

The Importance of Technical Qualification & Continuous Learning

NRC Commissioner William C. Ostendorff

Federal Technical Capability Panel

U.S. Department of Energy

Las Vegas, Nevada

May 15, 2012

Agenda



- Mission and Principles of the NRC
- Position Qualification
- Continuous Learning



Sea Story



NRC Mission



To license and regulate the nation's civilian use of byproduct, source, and special nuclear materials in order to ensure the adequate protection of public health and safety, promote the common defense and security, and to protect the environment.

Principles of Good Regulation



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.



Independence

Openness

Efficiency

Clarity

Reliability



Position Qualification - NRR U.S. NRC

United States Nuclear Regulatory Commission
Protecting People and the Environment

- **Goal of Qualification Program** – prepare employees to perform regulatory duties and implement the agency’s policies, programs, and activities
 - There are multiple different qualification programs for employees at the NRC.
 - Qualification plans are not always intended to ensure or validate staff’s technical skills.
- 

Position Qualification - NRR U.S. NRC

United States Nuclear Regulatory Commission
Protecting People and the Environment

Example – NRR Policy

- **Employees:**

- Will have the necessary admin. resources
- Will possess the knowledge and skills necessary
- Will be credited for relevant previous work experience and training
- Must pass an oral qualification board
- Qualification needs to be maintained and enhanced

- **Qualification Program will be maintained.**



Position Qualification - NRR U.S.NRC

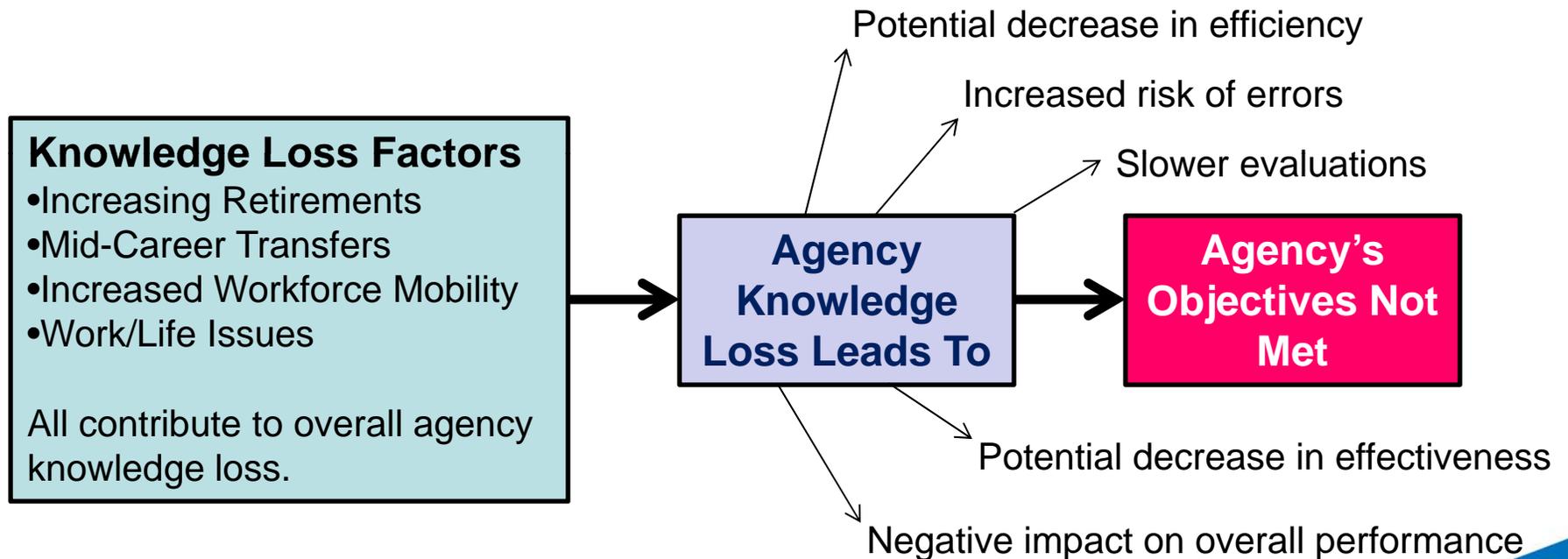
United States Nuclear Regulatory Commission
Protecting People and the Environment

