The International Decommissioning Network

The IDN at 1: An Overview and Status Report

Paul. J. C. DINNER, Michele LARAIA
Jan-Marie POTIER
Waste Technology Section – IAEA Department of Nuclear Energy

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International Atomic Energy Agency

IAEA Decommissioning Activities - Goals

- Promote effective regulatory infrastructure and technical competency in performing safe, timely and cost-effective decommissioning

- Promote decommissioning of the several hundred aging power reactors, research reactors, and Fuel Cycle and medical facilities, many in developing Member States.

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IAEA RW Management Programme

Our method of work

NETWORKING IS THE KEY….

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International Decommissioning Network (IDN)

An International Network of "Centres of Excellence"

to promote the sharing of practical decommissioning experience

- **Established in 2007**

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Why develop a Network approach? (1/2)

- Create a forum for
  - ***sharing information and lessons learned***
  - ***transferring knowledge***
  - ***comparing approaches*** valued by all MS
- ***Coordinate support*** to organizations or Member States with less advanced programmes from Member States with more experience;
- Complement existing Agency activities with more ***demonstration projects*** giving practical ***hands-on and user-oriented*** experience

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Why develop a Network approach? (2/2)

- Improve **efficiency / effectiveness** in planning and delivering training – to whom & when needed
- Obtain direct **feedback, advice and guidance** on the IAEA's programmes in radioactive waste management, decommissioning, environmental remediation
- Provide a means to **build and sustain relationships** through the sharing of information and knowledge

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NETWORKS – "Centres of Excellence"

Organizations that possess a record of excellence, a breadth of decommissioning knowledge, facilities suitable for demonstration or training and a willingness to share their experience through the NETWORK, may be identified as **"Members"** and acknowledged as **"Centres of Excellence"** in co-operating with the IAEA

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NETWORKS - Partnership

- ***"Member"*** organizations, who will provide expertise and training capabilities
- Activities/operations centred around a real demonstration project, offer a venue for ***"Participant"*** training and other forms of co-operation, while receiving assistance from ***"Members"***

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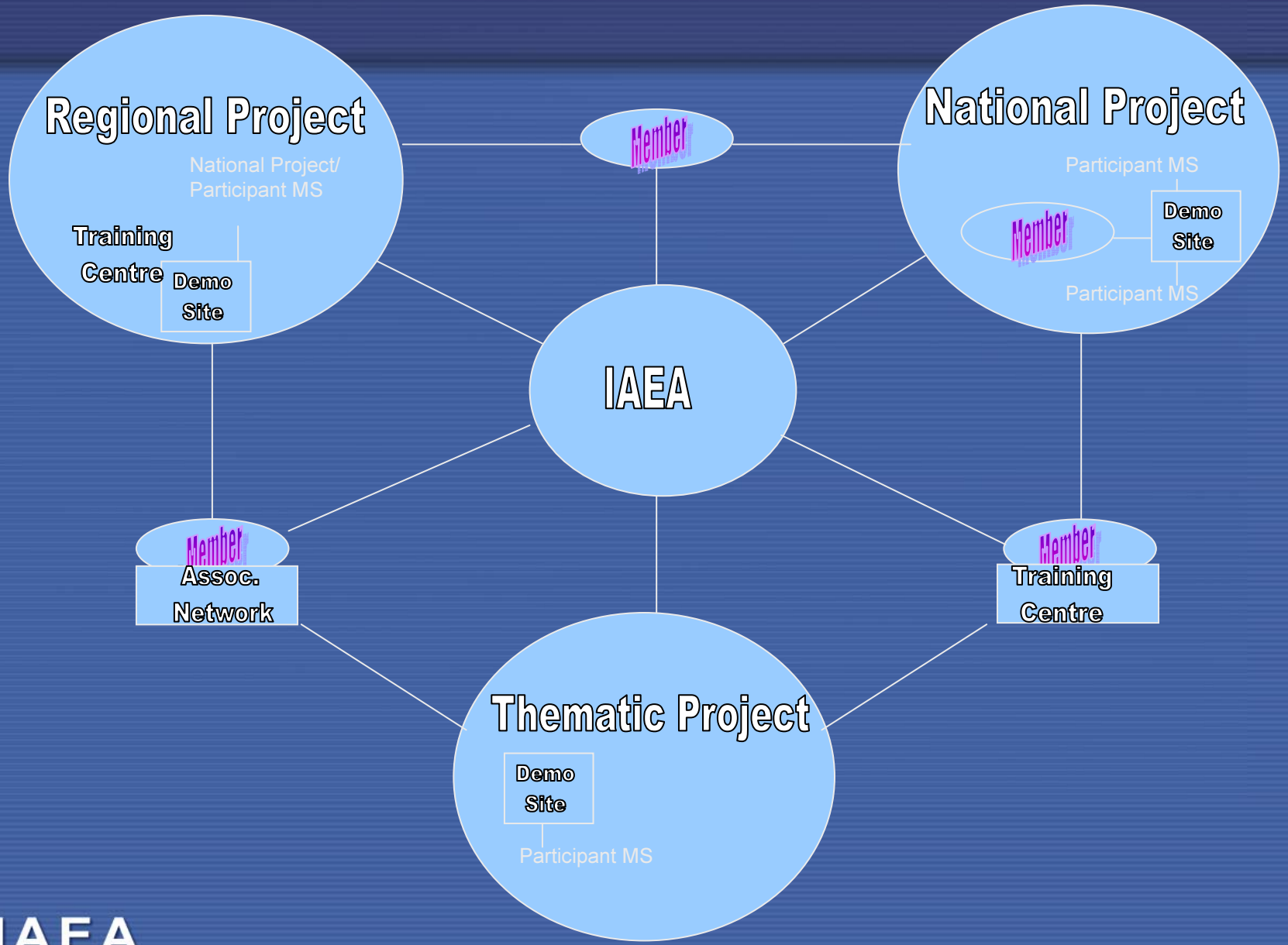
Fig. 1: Typical Relationships Amongst IDN Participants



