

The Role of Science in Shaping Nuclear Policy Issues

**HPS- Baltimore-Washington Chapter
Commissioner William C. Ostendorff
Nuclear Regulatory Commission**

February 24, 2011

Personal Background

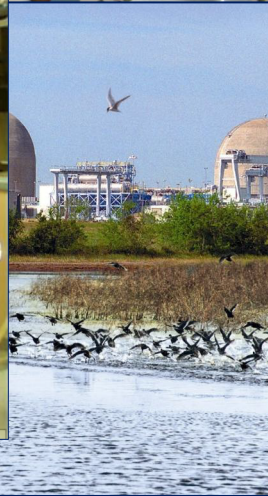


What we do

Safety



Security

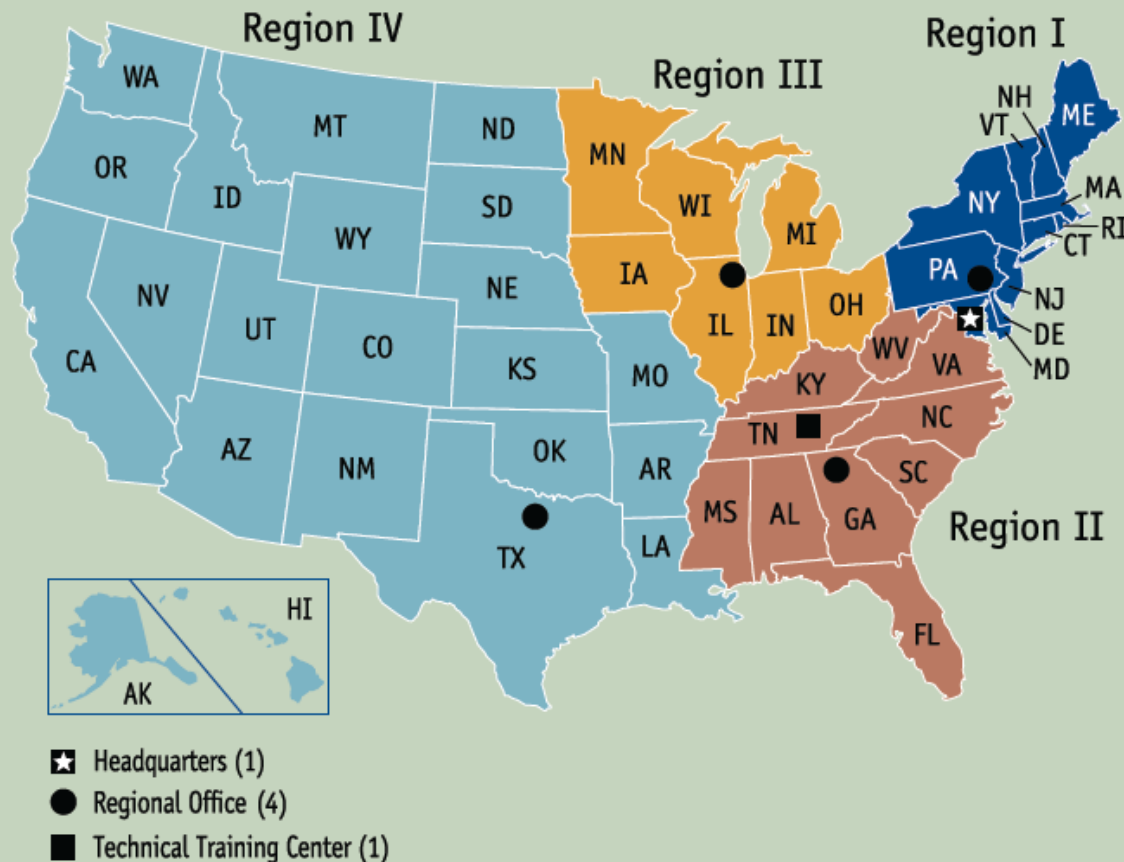


Environment

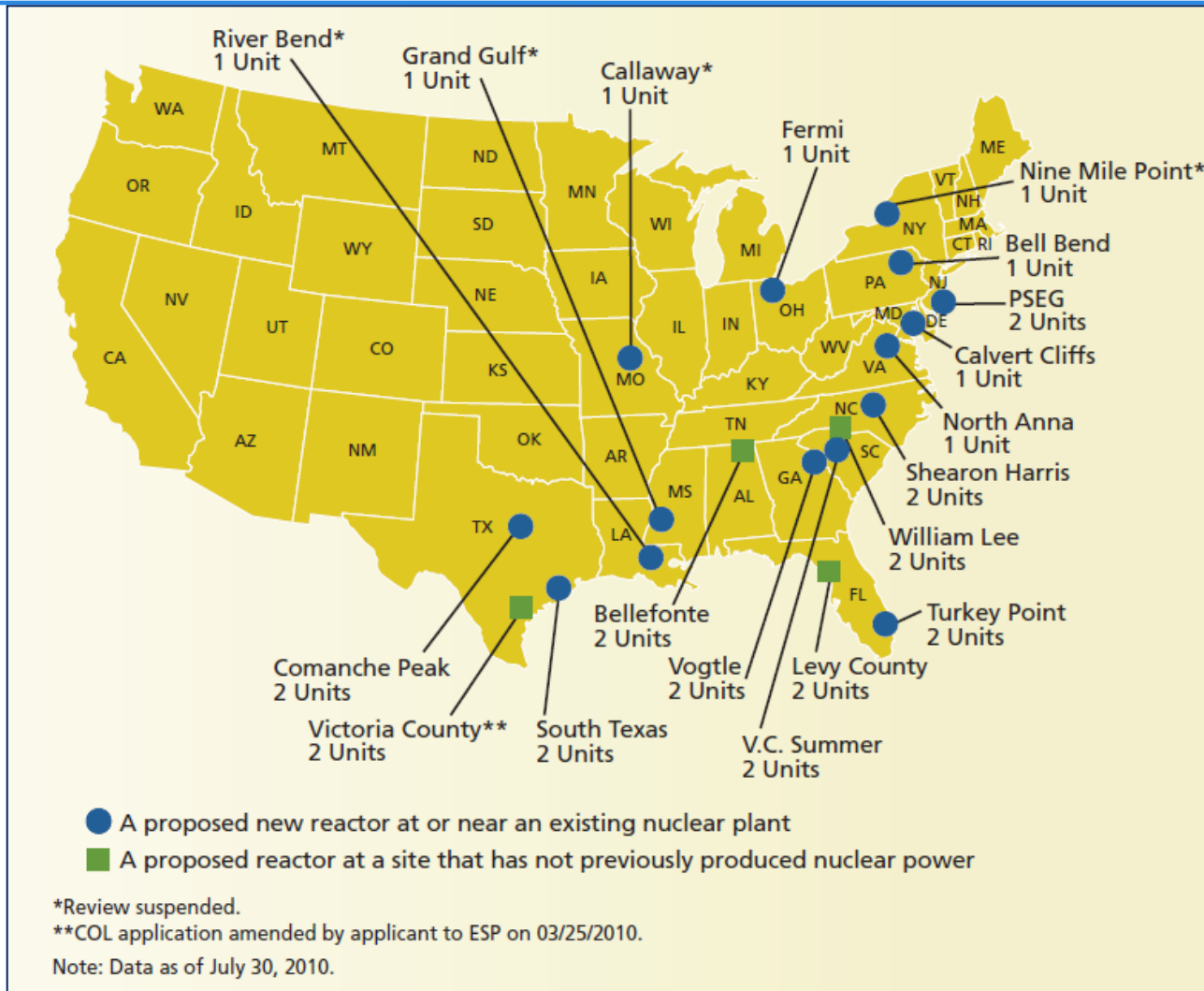


Where we are located










