INTERNATIONAL ATOMIC ENERGY AGENCY

TECHNICAL CO-OPERATION DEPARTMENT

PROJECT RLA 4/021
Cracking and Structural Integrity of Components in Light Water Reactors

PROSPECTUS FOR A REGIONAL WORKSHOP

Regional Workshop on Detection, Research, Management and Monitoring of Ageing Factors in Npp

9- 12 December 2008

Commission Nacional de Energia Atomica (CAEA),Buenos Aires, Argentina

Regional Workshop on Detection, Research, Management and Monitoring of Ageing Factors in Nuclear Power Plant

TITLE	Regional Workshop on Detection, Research, Management and Monitoring of Ageing Factors in Nuclear Power Plant
PROJECT NUMBER AND TITLE:	RLA/4/021 Cracking and Structural Integrity of Components in Light Water Reactors
PLACE	Comision Nacional de Energia Atomica (CNEA), Avenida del Libertador 8250, C1429 BNP Buenos Aires, Argentina,
DATE	December 9- 12 2008 (4 days)
DEADLINE FOR NOMINATIONS	October 17 2008
ORGANISERS	CNEA at Buenos Aires
COURSE DIRECTOR	Course Technical Director : Mr. Arturo Burkart, CNEA IAEA Implementing Officer: Mr. Ki Sig Kang
LANGUAGE	The workshop will be held in English.
PARTICIPATION	A workshop is open to 25 participants. This workshop is designed for staff of utilities and regulatory authorities and NPP's/headquarters organisations etc. from Argentina, Brazil and Mexico.
PURPOSE OF COURSE	In the early 1980s, several plants experienced steam leakage due to piping erosion/corrosion. A pipe rupture accident at the USA Surry NPP in 1986 prompted utilities to work toward the development of a guideline for the management of pipe wall thinning.

Many utilities have started the analysis of pipe wall thinning phenomenon using the available large amount of measurement data from operating plants. The evaluation covered a wide variety of data pertaining not only to two-phase flows, but also to single phase, such as feedwater and steam systems. The following topics are examples to be presented and discussed in the workshop:

1. ***Basic Knowledge on equipment degradation and ageing focusing on Erosion and corrosion***
   - Overview of world material degradation issues of NPPs, focusing on pipe wall thinning and rupture;
   - Main Degradation Mechanisms in Water Cooled Reactor Components : Erosion and Corrosion, Flow accelerated corrosion, EAC, Fatigue, Stress Corrosion Cracking
   - Pipe rupture mechanism
   - Mechanical, thermal and corrosion fatigue;

2. ***R&D activities on equipment degradation and ageing***
   - Overview of R&D in the area of material degradation
   - Specific R&D activities and results done in Germany, Korea and USA
   - Behavior and mechanism of pipe wall thinning and rupture;
   - Inspection and monitoring of pipe wall thinning and rupture;
   - Fatigue monitoring system.
   - Determination of corrosion-assisted stress crack growth rate

3. ***Water chemical control***

- Impact of water chemistry upon primary circuit component integrity
- Steam Generator Reliability and Integrity
- Water Chemistry Diagnosis System
- Decontamination of primary systems and components

4. ***Application tool or approaches for diagnostics and prognostics on equipment degradation and ageing in Npps***

- Condition based maintenance,
- Risk based maintenance
- Diagnostics and Prognostics
- Impact on Probabilistic Risk Assessment
- Advanced Diagnostics/Prognostics – Technical Challenges

5. ***Feedback of results concerning successes of component management***.

PARTICIPANTS QUALIFICATIONS

Candidates should be staff members of nuclear safety regulatory authorities or staff of operational NPPs and technical support organizations for plant life management activities.

NATURE OF THE COURSE

The workshop will consist of presentation and discussion where each participant will present his national utility or NPP experiences and approach during this course.

A significant contribution to the course implementation will be provided by the invited experts and international experts who will present international experiences with plant life management programmes.

OUTPUT

- Workshop technical proceedings prepared by a CD-ROM

OUTCOME:

- Increased the technical competence for applying plant life management for long term operation,
- Identification of the main technical and regulatory issues through exchanging information, discussion

RELEVANT IAEA PUBLICATIONS

- TECDOC-928 : Good practice for cost effective maintenance of nuclear power plant
- TECDOC-1309 : Cost drivers for the assessment of nuclear power plant life extension
- TECDOC-1503: Nuclear Power Plant Life Management Processes: Guidelines and Practices for Heavy Water Reactors
- TRS-448: Principles and Guidelines on Plant Life Management of Light water Reactor
- Technical proceedings on material degradation and related managerial issues at nuclear power plants, ISBN 92-0-107306-2
- 2nd international symposium on Plant Life Management technical proceedings