

# IAEA's Strategy to Build International Coalition for D&ER Programs

## CIDER Project: Overview and Objectives

Horst Monken-Fernandes  
&  
Patrick O'Sullivan

International Atomic Energy Agency

16<sup>th</sup> March 2015

Waste Management Symposium – 2015  
Phoenix-USA



**IAEA**

International Atomic Energy Agency

# Presentation Summary

- Background
- Project objectives and organization
- CIDER Phase I - Survey and Baseline Report (Part I and Part II)
- Conclusions
- CIDER Phase II
- International D&ER Conference – May/2016

# Background - Side Event to 56<sup>th</sup> IAEA General Conference on 'Constraints to Implementing D&ER programmes' (1/6)

## □ Aim

- To understand why progress with D&D and ER in many countries is slow or negligible
- How the situation can be improved?
- How the IAEA can contribute?

## □ Panellists:

- METI, US DOE, UK NDA, EBRD and Ukraine Ministry of Energy

## International Decommissioning Network (IDN)

Formed by IAEA in 2007, the IDN promotes safe and efficient practices in the execution of decommissioning programmes through:

- Sharing of experience and lessons learned.
- Facilitating development of relevant skills.
- Exchanging information on decommissioning.
- Bringing together relevant initiatives inside and outside the IAEA to enhance cooperation and coordination.

## Environmental Management and Remediation Network (ENVIRONET)

ENVIRONET was established to increase effectiveness and efficiency in the sharing of international experience on good practices for remediation of radiologically contaminated sites. ENVIRONET activities include:

- Provision of events and opportunities for sharing relevant expertise and skills.
- Supporting participants through on-site education and training.
- Promoting the use of fellowships, information exchange, coaching and mentoring, on both organizational and individual levels for the transfer of knowledge and experience.

## Side Event to the IAEA General Conference 2012

Addressing the constraints  
to implementing  
decommissioning and  
environmental  
remediation in  
IAEA Member States



September 19, 2012  
from 13:30-15:00  
Room M4

Sponsored by UK Trade  
and Investment - UKTI



**IAEA**  
International Atomic Energy Agency  
*Atoms for Peace*

NUCLEAR SCIENCE  
AND TECHNOLOGY

nowledge Ma



ledge  
em  
to archive  
lear inform  
etena  
ledge



HE Ms Susan Jane Le Jeune  
D'Allegreshecque

Ms Elena Molis  
SH WTS

Ms Anna Clark  
UK



IAEA

## Background - Side Event to 56th IAEA General Conference on 'Constraints to Implementing D&ER programmes' (4/6)

- No large funds have been accumulated for D&ER projects - work generally funded from federal budget
- High cost for transportation and storage of radioactive waste
- In many cases, no facilities are available for the disposal of wastes
- Most shutdown nuclear facilities store/contain nuclear materials and/or spent fuels to be removed for centralized storage or reprocessing
- No clear legislation and financial basis exists for large-scale D&ER projects

# Background - Side Event to 56th IAEA General Conference on 'Constraints to Implementing D&ER programmes' (5/6)

- ❑ Fundamental Requirements:
  - ❑ Adequate legal and regulatory framework
  - ❑ Adequate funding scheme
  - ❑ Access to appropriate technologies and availability of trained personnel
  
- ❑ Significant Constraints
  - ❑ Funding Schemes
  - ❑ National policy and institutional infrastructure for liability and project management
  - ❑ Waste disposal routes and associated transportation system

# Background - Side Event to 56th IAEA General Conference on 'Constraints to Implementing D&ER programmes' (6/6)

## □ Conclusion:

- Much remains to be done in terms of cleanup legacies from the early development of nuclear energy
- Some progress in technologically advanced countries have been observed, but many countries are facing formidable and institutional challenges
- Additional efforts needed to establish mechanisms to study international best practices in a systematic way, involving the IAEA and other international organisations



## CIDER Project objectives and organization (1/3)

- **Objective:** to improve current levels of performance on decommissioning and environmental remediation projects, by:
  - **Raising awareness at a policy level** and promote greater cooperation amongst Member States dealing with disused facilities and sites;
  - Developing a **baseline report** for use by policy makers that provides a global overview of liabilities, discusses constraints and provides recommendations on how these may be overcome (Phase 1); and
  - Proposing **specific actions** (at national, regional or international levels) to address constraints to progress

## CIDER Project objectives and organization (2/3)

- **Method of Working:** Three Working Groups on different aspects (institutional framework; technology, social/stakeholder issues), steered by a Coordinating Working Group
- **Source Information:** Data will represent the best information available to the Working Groups, together with data collected by means of a pre-project survey sent to Member States.
- **Timeframe:**
  - Phase 1 : 2013-2015
  - Phase 2 : International Coalition for D&ER Programs (proposal)

