



Nuclear Safety Supervision and Control in China

Y.ZHAO

DDG, Dept. of Nuclear Installation Safety Supervision

,MEP (NNSA)

8 Oct. 2013





I .National Nuclear Safety Administration

➤ **Regulation Responsibility**

NNSA is regulator in China for:

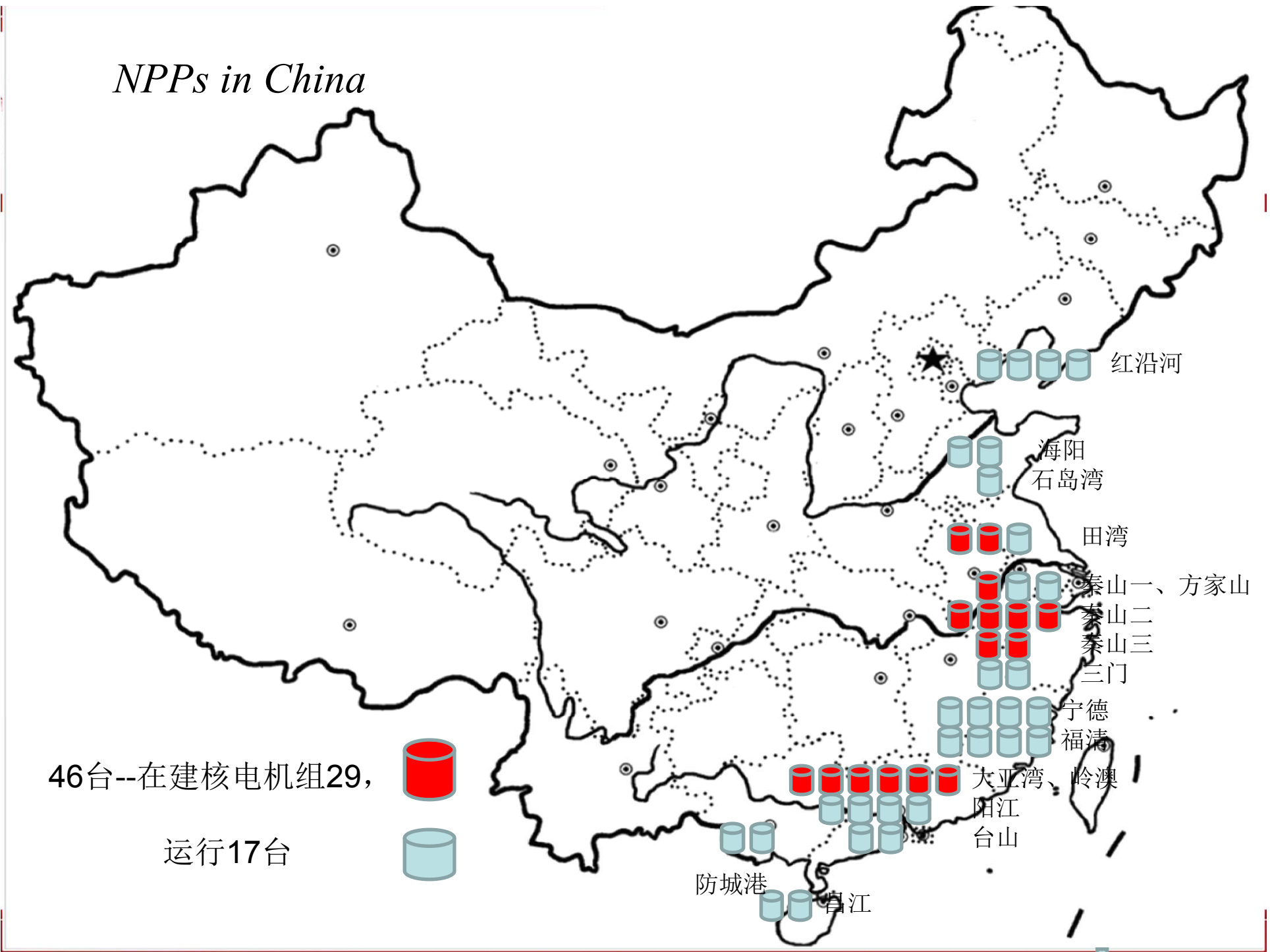
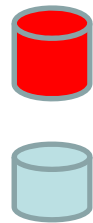
- nuclear safety;
- radiation safety ;
- radiological environment management.