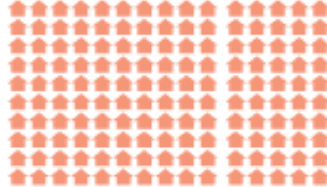
NRC Regional Map



The National Landscape-US New Reactor Applications



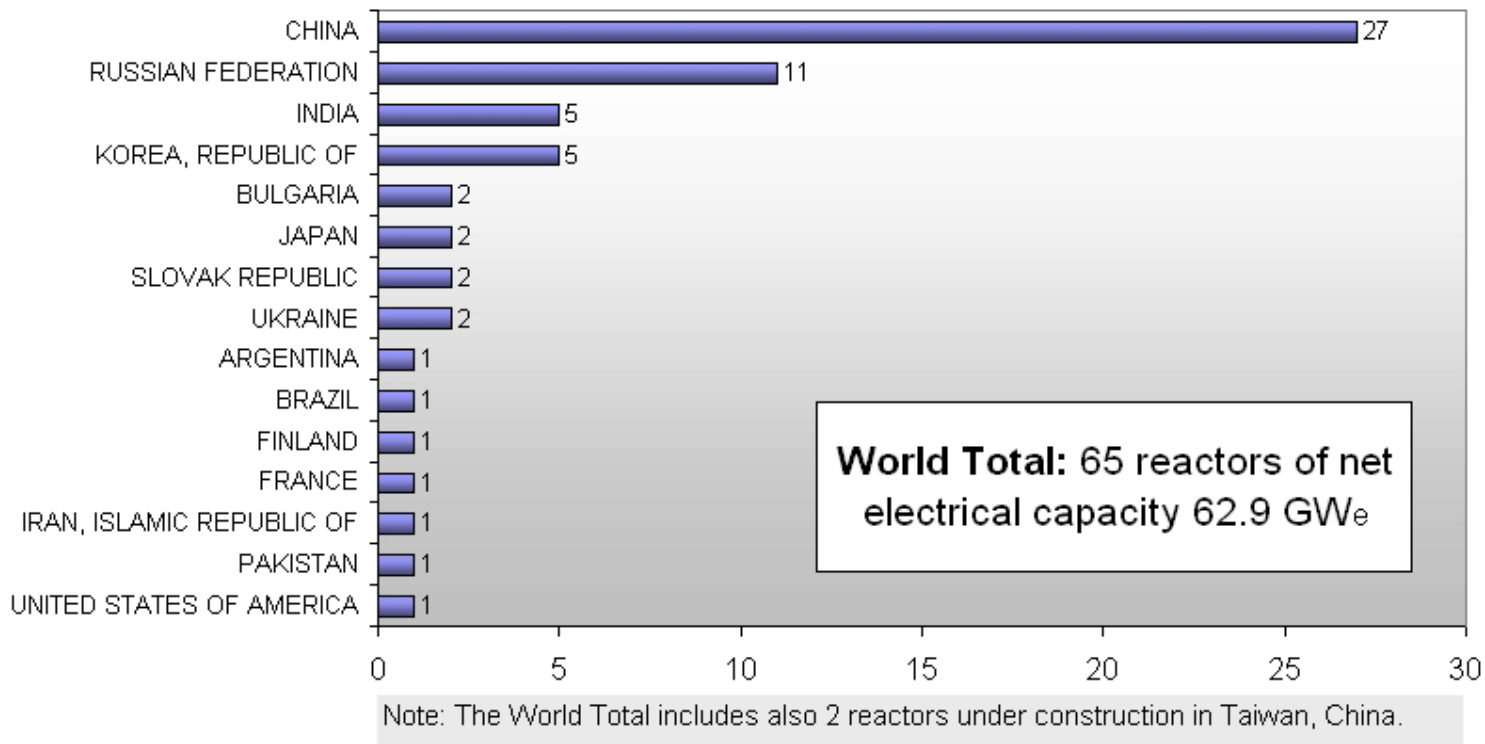
The National Landscape- Small Modular Reactors

CORE VESSEL	 Toshiba 4s Nuclear Battery	 Hyperion Power Module	 NuScale Power Plant	 TerraPower TWR	 <i>Conventional nuclear reactor</i>
TYPE	Sodium-cooled fast neutron reactor	Liquid-metal cooled fast-neutron reactor	Light-water thermal reactor	Traveling-wave reactor, which uses depleted uranium	Pressurized water or boiling light-water thermal reactor
REFUEL	Every 30 yrs.	Every 8 to 10 yrs.	Every 2 yrs.	Every 40 yrs.	Every 18 mos. to 2 yrs.
POWER OUTPUT	 = 10,000 Enough for about 10,000 households	 Enough for about 25,000 households	 Enough for about 45,000 households	 Enough for about 50,000 households	 Varies, some can power 1.5 million households