# CIDER Project objectives and organization (3/3)

## Coordinating Working Group (CWG)

Chair/Vice-Chair Christine Gelles (US)  
Evgeny Kudryavtsev (Russian Federation)

Scientific Secretaries  
Horst Monken Fernandes  
Patrick O'Sullivan

International organisations:  
Pierre Kockerols (EC-JRC),  
Mike Thurmann (UNDP),  
Gunther Grabbia (EBRD)

WG1: Policy, regulatory and financial framework

Reno Alamysah (Indonesia)  
Steve Hardy (UK)

WG2: Technology and infrastructure

Alexandre Oliveira (Brazil)  
Sarah Roberts (US)

WG3: Social and stakeholder issues

Katarina Konstantinova (Ukraine)  
Sebastian Schneider (Germany)

# CIDER Phase I – Survey to identify main common barriers for D&ER

- ❑ **Finance**

- ❑ Lack of infrastructure for waste management

- ❑ **Lack of technology**

- ❑ Lack of regulatory framework

- ❑ **Lack of national policy**

- ❑ Lack of qualified personnel

- ❑ **Stakeholder opinion / resistance**

- ❑ Uncertainty over the end state (environmental remediation)

# CIDER Phase I - Baseline Report – Part I



## CONTENTS

EXECUTIVE SUMMARY .....	1
1. INTRODUCTION .....	3
1.1. Background .....	3
1.2. Overview of national and global liabilities .....	5
1.3. Impact of not addressing liabilities .....	7
1.4. Structure of this report .....	7
2. OVERVIEW OF CIDER PROJECT .....	8
2.1. Origin of CIDER project .....	8
2.2. Summary of CIDER survey .....	9
2.3. Scope of CIDER project .....	9
3. BASIS FOR UNDERTAKING DECOMMISSIONING AND REMEDIATION PROJECTS ..	10
3.1. Political/legal responsibility .....	10
3.2. Ethical/social principles .....	11
3.3. Economic benefit .....	12
3.4. Business/industry perspective .....	12
4. OVERVIEW OF CONSTRAINTS THAT POSE BARRIERS TO DECOMMISSIONING AND REMEDIATION PROJECTS .....	13
4.1. National policy and legal & regulatory framework .....	14
4.2. Finance .....	15
4.3. Technology and infrastructure constrains .....	15
4.4. Stakeholder and political changes .....	16
5. STRATEGIES TO OVERCOME BARRIERS AND PROMOTE DECOMMISSIONING AND ENVIRONMENTAL REMEDIATION .....	16
5.1. Clear identification of roles .....	16
5.2. Adopting an affordable and graded approach .....	18
5.3. Risk-based prioritization .....	19
5.4. Funding sources .....	21
5.5. Lifecycle planning .....	24
5.6. D&ER project management and organizational culture change .....	24
5.7. Value of independent review .....	26
5.8. Communication and stakeholder engagement .....	26
5.9. Engagement with political representatives .....	26
6. CONCLUSIONS .....	27

# CIDER Phase I – Baseline Report – Part 2

- I. Introduction
- II. Global Overview of D&ER Liabilities
- III. Policy and Regulatory Framework
- IV. Funding
- V. Technology and Infrastructure
- VI. Stakeholder Engagement
- VII. Opportunities for Collaboration

# Conclusions

- Important Considerations:
  - Institutional arrangements for liability and project management – need to ensure efficient use of scarce national resources
  - Waste disposal routes – need for integrated approaches to waste management
  - Technical expertise is concentrated in a small number of countries – need to create an environment that more easily allows funding, technology and expertise to be transferred between countries

# Conclusions

- ❑ Public confidence in the nuclear industry cannot be taken for granted; need to work continuously to improve its structures and working arrangements
- ❑ Key requirement: an appropriate legal and institutional framework including funding systems
- ❑ Arrangements for capturing and sharing experience from ongoing D&ER projects are of crucial importance (role of the IAEA-RWM Networks e.g. ENVIRONET and IDN)
- ❑ Need to create an environment where technology and expertise developed in advanced programmes may more easily be applied in others



# CIDER – Phase II

- Establishment of mechanisms to disseminate and assist on the implementation of international good practices in a systemic way
- Construction of new institutional arrangements, at international level, encompassing a multi-donor framework

# IAEA D&ER International Conference 2016: Objectives and Topics

- **Share and review challenges, achievements and lessons learned** from D&ER programmes implemented during the past decade
- **Raise awareness** amongst national authorities and in the international community, including funding organisations, of remaining and anticipated future liabilities,
- **Provide recommendations on the strategies and approaches** that can enable and enhance safe, secure and cost effective implementation of national and international programmes to address these liabilities during the next 1-2 decades.
- Establishing national P&S to enable and enhance D&ER
- Regulatory frameworks
- Decision-making process: social and stakeholder involvement during the lifecycle of D&ER projects
- Technical and technological aspects
- Project management and supply chain considerations
- Optimizing waste and materials management
- International Cooperation.

