Stakeholder Involvement and Communication in Environmental Remediation and Decommissioning – A Driving Force for Enabling a Successful Implementation

Horst Monken-Fernandes Waste Technology Section NEFW

RICOMET 2015 Risk perception, communication and ethics of exposures to ionising radiation





Co-authors

- Izumo, A, O'Sullivan, P., Lyamzina, Y., Bruhn, G., Schneider, S., Konstantinova, K., Martell, M., Perko, T., Zeleznik, N.
 - International Atomic Energy Agency IAEA, Austria
 - Global research for safety GRS, Germany
 - ENCO European Commission Instrument for Nuclear Safety Cooperation in Ukraine Joint Support Office Ukraine
 - Merience Strategic Thinking for Communicating Risk
 - Belgian Nuclear Research Centre SCK-CEN, Belgium
 - Regional Environmental Centre REC, Slovenia



The IAEA

 Established in 1957 as the world's "Atoms for Peace" organization within the United Nations family



- Independent, intergovernmental, science and technology based
- Global focal point for nuclear cooperation
- 167 Member States
- 2,300 secretariat staff, based mostly in Vienna, Austria



The IAEA Statute

Functions – Promote peaceful uses of atomic energy

- 1. Promote research, development, practical application
- 2. Exchange of scientific and technical information
- 3. Exchange and training of scientists and experts
- 4. Establish and administer safeguards
- 5. Develop safety standards and provide for their application



About Environmental Remediation

• A starting point:

 Cultural backgrounds are surely different worldwide but perception about radiation seems to be very similar



Some Considerations about Remediation

→ providing a remedy?

 \rightarrow measures to:

remove 'contamination' from land areas?, or

reduce radiation exposure?



Confusing term: 'Contamination'

- from Latin contaminat-, contaminare, 'make impure',
 from tangere 'to touch'
- Religious understanding (e.g., no-kosher food)
- Experts' denotation: presence of radioactivity
- Public's connotation: radiation dangerousness



Facts or purely public perception based on incomplete information?

 How does available information affect the views of people to nuclear energy related projects (e.g. uranium mining,

NPP's, Research Reactors, etc?

How public perception will affect environmental

remediation and decommissioning?



Uranium mill tailings in Kyrgyzstan



Trying to Address the Problem

Improving Risk Communication Stakeholder Involvement







Network of Environmental Management and Remediation

ENVIRONET



"ENVIRONET": objectives

Organise an expanded range of training and demonstration events

disseminating proven methodologies, good practices and state-of-the

art technologies;

Facilitate information exchange and experience sharing amongst

organizations with advanced programmes;

Create a forum in which expert's advice and technical guidance





ENVIRONET in CONNECT – A Platform for:

- sharing information and lessons learned
- transferring knowledge
- comparing approaches
 implemented by different
 organisations
- maintaining sustainable
 relationships amongst



CONNECT MEMBERS CO	ULS DISPONET ENVIRONET IDN MSN NKM NNE URF Learning CONNECT Bugs and F	eatures Workshops NC Space				
ENVIRONET >						
Connections	Network of Environmental Management and Remediation (ENVIRONET)				
User Profiles						
Events	countries and organizations may contribute to better conditions for implementing environmental remediation projects. To inspire countries to share their knowledge and experience as well as to	for any questions or feedback regarding this network, click here to e-mail the network				
ENVIRONET Calendar	promote and facilitate collaboration, the Network of Environmental Management and Remediation - Owners.					
Past Events	ENVIRONET was created.					
Future Events	The basis for the network has been built over the past decade as a number of remediation methods have been	ENVIRONET Announcements				
ENVIRONET Annual Forum 2013	ceveroped wondwide to deal with environmental icean-up of radiologically contaminated sites. However, the methods vary in terms of sophistication and costs and must be selected on a case-by-case basis. Hence planning is one of the most important phases of the environmental management and remediation process.	IN-SITU working group created within ENVIRONET				
ER Resources	In support of better implementation of remediation actions as well as in support of public and environmental protection	Intl Symposium Uranium Raw Material for the Nuclear Fuel Cycle				
Multimedia	and site monitoring, the purpose of ENVIRONET is to: Multimedia					
eLearning	 Coordinate support to organizations or Member States by making available the relevant skills, knowledge, managerial approaches and expertise, related to environmental management and remediation; 					
ER Fundamentals	 Offer a broad and diversified range of training and demonstration activities with a regional or thematic focus providing hands-on, user-oriented experience and disseminating proven technologies; 					
	Facilitate sharing and exchanging knowledge and experience amongst organizations with advanced					
Discussions	environmental management and remediation programmes;					
Forum	 Collect and share the good remediation practices by identifying and treating improper past operations, thus assuring the longer term knowledge; and 					
	 Provide a forum in which experts' advice and technical guidance may be provided. 					
Thematic Areas						
ENVIRONET Document						

Workspace Environmental Remediation

054105

MONKEN-FERNANDES, Horst + EN +

Projects of Environet



INTRODUCTION TO ENVIRONMENTAL REMEDIATION

MODULE 3: ENVIRONMENTAL REMEDIATION PROJECT IMPLEMENTATION

IN PARTNERSHIP WITH

TRICORD Argonne

Training Material Consists of Five Modules:

- 1. Introduction to ER;
- 2. The ER Planning Process;
- 3. ER Implementation;
- 4. Post-Remediation Management; and



- E-learning material in cooperation with the Argonne National Laboratory (USA).
- Sponsored by the US Department of State and EPPUNE (Japanese Initiative on Expanded Programme on Public Understanding of Nuclear Energy)
- Duration 6 hours
- Target Audience: Public or Stakeholder Groups, Regulators,Educational Institutions, Junior Engineers and Scientists,Executive Managers and Funding Entities
- Already uploaded in IAEA CONNECT Platform

Removing and Disposing of Contamination



Contaminated soils can be **excavated and disposed** of elsewhere. Buried contaminated waste such as drums and contaminated objects can also be unearthed and removed from a site.

