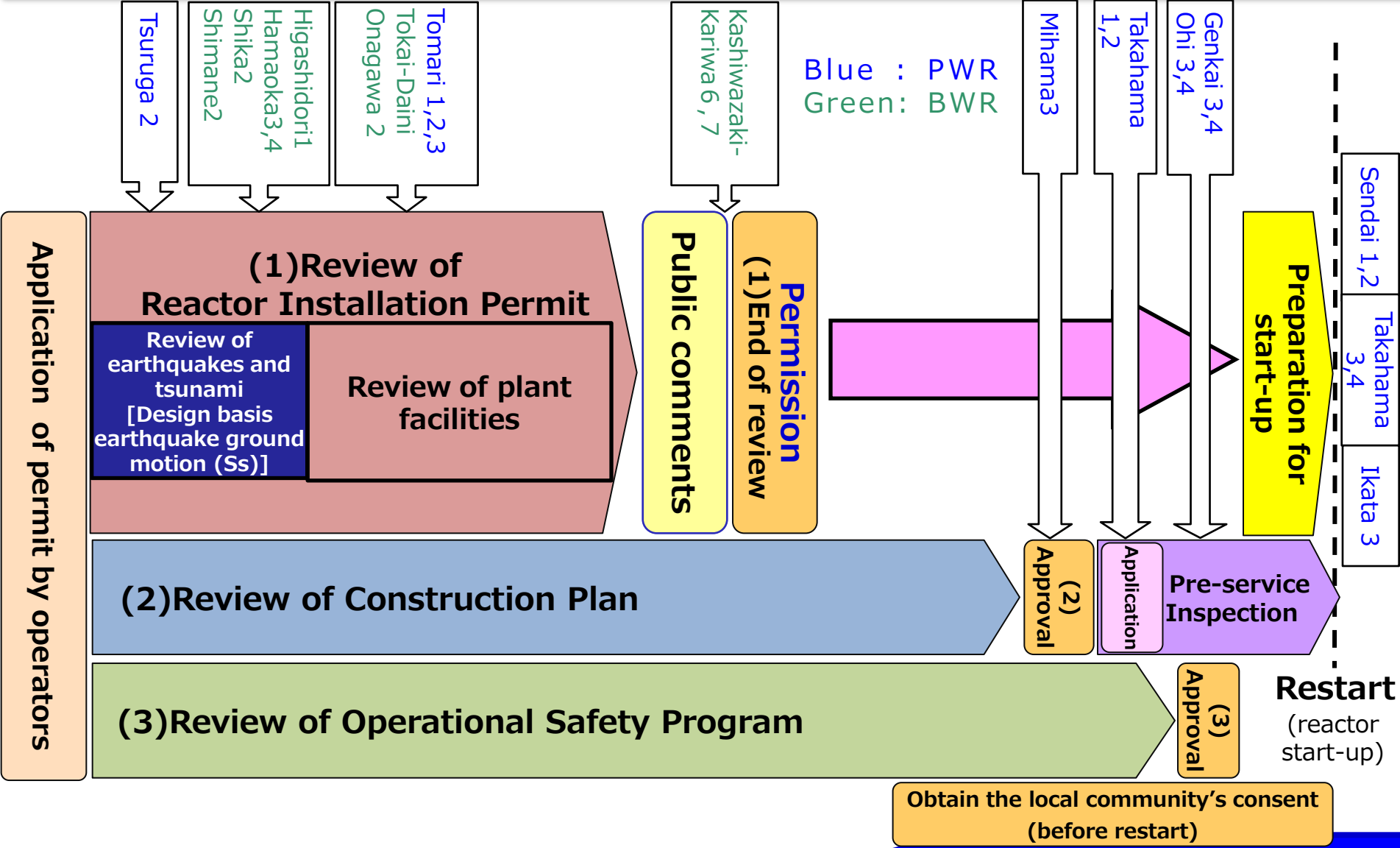
Status of Decommission	PWR	BWR	Total
Decommission (○)	4	10	14