➤ **Regulation System**

- Licensing system;
- two levels management: centre government and province;

NPPs in China

46台--在建核电机组29,
运行17台



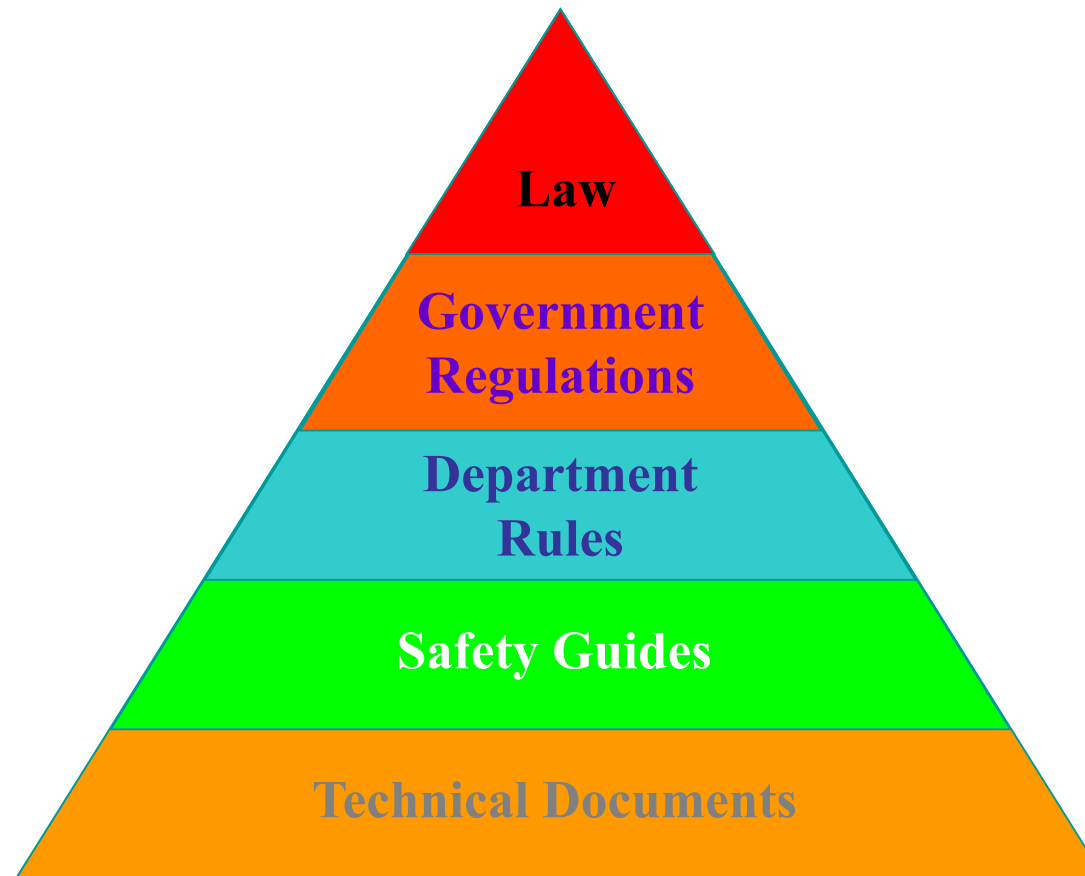


➤ **Regulation Scope**

- NPPs, research reactors and nuclear fuel cycle facilities;
- Nuclear technology application;
- Uranium (thorium) mining and NORM;
- Facilities for radioactive waste processing and disposal;
- Electromagnetism radiation device and facility.



II. Legislation of Nuclear Safety Regulations





➤ **Issued laws of nuclear and radiation safety**

- Act of Environmental Protection;
- Act of Prevention and Control of Radioactivity Pollution;
- Act of Environment Impacts;
- Nuclear Safety Law in the preparation;



➤ **Issued administrative regulation for nuclear and radiation safety**

- Regulations on the Safety Regulation for Civilian Nuclear Installations
- Emergency Management Regulations for Nuclear Accidents of Nuclear Power Plant
- Regulations on Nuclear Materials Control
- Regulations on the radiation protection for radioactive isotope and irradiation device



➤ **Issued administrative regulation of nuclear and radiation safety**

- Regulations on Supervision and Control of Civil Nuclear Safety Equipment
- Regulations on Safety Management of Transport of Radioactive Substance
- Regulations on Safety Management of Radioactive Waste