Centres of Excellence in Co-operation with the IAEA can be expected to:

- Possess a high level of decommissioning knowledge and a commitment to excellence.
- Participate consistently in IDN activities including Technical and Advisory (Steering Group) Meetings
- Host training courses, fellowships or scientific visits by Participants;
- Provide suitably qualified and experienced individuals for Expert Missions to support Participants;
- Provide qualified peers to support the IAEA's efforts on peer reviews;

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Participants Priorities – TM Oct 2007
Demonstrations/training "Top 5" Requested

1. Demonstrations on use of **characterization** techniques and equipment
2. **Decontamination and cutting** techniques and tools
3. Management and **clearance** of decommissioning wastes
4. Sponsor onsite, interactive training on **"Basic Practices** in Decommissioning"
5. **Cost-estimation** for small facilities using simplified methodology

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Decommissioning - Related "Network" Activities

- **R2D2P Workshop on Project Planning, Management and Review, Manila, 15-19 Sept**
  - ✓ Planning
  - ✓ Regulatory and Safety Review
- **FaSa Project Definition meeting, Vienna, 17-21 Nov**
  - ✓ Continuation of the very successful "DESA" project
  - ✓ Scientific secretary - M.hannan@iaea.org
- **Organization and Management in Decommissioning of NPPs. Offered via RER/4/027, RC Karlsruhe, Germany, Nov 17-21**
  - ✓ Project management,
  - ✓ QM systems;

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"IDN" - Achievements in 2008

- Finalize Terms of Reference and set up "Secretariat"
- Formulation of IAEA Project (RER-3005 Extension) to support IDN initiatives in 2009-2011
- Follow-up with potential hosts for workshops and training courses
- Pursue linkages with other decommissioning-related Networks internal and external to the IAEA
- Implement IDN communications programme including Monthly email "Updates", Newsletter articles, Conference presentations
- Experimental Media: Video and Audio Teleconferences

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"IDN" - Achievements in 2008 - Workshops

- **Size Reduction of Components for Decommissioning (Hosted by CEN/SCK Mol, Belgium, Oct 8-10**
  - ✓Decontamination
  - ✓Dismantlement (cutting) of large components
- **Decommissioning Materials Management and Clearance (Hosted by ENRESA, Spain, Oct 13-17)**
  - ✓ Segregation, sampling, characterization
  - ✓ Processing, recycle and reuse
  - ✓Dispositioning

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Workshops MoI and ENRESA
Very effective “Hands on” format

- Presentation by an “engaged” professional
- Video of active work
- Field visit to observe operations
- Personal interaction with simulators, tools in inactive environment
- Recap and “round table” with experts and participants to discuss the experience