★ : Licensed to extend operation over 40 years

- PWR
- BWR
- ◻ Passed the license
- Applied for license
- Decommission

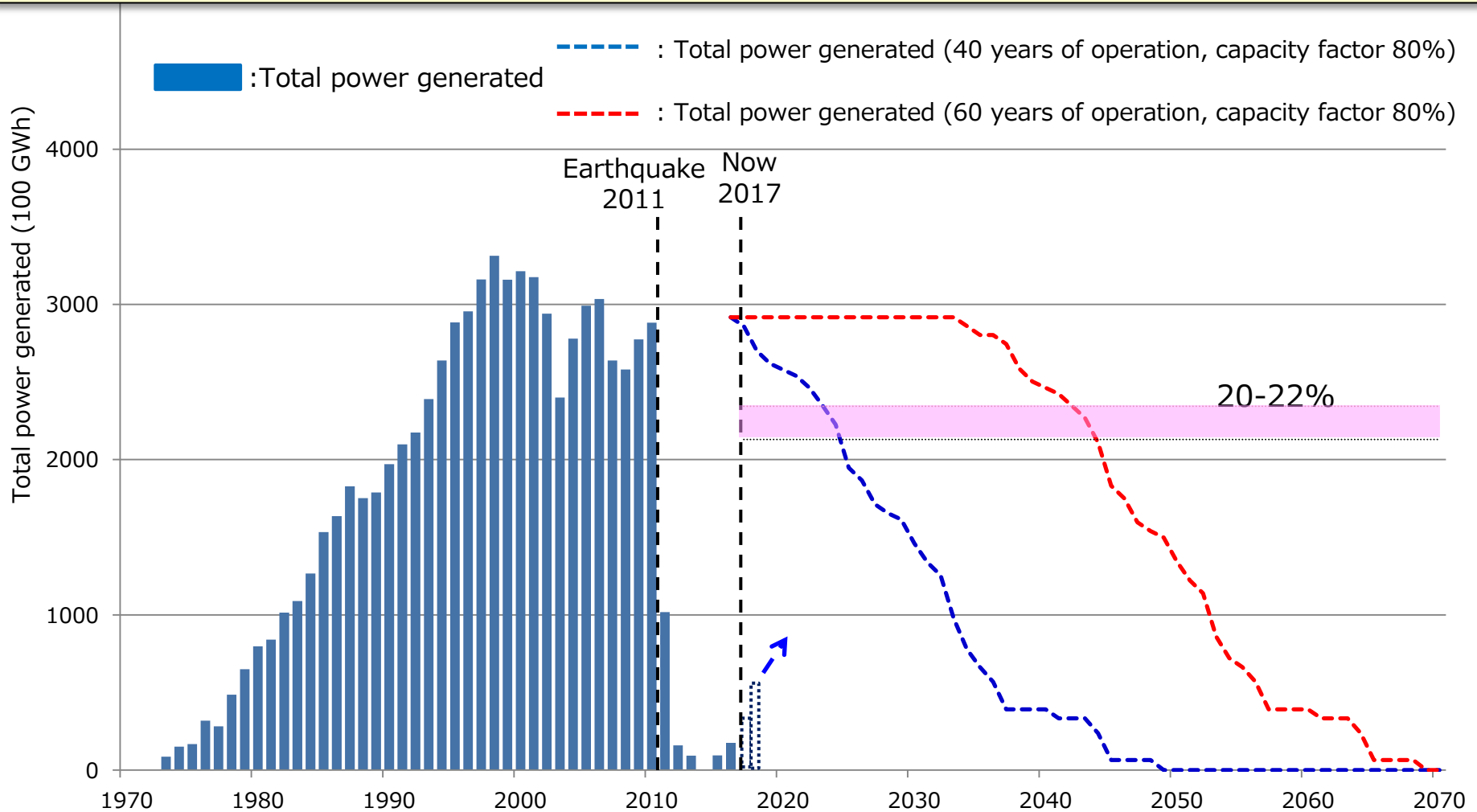
Status of restart (2)

➤ Reviews of BWR are delayed, especially it takes time in the reviews of earthquake and tsunami.



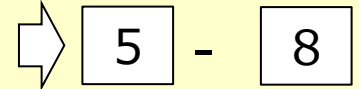
Status of restart (3)

➤ Restart, operation extension beyond its 40 years and replacement are essential to achieve and maintain nuclear power's share of 20 to 22% in Energy Mix as national policy.