Source: Washington Post, September 14, 2010

Global Nuclear Development

Number of Reactors under Construction Worldwide



**Source: IAEA Power reactor Information Database,
02/01/2011**

The National Landscape- The Fuel Cycle



- Construction of the National Enrichment Facility in Eunice, NM
- Smith Ranch-Highland In Situ Recovery Wellfield, Converse Co., WY





Regulatory Philosophy

NRC principles of good regulation...

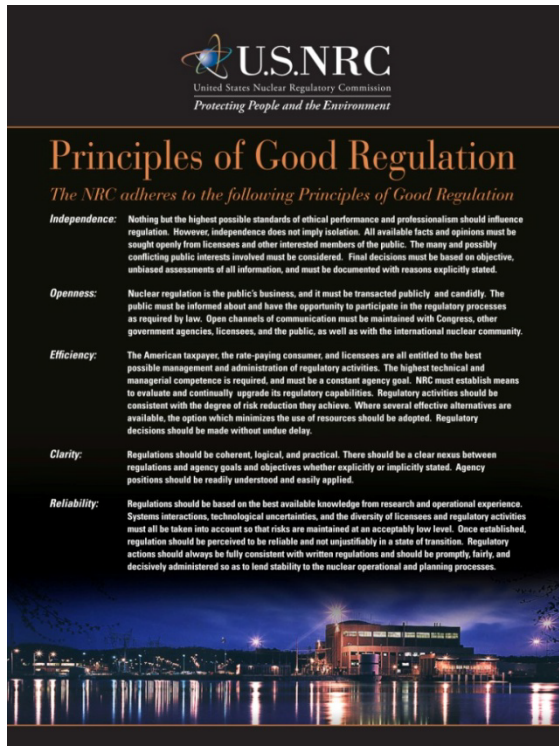
Independence


Openness

Efficiency

Clarity

Reliability




United States Nuclear Regulatory Commission
Protecting People and the Environment

Principles of Good Regulation

The NRC adheres to the following Principles of Good Regulation


Independence: Nothing but the highest possible standards of ethical performance and professionalism should influence regulation. However, independence does not imply isolation. All available facts and opinions must be sought openly from licensees and other interested members of the public. The many and possibly conflicting public interests involved must be considered. Final decisions must be based on objective, unbiased assessments of all information, and must be documented with reasons explicitly stated.

Openness: Nuclear regulation is the public's business, and it must be transacted publicly and candidly. The public must be informed about and have the opportunity to participate in the regulatory processes as required by law. Open channels of communication must be maintained with Congress, other government agencies, licensees, and the public, as well as with the international nuclear community.

Efficiency: The American taxpayer, the rate-paying consumer, and licensees are all entitled to the best possible management and administration of regulatory activities. The highest technical and managerial competence is required, and must be a constant agency goal. NRC must establish means to evaluate and continually upgrade its regulatory capabilities. Regulatory activities should be consistent with the degree of risk reduction they achieve. Where several effective alternatives are available, the option which minimizes the use of resources should be adopted. Regulatory decisions should be made without undue delay.

Clarity: Regulations should be coherent, logical, and practical. There should be a clear nexus between regulations and agency goals and objectives whether explicitly or implicitly stated. Agency positions should be readily understood and easily applied.

Reliability: Regulations should be based on the best available knowledge from research and operational experience. Systems interactions, technological uncertainties, and the diversity of licensees and regulatory activities must all be taken into account so that risks are maintained at an acceptably low level. Once established, regulation should be perceived to be reliable and not unjustifiably in a state of transition. Regulatory actions should always be fully consistent with written regulations and should be promptly, fairly, and decisively administered so as to lend stability to the nuclear operational and planning processes.