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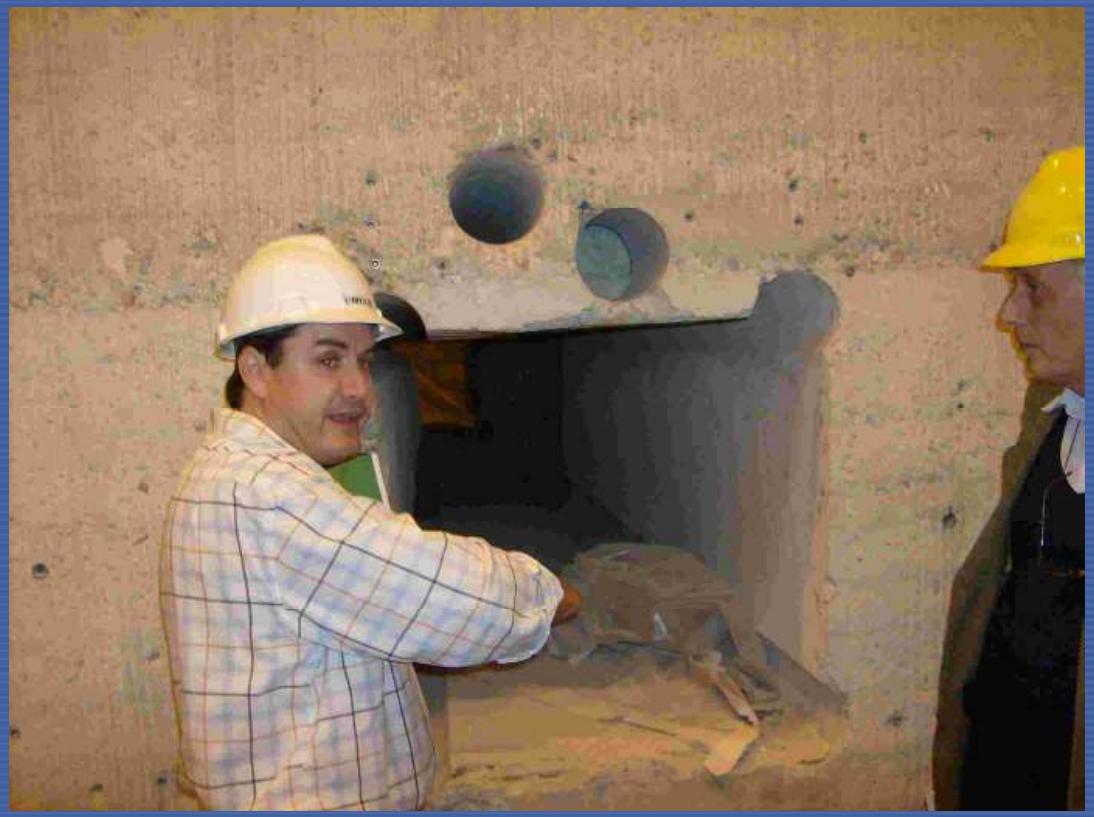
The Workshop sights and sounds

"Manolo" - showing the IDN participants a prime example of a diamond wire saw cut through the bioshield at PIMIC during the ENRESA workshop



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The Workshop sights and sounds

BR3 at SCK-CEN Mol

The characterization, decontamination and dismantlement of the reactor included the challenge of alpha-contamination on the inside of the stack shown here.

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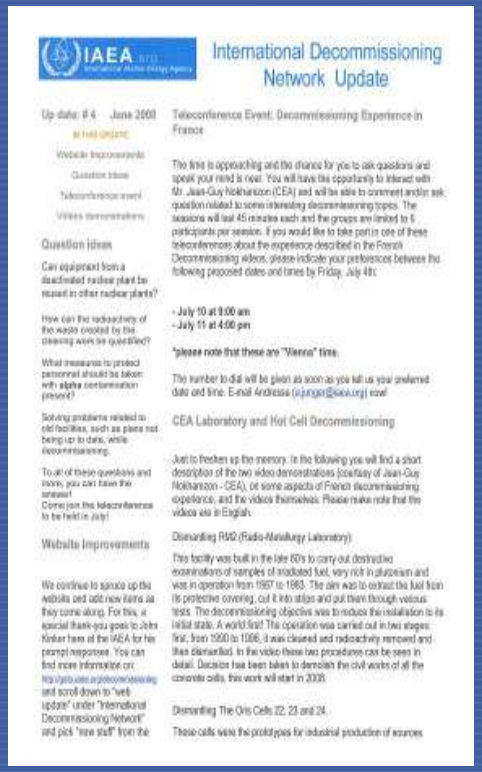
"IDN" - Achievements in 2008 Communications and Experimental Media