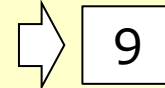


➤ Restoring the society's trust in nuclear power

- Promoting self safety improvement measures



- Cooperation between Japanese and U.S. nuclear operators

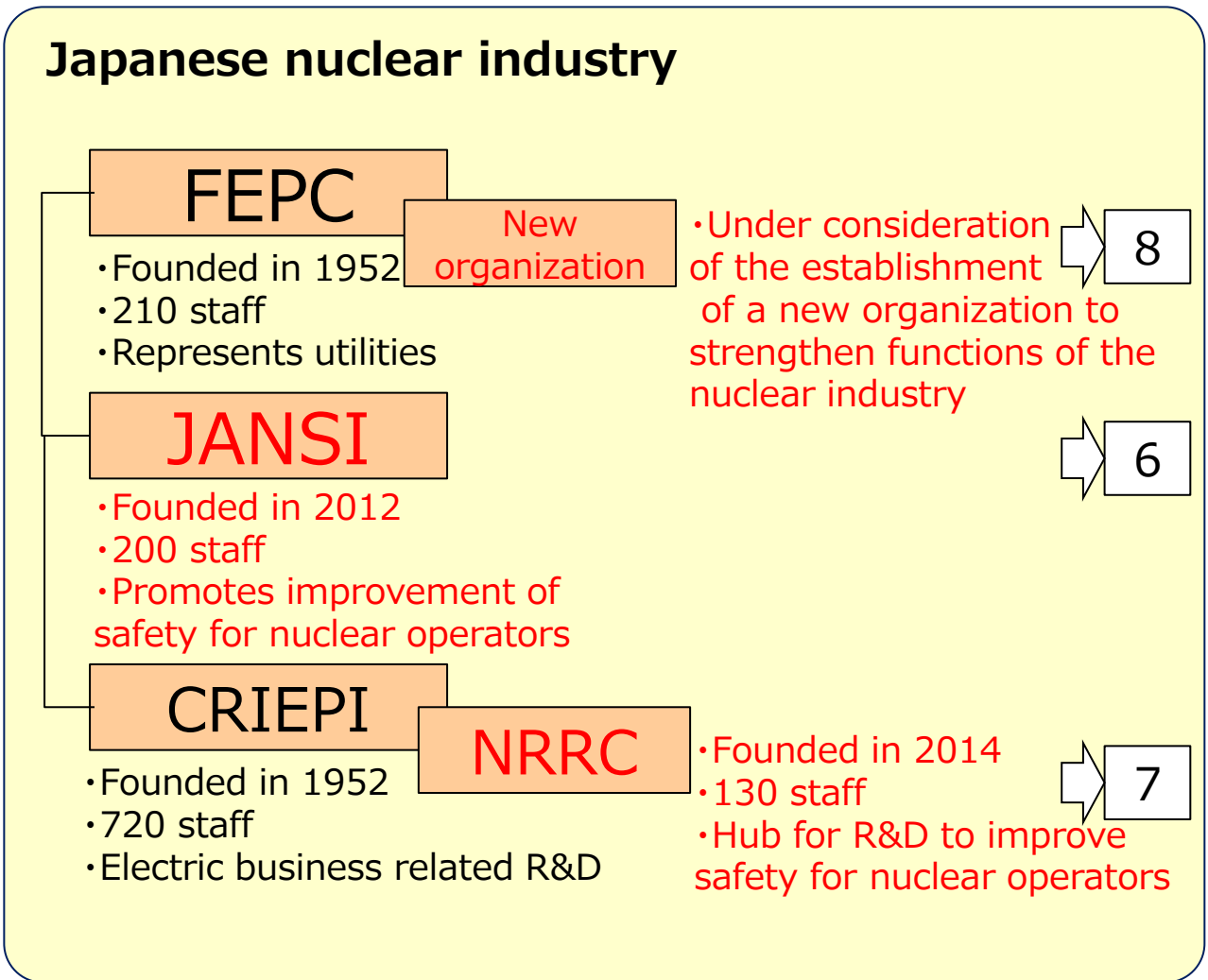
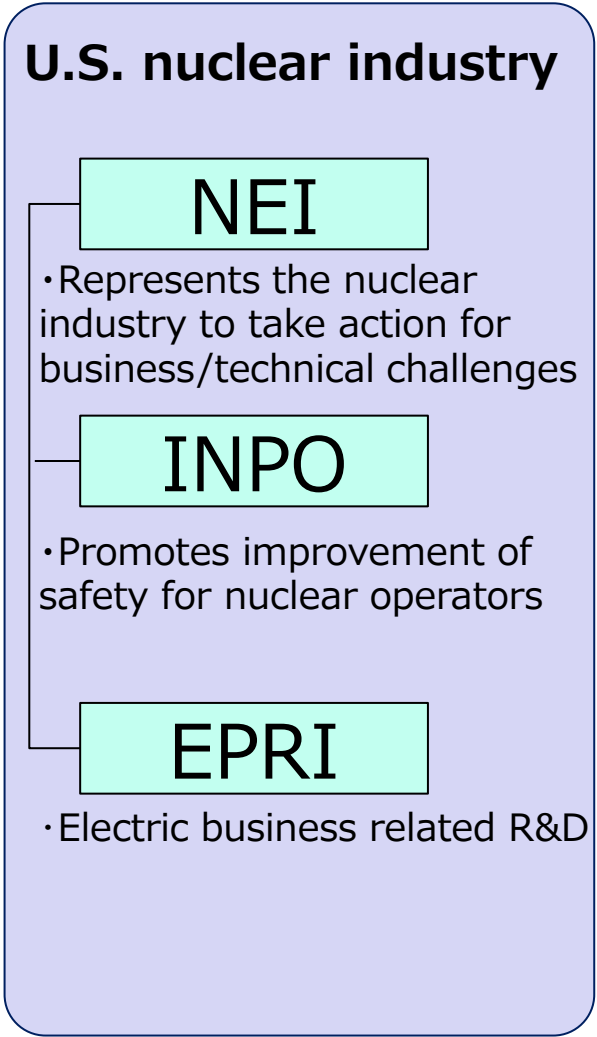