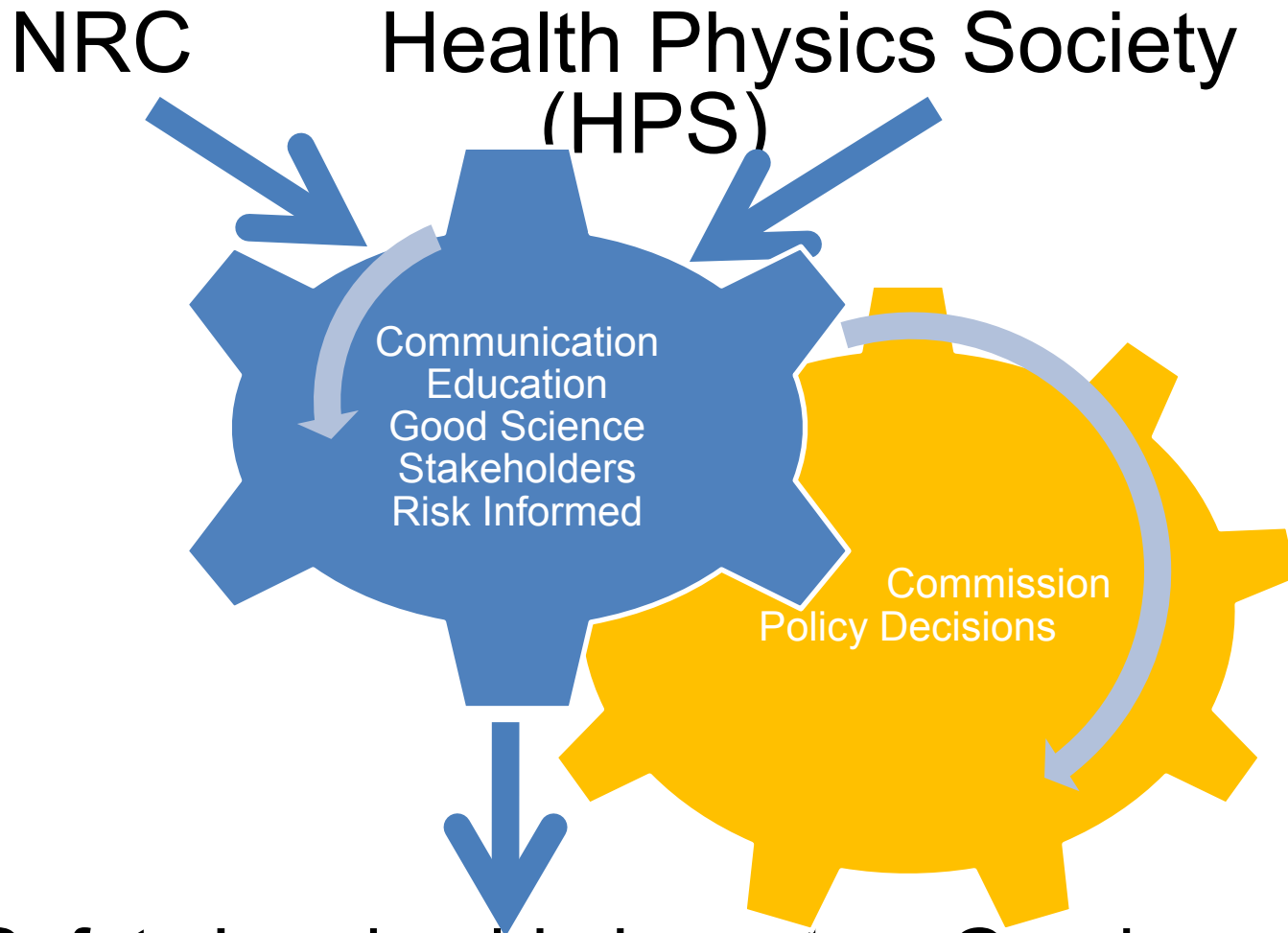


How Can the U.S. Remain a Leader in Nuclear Technology Safety?