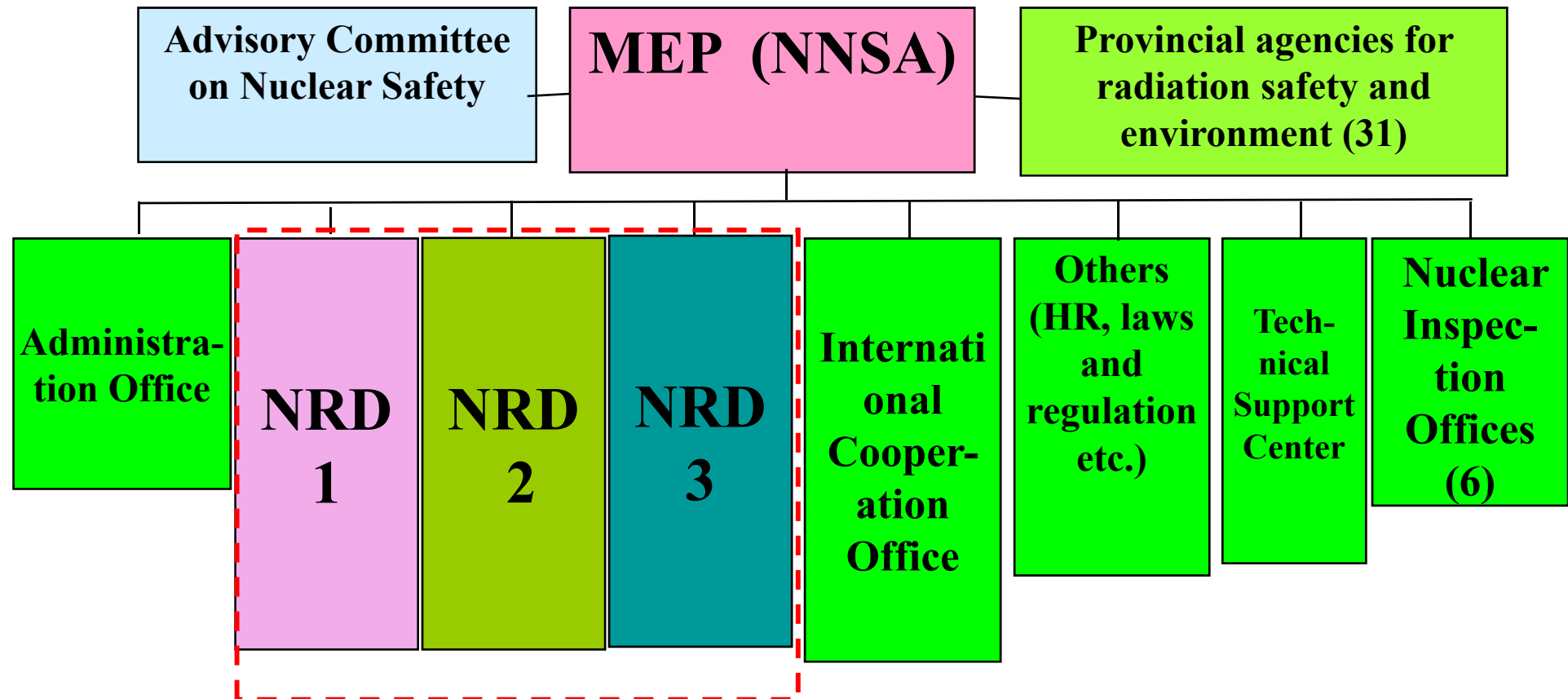


➤ **Department Rules and guides**

- Nuclear power plant design safety regulations
- Nuclear power plant operation safety regulations
-



III. Organization System of NNSA





➤ **NNSA improved in past 5 year, especially after Fukushima accident.**

- Human resource doubled : now 1100 staff
 - ✓ Headquarter: three technical departments, and one international cooperation office, staff 85
 - ✓ Six Regional offices, 331
 - ✓ Two TSOs, NSC: 600, RMC: 100 staff
- Regular Budget doubled: RMB 200 million in 2011, and in 2013, 390 million.



Training for new staff:



- general training for officers
- five-month training course;
- half-year training;
- One-year on-the-job training;



IV. Post-Fukushima Requirements for NPP

- **Actions after the Fukushima nuclear accident,**
 - **Action 1:** conformity review with regulations and standards : **Comprehensive Safety Examination**
 - **Action 2:** evaluation of safety margins: **Safety Margin Assessment for External Event**
 - **Action 3:** studying of new safety requirements
Nuclear Safety Plan



Post-Fukushima Requirements for NPP



- **Improvement requirements for nuclear power plants.**

- overall requirement;
- specific requirement

- **The specific requirements would be implemented in three phases:**

- short-term;
- medium; and
- long-term items



Overall requirements



- To pay close attention to investigation into Fukushima accident, getting feedback, evaluating improvements;
- To enhance the pre-warning and response ability against external disasters;
- To upgrade the monitoring and emergency ability, emergency resources and ability sharing;
- To improve the public communication mechanism, wage a public information campaign;



specific requirements

(Short-term items)



1. Checking and completing the water tightness of cable /pipe penetrations, doors/windows and ventilation ports;
2. Strengthening the effectiveness of earthquake monitoring system;
3. Setting up extra mobile power, pumps and providing to maintain core cooling and monitoring capacity after serious accidents.



specific requirements

(Medium and long-term items)



1. serious accidents management guideline ;
2. ability and reliability of system and equipments for serious accidents;
3. conducting probability safety analysis for external events;
4. renovation for flood-prevention;
5. evaluation of the effect of earthquake-triggered tsunami ;
6. complete the emergency monitoring plan in case of serious accidents;
7. analyzing and evaluating functions and inhabitability of emergency control center;



overall progress



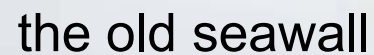
Up to now:

- Short-term safety improvements have been completed.
- medium and long-term safety improvements:
Most of the improvements have been completed,
others are still in progress.



photos of modification site







photos of the new added emergency equipments





Thank you!