Challenges requiring action:

1. Significant delays in the review of the conformity to new regulatory requirements (BWR in particular)
2. Dialogue with the Nuclear Regulation Authority
Summarizing industry-wide actions in a single voice (Japanese NEI)
3. Nuclear lawsuit
4. The road to replacement
5. Maintaining human resources and technology

2. Restoring the society's trust in nuclear power generation (The nuclear power revival)

- Utilizing JANSI
- Utilizing NRRC
- Strengthening functions of the nuclear industry
(Japanese NEI)
- Cooperation between Japanese and U.S. nuclear operators



(1) Evaluation/providing suggestions/recommendations and support for nuclear facilities

- ① Conducting peer reviews
Quadrennial peer review of Power stations
- ② Strengthening support activities
- ③ Comprehensive evaluation of power stations
Reviewing a rating system
- ④ Safety culture assessment

(2) Base activities

- ① Cultivating safety culture
- ② Evaluating from the perspective of defense in depth
Proposing action for improving safety based on good practices worldwide
- ③ Structuring a human resource cultivation system

**Executive Advisor
to the Center
Dr. R. A. Meserve**

(Former Chairman of
the Nuclear Regulatory
Commission)



(Visits to Japan: approx. 1 week×4 times/year)

**Head of the Center
Dr. G. Apostolakis**
(Former member of
the Nuclear Regulatory
Commission)



(Visits to Japan: approx. 2 weeks×4-5times/year)

(Approx. 140 staff)

**Dialogue with
Presidents (CEO)**

**Chief Nuclear Officer
Conference**

Technical Conference

- Working group 1
(Risk assessment team)
- Working group 2
(External natural event
team)

Technical Advisory Committee
(Chairman: Mr. John W. Stetkar)

(Held: approx. 1 week×8 times)