- US leadership in nuclear science and technology will promote safety
- Access to the best available knowledge
- Risk informed/performance based regulation
- Full stakeholder engagement
- Communication and education

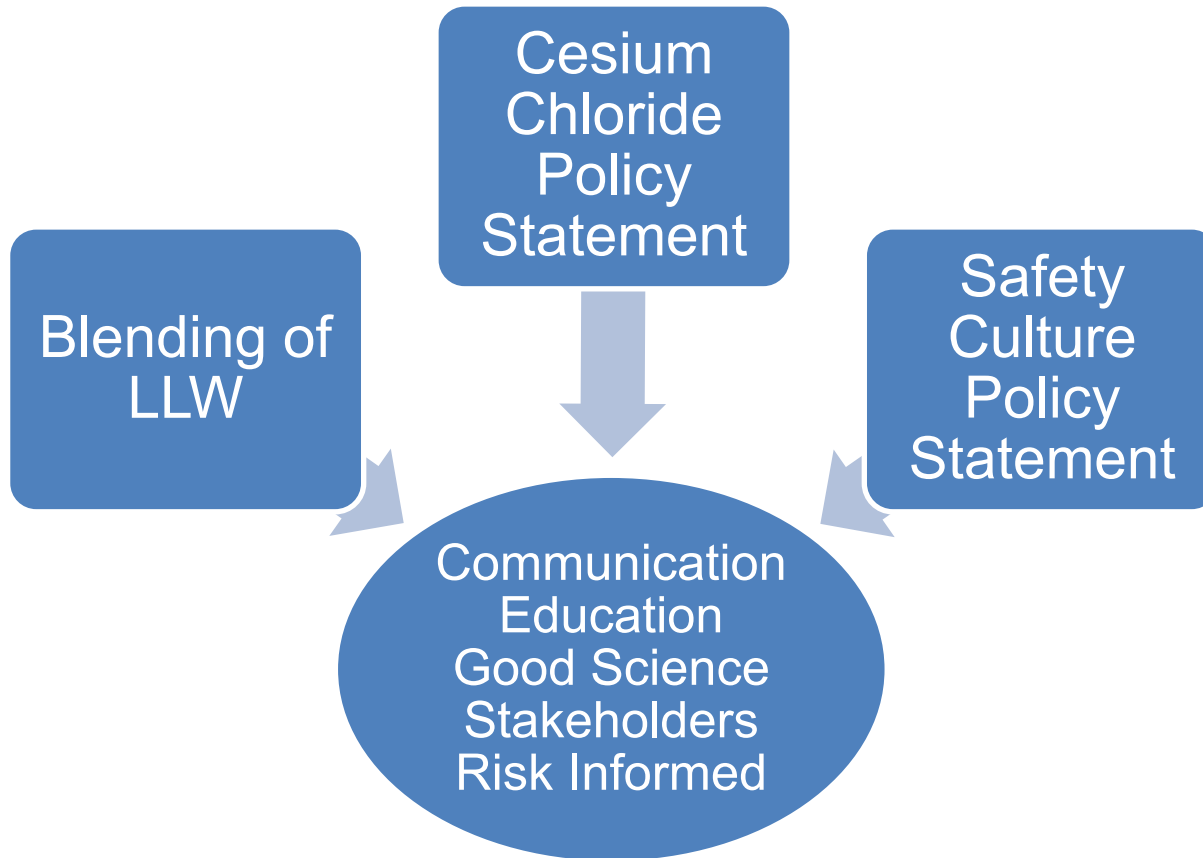
The HPS is uniquely positioned to be a key player

Overview



U.S. Safety Leadership based on Good Science

Recent Commission Policy Issues



Risk Informed Decisions Based on Good Science

- Risk informed decisions promote efficiency
- The Commission's recent decision on blending was risk-informed
- HPS provided valuable input

Communication and Education

- Communication and education promote credibility and openness
- These principles align with HPS's mission
- These principles impacted the Commission's decision on the cesium chloride policy statement



Stakeholder Involvement

- Stakeholder involvement promotes openness
- Development of the safety culture policy statement required extensive stakeholder input
- HPS provided valuable input

Upcoming Commission Policy Issues



Conclusions

- U.S. leadership in nuclear science and technology will ensure domestic and international safety
- The HPS is uniquely positioned to assist the NRC to make decisions based on principals of good regulation
- The HPS and the NRC have complementary roles