Andressa has put out a regular "IDN Update" which serves as a newsletter for the IDN and helped us to organize a simple but effective teleconference around a video illustrating CEA decommissioning.



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International Decommissioning Network Update

Up date: # 4 June 2008

In this UPDATE:

Website Improvements

Question Ideas

Teleconference event

Video demonstrations

Question Ideas

Can equipment from a decommissioned nuclear plant be reused in other nuclear plants?

How can the radioactivity of the waste created by the cleaning work be quantified?

What measures to protect personnel should be taken with alpha contamination present?

Solving problems related to old facilities, such as plans not being up to date, while decommissioning.

To all of these questions and more, you can have the answers!
Come join the teleconference to be held in July!

Website Improvements

We continue to spruce up the website and add new items as they come along. For this, a special thank-you goes to John Kinker here at the IAEA for his prompt responses. You can find more information on:
http://gois.iaea.org/dotcom/aboutidn.jsp
and scroll-down to "web update" under "International Decommissioning Network" and pick "new stuff" from the

Teleconference Event: Decommissioning Experience in France

The time is approaching and the chance for you to ask questions and speak your mind is near. You will have the opportunity to interact with Mr. Jean-Guy Nokhamzon (CEA) and will be able to comment and/or ask question related to some interesting decommissioning topics. The sessions will last 45 minutes each and the groups are limited to 6 participants per session. If you would like to take part in one of these teleconferences about the experience described in the French Decommissioning videos, please indicate your preferences between the following proposed dates and times by Friday, July 4th:

- July 10 at 9:00 am
- July 11 at 4:00 pm

*please note that these are "Vienna" time.

The number to dial will be given as soon as you tell us your preferred date and time. E-mail Andressa (a.junger@iaea.org) now!

CEA Laboratory and Hot Cell Decommissioning

Just to freshen up the memory. In the following you will find a short description of the two video demonstrations (courtesy of Jean-Guy Nokhamzon - CEA), on some aspects of French decommissioning experience, and the videos themselves. Please make note that the videos are in English.

Dismantling RM2 (Radio-Metallurgy Laboratory)

This facility was built in the late 60's to carry-out destructive examinations of samples of irradiated fuel, very rich in plutonium and was in operation from 1967 to 1983. The aim was to extract this fuel from its protective covering, cut it into strips and put them through various tests. The decommissioning objective was to reduce the installation to its initial state. A world first! The operation was carried out in two stages: first, from 1999 to 1006, it was cleaned and radioactivity removed and then dismantled. In the video these two procedures can be seen in detail. Decision has been taken to demolish the civil works of all the concrete cells, this work will start in 2009.

Dismantling The Oris Cells 22, 23 and 24

These cells were the prototypes for industrial production of sources.

Just aside,

SHARING EXPERIENCE

Please feel free to forward the French video demonstration link, to others interested in decommissioning!

PREFERRED DATE / TIME

Please let Andressa know your preferred date&time (mentioned above) for the conference call through the following email: a.junger@iaea.org

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Sincerely,

Paul Dinner,

Scientific Secretary, International Decommissioning Network
The International Atomic Energy Agency

They were built in the mid 60's and remained in use until 1972. They produced Cesium 137 and Strontium 90 sources. One of the challenges shown in this tape is that these cells covered a surface area of some 150m2 on an active production site. They were shut down in 1973 and taken permanently out of service in 1987 and remained in disuse until 1987 when a cleaning campaign was launched to dismantle the effluent storage tanks located under the cells. The team encountered various problems such as finding a high level of radioactivity inside the enclosures which restricted the dismantling operators' access. Another issue addressed in the tape is that the work area, located beside the production site, could not interfere with the work of the staff located nearby during the evacuation of the waste and decontamination of the inside of the enclosures. The dismantling was completed in 1994.