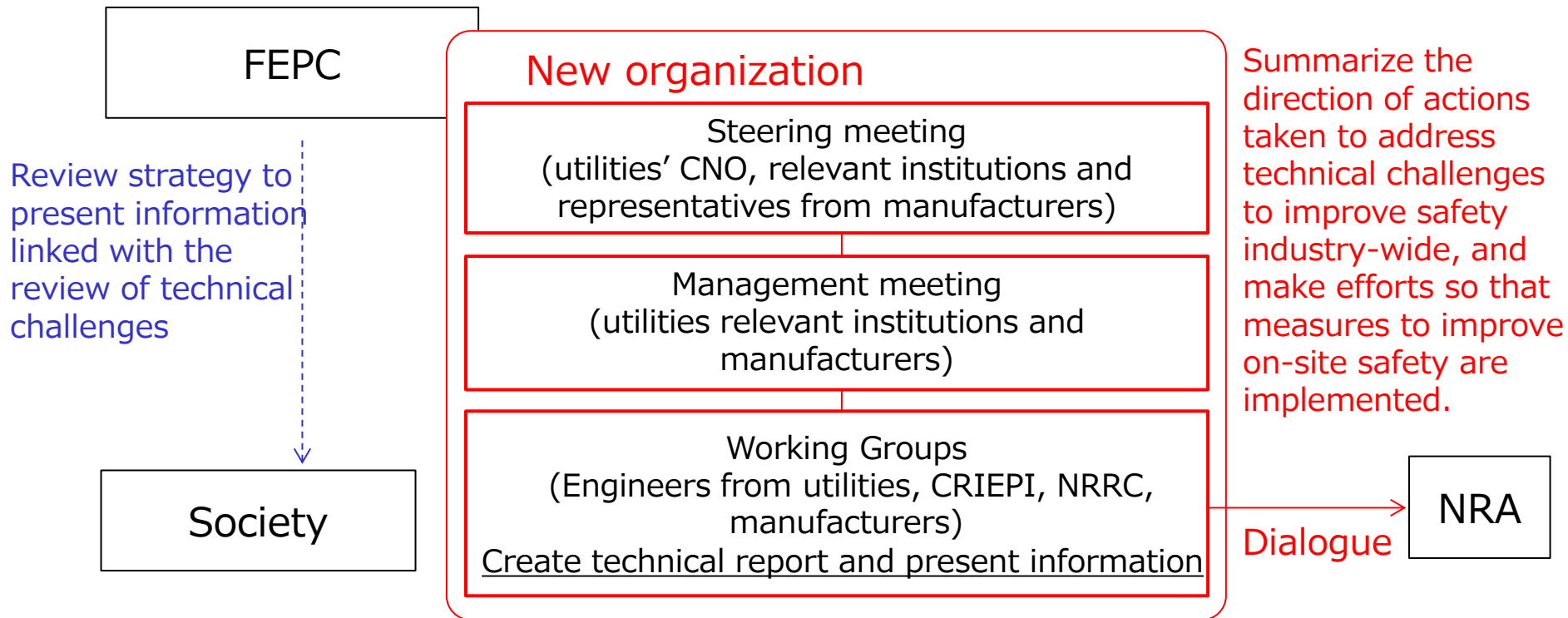
(1) Establishing a foundation to structure a good PRA

- Supporting pilot projects
(Shikoku Electric Ikata Unit 3 (PWR) , TEPCO HD Kashiwazaki Kariwa Units
6, 7 (BWR))
- Conducting PRA peer review
- Promoting establishment of PRA database

(2) R&D to improve safety

Assess: Ground fault, seismic impact, tsunami impact, tornado impact,
volcano impact, fire protection, flooding, fire impact, severe accident

Strengthening functions of the nuclear industry (Japanese NEI)



<Points for strengthening functions>

1. Solve common challenges for the nuclear industry
2. Have dialogue with the NRA representing the nuclear industry
3. Present information to society

Commenced the Japan-U.S. CNO conference in 2013 as a part of the activity to improve safety by learning from the world. Japanese/U.S. CNO are conducting exchange activities by pairing utilities and also activities by subcommittees regarding PRA implementation and support for restart of operation.



<Conferences held between Japanese and U.S. CEO>

- Sept. 2013 First Japan/U.S. CNO conference (Tokyo)
- Sept. 2014 Second Japan/U.S. CNO conference (Arizona)
- Sept. 2015 Held with eight U.S. staff at the timing of the new CNO training in the U.S. (Tokyo)
- Mar. 2016 Held with six U.S. staff at the timing of the Fukushima Forum IV(Tokyo)
- Apr. 2016 Four Japanese staff participated in the U.S. INPO CNO conference (Atlanta)
- Sept. 2017 Held with four U.S. staff at the timing of the new CNO training in the U.S. (Tokyo)



U.S. survey and exchanging opinion regarding implementation of ROP

In reviewing the Japanese inspection system, opinions are being exchanged between FEPC/utilities and NRC/relevant industry staff to understand the principle of implementing ROP in the U.S. and identifying skills and tools required by utilities in the future.

- May 2017 Visited NEI, NRC
- Nov. 2017 Visited NRC
- Dec. 2017 Visited Duke Energy