Reactor Technical Reviewer (RxTR) Study Activities

<u>Activity</u>	<u>Topic (time to be completed within)</u>
RxTR-SA-1	Code of Federal Regulations (3 months)
RxTR-SA-2	Current Licensing and Design Basis for Technical Determinations (3 months)
RxTR-SA-3	Technical Specifications and the Final Safety Analyses Report (9 months)
RxTR-SA-4	Backfit Process (15 months)
RxTR-SA-5	Cross-Cutting Technical Reviews (15 months)
RxTR-SA-6	Degraded and Nonconforming Conditions and Operability Determinations (18 months)

Continuous Learning

Impact of Knowledge Lost



Continuous Learning



Four Categories of Interest:

- Human resources processes, policies and procedures
- Knowledge sharing practices
- Knowledge recovery practices
- Information technology applications



Continuous Learning



- Rotational Program
- Foreign Exchange



Continuous Learning

- Expertise Exchange

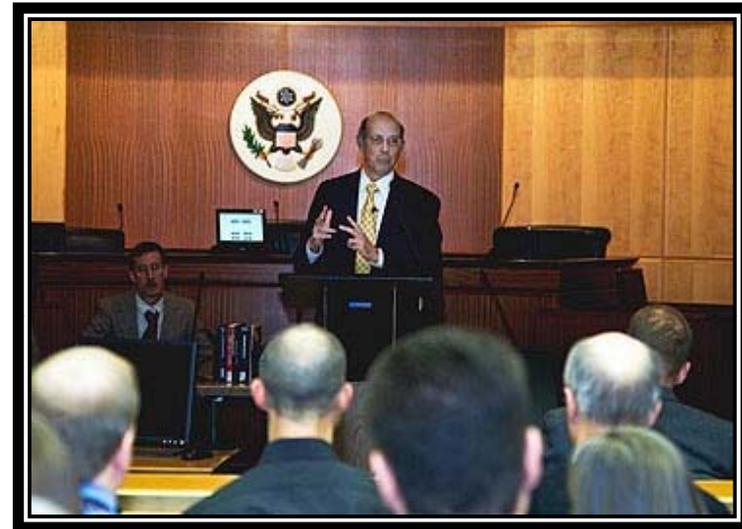


- Seminars



Continuous Learning

- Brown Bags



- Lectures

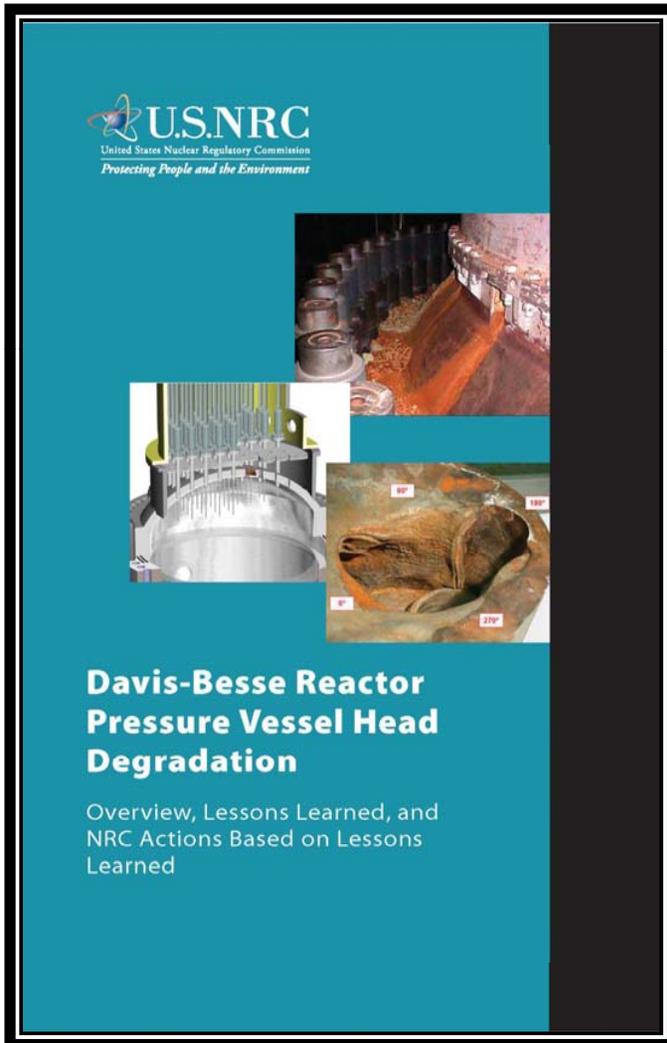


Continuous Learning

**Davis-Besse Nuclear
Power Station**
Oak Harbor, Ohio



Continuous Learning



2002 Davis-Besse Lessons-Learned Task Force

- Performance and programmatic issues were a repeat of similar issues from previous lessons-learned reports

2004 Effectiveness Review Lessons-Learned Task Force

- Corrective actions from previous lessons-learned reports not effective

Continuous Learning

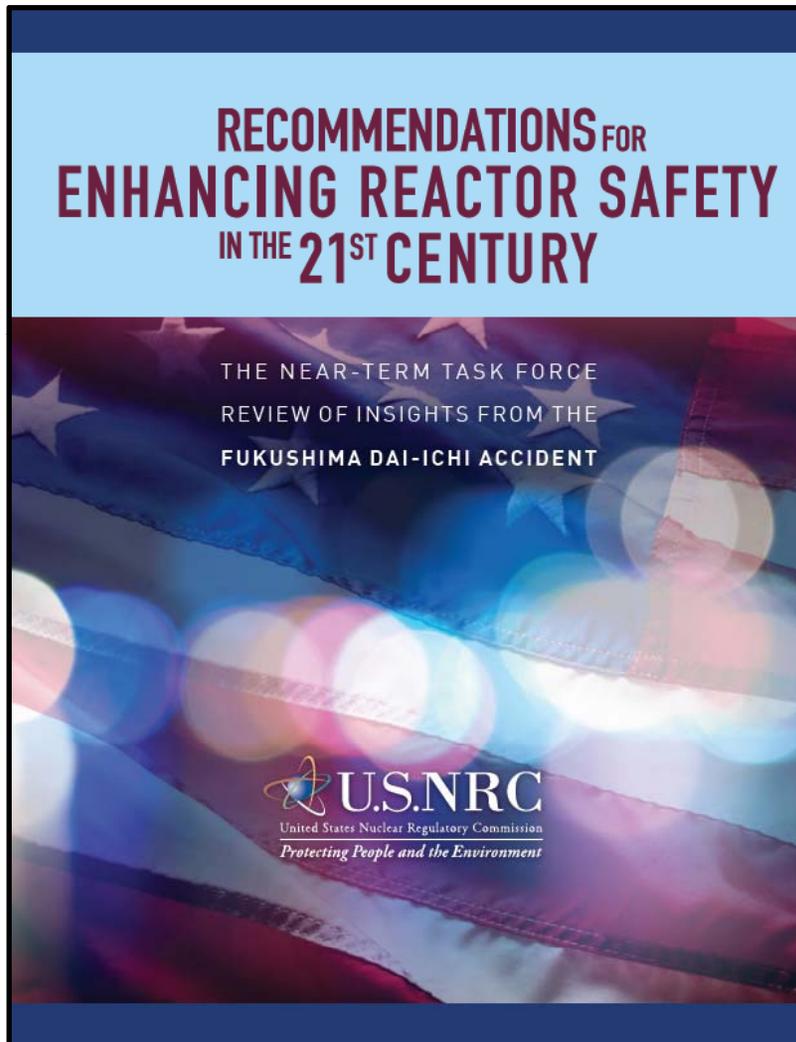


Objectives of NRC Lessons-Learned Program:

- Establish a formal and rigorous process to ensure correction of significant agency deficiencies
- Provide reasonable assurance that major organizational problems identified by lessons learned will not recur
- Institutionalize the knowledge gained through the corrective action processes and develop solutions for long-term organizational retention
- Confirm the long-term effectiveness of corrective actions



Continuous Learning



Fukushima Near-Term Task Force Report

Systematic and *methodical* review

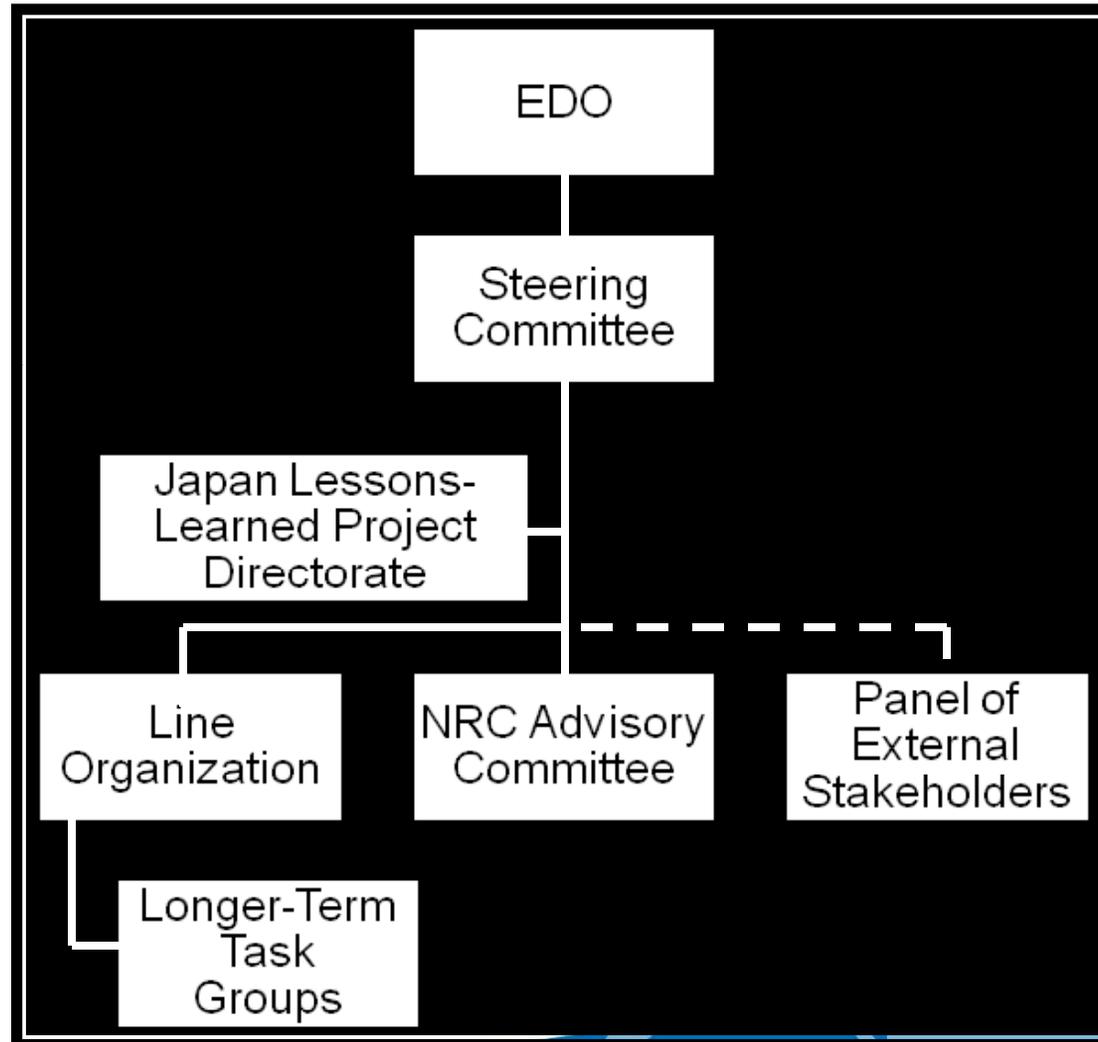
- 90-day effort
- Short- and long-term recommendations