To watch the videos, please go to:
http://www.iaea.org/OurWork/ST/NE/NEFW/info_IDN_announcement.html
(Note: file size approx. 25MB each)

VERSION ANGLAISE

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RER – 3005 Extension: A “Network” Vehicle

The RER 3005 Project on decommissioning planning is being continued into the 2009-2011 period with increased budget to enable participation and events to be organized beyond the traditional “European” Project borders.

Project Design Budget: RER2006024
Events with Non-RER Participants - Base and Additional Budget Requirements

Year	Input	Budget30/5*	Total ++ Funding Req
2009	IDN Workshop & demonstration of concrete cutting for a RR bioshield. Note: potential hos…Australia	$55 000.00	$75 000.00
2009	IDN workshop on simplified costing for decommissioning of RRs and other small facilities…(VUJE)	$40 000.00	$60 000.00
2009	Workshop & demonstration of the application of gamma-camera technology, mapping software…(CIDEN)	$45 000.00	$60 000.00
2009	Scientific Visits and Fellowships	$20 000.00	$30 000.00
	Sub-Total for 2009	$160 000.00	$225 000.00
2010	IDN "basic" training course covering all of the fundamentals of decommissioning at a hig…	$40 000.00	$60 000.00
2010	Workshop on safety assessment….	$40 000.00	$60 000.00
2010	IDN workshop on remote technology for NPP decommissioning….	$40 000.00	$60 000.00
2010	Workshop on materials management and clearance criteria (in Europe)….	$40 000.00	$60 000.00
2010	IDN Workshop & demonstration of advanced cutting technologies. Note: potential host orga…	$45 000.00	$75 000.00
2010	Scientific Visits and Fellowships	$20 000.00	$30 000.00
	Sub-Total for 2010	$225 000.00	$345 000.00
2011	A "basic" training course covering all of the fundamentals of decommissioning at a highe…	$45 000.00	$60 000.00
2011	Group SV to RRs and other small nuclear facilities under active decommissioning in Europ…	$18 240.00	$30 000.00
2011	IDN Workshop & demonstration of advanced cutting technologies. Note: potential host orga… (Japan, held if ~ 50k additional is available)	$0.00	$75 000.00
2011	IDN Workshop & demonstration of the application of gamma-camera technology, mapping soft…	$40 000.00	$60 000.00
2011	Scientific Visits and Fellowships	$20 000.00	$30 000.00
	Sub-Total for 2011	$123 240.00	$255 000.00
	Total Workshop Component of Budget	$508 240.00	$825 000.00
	For Assumed Total Project Budget*	961, 820	$1 270 000.00

Notes:
* Budget 30/05 corresponds to workshop part of TC budget 961k$ for TCEU Proj. Design Sheet 30/5
For Events inside Europe assume 2/3 participants are from Europe,
For Events outside Europe assume 1/3 participants from Europe
++ Revised 30/05 to reflect Workshop in Europe - Typical cost = $60,000 (1 TO, no paid lect.)
Workshop outside Europe Typical cost = $75, 000 (2 TO, one paid lecturer)

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Workshops under Discussion for 2009-2011

- IDN Workshop & demonstration of concrete cutting for a RR bioshield., ANSTO, Australia Q2
- IDN workshop on simplified costing for decommissioning of RRs and other small facilities, Q3/Q4, Location TBD – may be combined with R2D2 wkshop
- Technology for decommissioning, TBD – KfK, Germany combined with R2D2

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Workshops under Discussion for 2009-2011

- IDN "basic" training course covering all of the fundamentals of decommissioning at a level suitable for project managers and planners, ANL, Chicago USA Q1
- Workshop on safety assessment for small facilities (with WES, TBD)
- Workshop & demonstration of the application of gamma-camera technology, mapping software…(EDF-CIDEN), France, Q4

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Workshop under discussion for 2009- 2011

- A "basic" training course covering all of the fundamentals of decommissioning for Project Managers and Planners – INSTN, Marcoule, France...
- IDN Workshop & demonstration of advanced cutting technologies. Note: potential host organization. Japan?
- Decommissioning of small facilities (VUJE, Slovakia)

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Contact Us

- *IAEA Decommissioning web page*
  http://goto.iaea.org/decommissioning
- *IDN Scientific Secretary* p.dinner@iaea.org
- *IDN email "Updates" :* a.junger@iaea.org

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