

# Training Course on Preparation, Review, and Assessment of Safety Documents for Research Reactors

**3-7 December 2012**













**IAEA-Argonne  
Training Course on  
Preparation, Review, and Assessment of Safety Documents for Research Reactors**



**Tom Ewing**  
**Associate Division Director**

onne National Laboratory  
for Orientation

Training Group  
Environment, Safety, and Quality Assurance (ESQA)



**Thomas Kekelik**

6:00 Lecture on...  
6:15 opening of...  
6:30 History of...  
in the field



**Hassan Abou Yehia**



**L. Walter Deitrich**





E20    Economic principles  
E21    Theory of firm and  
       market  
E22    Theory of... market  
       in the future

**Jack Ramsey**



**William "Duke" Kennedy**





# U.S. Nuclear Regulatory Commission

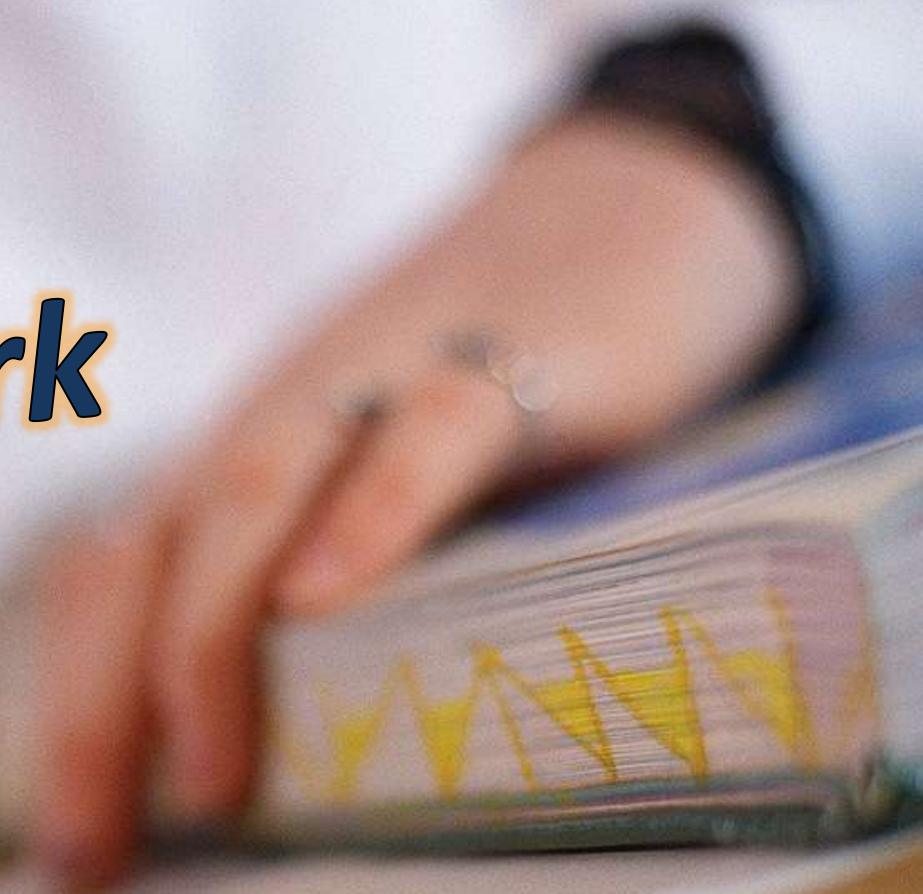








***Participants  
and Staff  
Hard At Work***







nd Chicago Pile-4

Chicago Pile-4, a heavy water reactor designed by Enrico Fermi and his team, began its first full-scale operation on May 15, 1944. Originally designed as a research reactor, CP-4 was converted to a power reactor in 1954. It produced electricity through the shielding to measure the reactor's power, or to obtain a neutron flux. The reactor was shut down in 1954 due to a reactor accident in 1954. The reactor was decommissioned in 1969. The reactor was the first reactor in the country.

### Chicago Pile-4

Originally designated as CP-3, and nicknamed "Sarge" by the staff, CP-4 was the first reactor to be used for the production of plutonium. It was converted to a power reactor in 1954. The reactor was decommissioned in 1969. The reactor was the first reactor in the country.

**Approval Methodology for Research Reactors Safety Documents**

Internal controls: the safety committee of the facility ensure that the technical specifications are well supported. This include:

- Review approval experiments and tests which are significant for the safety, changes to the technical specifications and proposed changes to the operating procedures.
- Program of periodic tests.
- Program of preventive maintenance.
- The incident reports and analysis (see annex report).

External controls: the Directorate of Nuclear Safety (DSN) apply independent control for the safe operation of the reactor. It will conduct inspections as appropriate to safety compliance.

Source: Content on Regulatory Review & Implementation of Safety Documents  
Author: [Name] [Date]  
[Address] [City] [Country]

Approval Methodology for Research Reactors Safety Documents







principles  
of heat transfer  
of fluids







Protecting People and the Environment

## LICENSE RENEWAL REVIEWS OF U.S. RESEARCH REACTORS

William E. Kennedy, Project Manager  
Research and Test Reactor Licensing Branch  
U.S. Nuclear Regulatory Commission







**U.S. NRC**  
U.S. Nuclear Regulatory Commission  
*Protecting People and the Environment*

**LICENSE RENEWAL REVIEWS  
OF U.S. RESEARCH REACTORS**

William B. Kennedy, Project Manager  
Research and Test Reactor Licensing Branch  
Nuclear Regulatory Commission

Man in dark sweater and glasses, holding a yellow folder.