Continuous Learning

- External hazard design
 - Seismic and flooding
- Prolonged loss of AC power
 - “Station Blackout” coping
- Reliable containment venting
 - Boiling water reactors (BWRs)
- Multi-unit events
- Spent fuel pools



Continuous Learning



Continuous Learning



- **Where do we go from here?**
 - Keep it up and do more
 - Support the KM Center and work to upgrade
 - Continue to interview subject matter experts and employees who plan to retire
 - Compile and catalogue best practices from subject matter experts and make them accessible to the staff



Thank You



Questions?

Comments?

Discussion?



Extra Slides



Continuous Learning

Implementing
Knowledge
Management

NRR Example

NRR
Knowledge Management

Communication

- **"Have I Got News for You":** NRR's monthly newsletter distributed to NRR employees highlighting office activities and events.
- **NRR Monthly Administrative Newsletter:** A monthly newsletter distributed to Administrative Assistants providing tips and information on processes, procedures, and resource tools.
- **Inspector Newsletter:** A quarterly publication used as an informational tool for inspectors to share lessons learned and tips from inspections and/or events that have occurred in operating reactors.
- **Storytelling and Open Discussion:** Periodic meetings, retreats - sharing stories is an excellent tool for knowledge transfer.

Collaboration

- **Branch Chief and Team Leader Seminars:** Quarterly seminars focusing on relevant topics and resource tools for supervisors.
- **Qualification Programs:** Individualized training programs for Technical, Administrative, Project Management, Branch Specific, and New Employee Orientation.
- **Regulatory Information Conference:** Annual conference providing an open forum for stakeholders and interested members of the public to learn more about and share information on regulatory activities.
- **DORL Center for Planning and Analysis Branch:** Conducts business modeling and analysis to capture and define NRR processes. Provides an integrated support site that includes knowledge management in implementing Enterprise Project Management services.

INFORMATION SHARING = POWER

Creative Innovation

- **DIRS Operating Experience (OpE):** NRR Reactor OpE Information Gateway website is a communication and knowledge-sharing tool for nuclear reactor operating experience. The OpE branch is designing a SharePoint site to assist with the collaboration, socialization, and management of OpE products and documents to exchange information with internal stakeholders.
- **Topical Report Library:** Provides NRC staff with access to key topical reports. The collection today contains over 200 topical reports categorized by vendor and topic with reports being added daily.
- **SharePoint Portal:** Valuable tool for sharing information and collaboration. Sites include NRR Leadership Team; International Activities; IRRS, GoToMeetings, Commission Briefings and more!
- **Administrative Plant Visits:** Site visits for Administrative staff provide a hands-on experience that allows staff to understand the functions and daily operations at a nuclear facility.

Community Experts

- **Expertise Exchange:** Pairs individuals having high-level expertise with other individuals having less expertise in the same discipline to enhance their skills and knowledge.
- **Communities of Practice:** Several CoPs developed to share information and knowledge on topics such as B.5.b Inspections, Reactor Containment Issues, Appendix J, and more!
- **NRR Lunch 'n Learns:** Bi-monthly bag lunch sessions led by NRR's Executive Management Team. Topics of discussion have included, working with the Commission and EDO's staff, interactions with Congress and international counterparts, and Browns Ferry Fire Protection.
- **DSS Neutronics Seminars:** A seminar series to bridge the gap between Neutronics theory learned in university and the application of Neutronics in regard to regulating nuclear power plants. Seminars are being filmed and DVDs are being maintained.

NRR's Knowledge Management Website:
<http://nrr10.nrc.gov/nrr-office/seek/index.cfm>

Safety Culture

Questioning Attitude



Safety Culture