This option presumes an acceptable disposition point - usually a low level radioactive waste disposal facility designed to safely receive and store contaminated material for perhaps an indefinite period of time.

Contaminated groundwater can be pumped and filtered to remove contamination and the resulting waste stream disposed of elsewhere. Disposal requirements for treated water will depend upon the degree to which the radionuclides can be removed.

Projects of Environet in CONNECT

EA

- Environmental Remediation Wiki Homepage
 - 1. This wiki is intended to allow easy collaboration among experts on

environmental remediation of radioactively-contaminated sites

Recent Articles					
Name	Modified	Rating (0-5)	Created By	Modified By	Content Type
West Valley PTW Case History	12/02/2014 08:58	☆☆☆☆☆ ☆	John Morse	Marko Kokol	ENVIRONET Case Study
Windscale Trenches Case Study	12/02/2014 08:59	***	John Morse	Marko Kokol	ENVIRONET Case Study
Top soil and turf removal (mechanical)	12/02/2014 11:34	చ చ చ చ చ	Valerii Kashparov	Marko Kokol	ENVIRONET Technology Profile
Alternative drinking water supply	07/07/2014 12:07	ಭ ಭ ಭ ಭ ಭ	Andressa Santos Junger	Andressa Santos Junger	ENVIRONET Technology Profile
Remediation of WISMUT uranium mining waste dumps	12/02/2014 08:58	***	Andressa Santos Junger	Marko Kokol	ENVIRONET Case Study
Chernobyl Agricultural Case Study	12/02/2014 11:29	☆ ☆ ☆ ☆ ☆	Valerii Kashparov	Marko Kokol	ENVIRONET Case Study
Permeable Treatment Wall	12/02/2014 11:41	ದ ದ ದ ದ ದ	John Morse	Marko Kokol	ENVIRONET Technology Profile
Goiania Accident	12/02/2014 08:57	****	Elaine Rochedo	Marko Kokol	ENVIRONET Case Study
Combination of Field and Lab Measurements at WISMUT	12/02/2014 11:07	****	Peter Schmidt	Marko Kokol	ENVIRONET Case Study

The CIDER Project

- 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 (3/3)

	Coordinating Working Group		
	Chair/Vice-Chair Christine Gelles (US) Evgeny Kudryavtsev (Russian Federation)		
Scientific Secretaries Horst Monken Fernandes Patrick C'Sullivan		International organisations: Pierre Kockerols (EC-JRC), Mike Thurmann (UNDP), Gunther Grabbia (EBRD)	
WG1: Policy, regulatory and financial framework	WG2: Technology and infrastructure	WG3: Social and stakeholder issues	
Reno Alamysah (Indonesia) Steve Hardy (UK)	Alexandre Oliveira (Brazil) Sarah Roberts (US)	Katarina Konstantinova (Ukraine) Sebastian Schneider (Germany)	

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

- **G** 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)



The Baseline Report

- Executive Summary
- 1. <u>Introduction</u>
- 2. Overarching principles and constraints related to programme implementation
- 3. Technological Issues
- 4. Resource constraints
- 5. Societal issues
- 6. Summary
- 7. General conclusions
- 8. References



Baseline Report - Societal issues

- Societal constraints and approaches to overcome them
 - 1. Limited technical knowledge and understanding of the issues and process
 - 2. <u>Groups and individuals opposed to the programme</u>
 - 3. <u>Concerns related to the waste disposal on site</u>
 - 4. Different demands and concerns between stakeholders
 - 5. Limited budget to cover stakeholders demands
 - 6. <u>Negative experience with the D&ER programmes</u>
 - 7. Lack of support by the governmental authorities to implement D&ER
 - 8. <u>Changing the administrative procedure and legal framework related to D&ER programmes</u>
 - 9. Lack of trust between stakeholders
 - 10. Lack of recognition of links between environmental, economic and social concerns



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1. Constraints that hinder progress in stakeholder involvement in D&ER programmes

Proposal for CIDER Phase 2

Sub-project:

'Developing and implementing a communication and stakeholder involvement strategy in the framework of D&ER programmes'



Objectives - Phase II

- Pilot study to implement a communication and stakeholder involvement strategy in:
 - 1. One site focusing on environmental remediation
 - 2. One site focusing on decommissioning
 - 3. Estimated duration: 2 3 years
- Identify the key stakeholders for the given project;
- Identify the most relevant societal constraints for each site;
- Develop an effective communication and stakeholder involvement strategy especially designed for the selected site(s) with a view to overcome the identified constraints;
- Implement the strategy and assess its effectiveness;
- Develop a lessons learned document reporting on the effectiveness of the implemented strategy; analyzing any deviations between the initial 'theoretical' strategy and the implemented 'in reality'

and proposing further adjustments (if necessary).



Summary

- The IAEA provides coordination with the hosting organizations of the project and monitors progress, involving IAEA staff and IAEA experts.
- Commitment from Member States and relevant authorities is required.
- Problem holders at candidate sites will need to undertake several actions and assess effectiveness of the communication and stakeholder involvement plan on a regular basis, with IAEA support.
- Social sciences experts at national level and the local community need to be involved.
- Depending on the project duration (estimated 2- 3 years), at least 2 expert meetings and one visit to the site are foreseen.
- Output: a lessons learned report highlighting how communication and stakeholder involvement is applied *in practice* in D/ER projects to overcome societal constraints.