Man in plaid shirt, seated in the audience.

Man in grey suit, seated in the audience.

Documents for research reactors:

- Safety documents should reflect the actual conditions of the research reactor facility.*
- Safety documents should be updated regularly to reflect modifications of the reactor structures, systems and components, including the installation of new experimental devices.*
- The relevance and hierarchy of the safety documents are normally linked to the different phases of the research reactor lifetimes.*



USNRC

Current Facilities - Nuclear Power Plants









*Coffee Break*

















# *Participants Receive Certificates*





# Steven Lynch

## Observer: U.S. NRC







# Oswaldo Font

## Observer: U.S. NRC









**Anggoro SEPTILARSO**  
**INDONESIA**





NO FOOD  
OR DRINKS  
ALLOWED IN  
AUDITORIUM



**Leila MEKIDECHE**  
**ALGERIA**









**Kamel ZENIKHRI**  
**ALGERIA**









**Mark Alan TURNER**  
**AUSTRALIA**







**Daniel Artur Pinheiro PALMA**  
**BRAZIL**









**Daniel Agyarko SIKA-BOAFO**  
**GHANA**









**Hussein Al-Sadek WASHEK**  
**LIBYA**







**Abdelmajid CAOUI**  
**MOROCCO**









**Michal Jerzy DOROSZ**  
**POLAND**









**Tomaz NEMEC**  
**SLOVENIA**







**Ismail Sercan OZER**  
**TURKEY**







A celebratory graphic featuring several white-frosted cupcakes with colorful sprinkles and a pink flower-shaped decoration. The cupcakes are arranged around a central white rectangular area. This area is framed by a gold star garland and a gold ribbon. The background of the entire image is a light purple and white patterned fabric.

**Celebrating  
a  
Job Well Done**







EXIT >

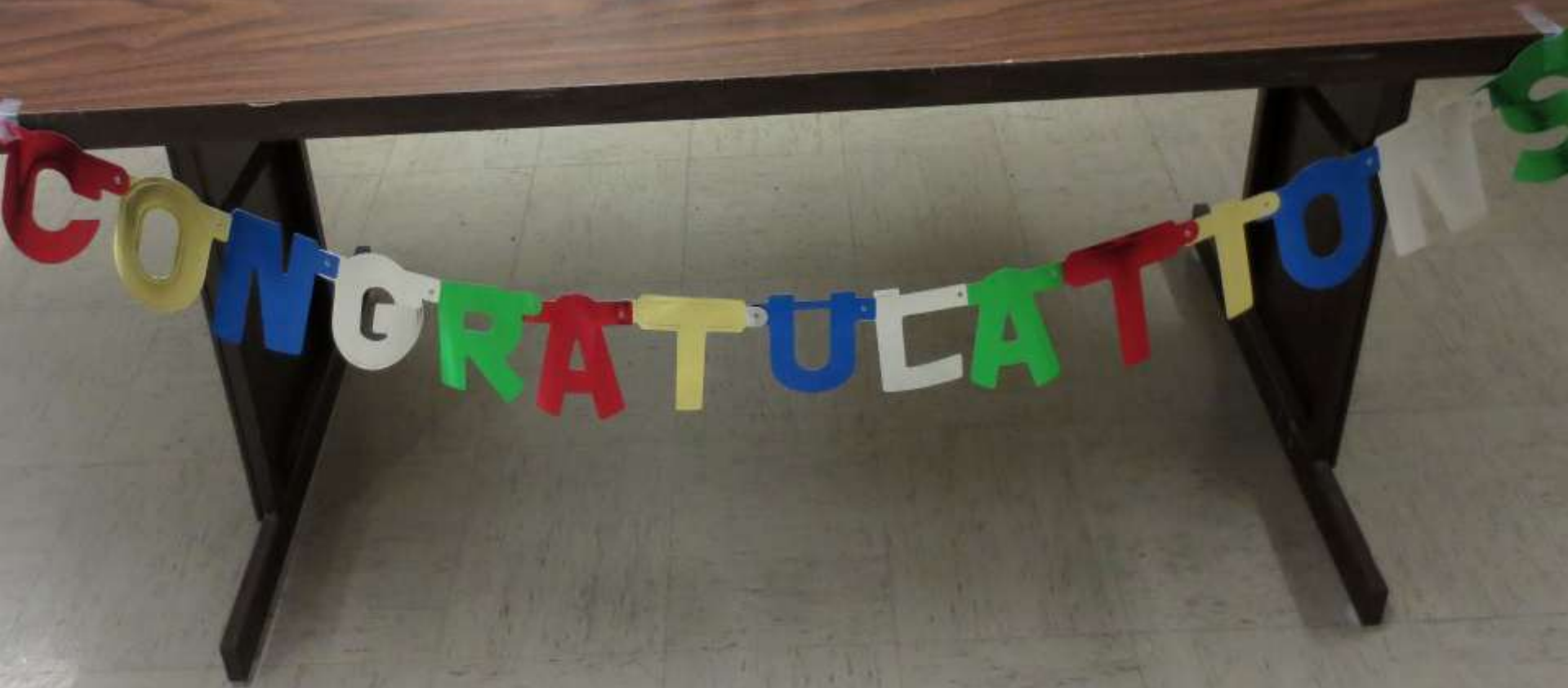




















**Share the Knowledge**