MINUTES OF THE ERRICCA 2 KICK OFF MEETING

Novotel Hotel, Heathrow, London, UK
25 -26th February 2002

Item		Action
	WELCOME AND HOUSEKEEPING	**CS**
	Chris Scivyer welcomed everybody to the meeting. Attendees were: **Building Research Establishment** Chris Scivyer (CS) Mike Jaggs (MJ) Kim Noonan (KN) **DEFRA** Liam Davey (LD) **NTUA** Marios Anagnostakis (MA) Nick Petropoulos (NP) Simos Simopoulos (SS) Evangelos Hinnis (EH) D J Karangelos (DK) **RISOE** Claus Andersen (CA) **RPII** David Pollard (DA) Jack Madden (JM) **NRPB** Jon Miles (JMiles) **Radon Council** Frederick Fryer (FF) Diane Pead (DP) **Hellenic Cement Research** Charoula Malami (CM) **Icopol Plastic Membranes a/s** Christian Lund (CL) **Remedia Limited** Michael O'Gabhlain (MO) **FANC** Andre Poffijn (AP) **University of Cantabria** Luis Quindos (LQ) **CSN** Jose Luis Martin Matarranz (JM)	

	STUK Hannu Arvela (HA) **Humi Consulting Oy** Ari-Veilkko Kettunen (AK) **BFS** Peter Hamel (PH) **Tracerlab** Horst Kelm (HK) **Swedish Radiation Protection Inst.** Lars Mjones (LM) Ann Louis Soderman (ALS) **Radon Prevent AB** Per Hallberg (PH) **Swiss Federal Office Public Health** Georges Pillar (GP) Georges-Andre Roserens (GR) **ISS** Serena Risica (SR) **ARC Seibersdorf Research** Hannes Stadtmann (HS) **OFI** Phillip Koskarti (PK) **CSTB** Bernard Collignan (BC) **KVI** Emiel Van der Graaf (EVDG) **ENCI** Pieter Lanser (PL) **ITN** Maria de Conceicao Faisca (MCF) **Central Mining Institute** Malgozarta Wysocka (MW) **Czech Tech University** Martin Jiranek (MJ) **Radon vos** Martin Neznel (MN) **University of Veszprem** Janos Somlai (JS) Csaba Nemeth (CN) **Inst of Occupational Safety** Peter Jovanovic (PJ) **Interproject** George Elkan (GE) **HERO** Ildiko Mocsy (IM)	

	INTRODUCTION TO ERRICCA 2	Chris Scivyer BRE
	Chris Scivyer, BRE, UK **See presentation - Appendix 1** CS talked about the work of ERRICCA 1 and how it differs from ERRICCA 2. The Programme of work : A table listing all the topic groups and deliverables was left on a flipchart over the two day meeting for everybody to put their names by the deliverables they wish to become involved in. CS commented that we needed to think about 2nd ERRICCA 2 meeting and the likely date. The NRE conference is too soon to incorporate the ERRICCA 2 meeting. The best time would probably be in October 2002. CS explained that the advance would be paid to each organisation on return from the meeting. He requested that any membership agreements or bank details outstanding needed to be given to KN. National meetings – CS explained that each scientific partner needed to organise a National meeting in each of the three years of the contract. Ideally the first should take place before the next European meeting. CS confirmed that the UK National Radon Forum is to be held on 12th April 2002 and to date 140 people have been invited. As many different types of organisations as possible have been invited. The second National Forum is planned to take place in Devon. EVDG asked about how they should go about setting up their own national Forums. CS said it was up to individual country to organise their meeting how they see they need it. He explained that the UK have involved local authorities, government agencies, builders, equipment manufacturers. CS will feed information from the kick off meeting to the	Bre to authorise payment of advance. All members to ensure membership agreement and bank details given to KN Scientific partners to organise National Meeting

	national forum and hopefully will get some feedback for next ERRICCA 2 meeting. LQ asked about financial support for national forums. CS confirmed that financial support for the meeting is included in the money allocated to partners.	
	EUROPEAN RADON WEBSITE	**Evangelos Hinis NTUA**
	E Hinnis, NTUA, Greece **See Presentation - Appendix 2** EH gave presentation on Work Package 1 and the aims of the website. EH suggested that NTUA had identified a website address - http://radon.nuclear.ntua.gr He also requested opinions on the construction of the website. There were two options: A simple site similar to ERRICCA 1 with less graphical load,which is Netscape and MS explorer compatible or a more advanced site similar to the NRE-VII website, which would be mainly MS explorer compatible and would have full graphical load. CL commented that since objective is to disseminate information to the general public and industry, photos and designs would be useful. Therefore a more advanced website would be better. PH preferred simpler version and asked if we could use two sites. EH replied that they would not like to use two platforms. JMiles pointed out that we need to be compatible with everyone and therefore would favour simpler version. SS commented that we could have two sites with two different addresses. This could work. CA felt this would be complicated. It was agreed that one address should be used, which then splits into two addresses. There will be a public part of the site and an ERRICCA 2 part with protected information. Everybody would have a password to	

	access the ERRICCA 2 site. GP asked what kind of information should be protected. EH confirmed that financial issues and some topic group issues should be protected. CA commented that links are very useful, it could be organised into different groups, i.e. products, nations etc. Could links be associated with text. EH confirmed they could. EVDG asked if the website was more about ERRICCA 2 rather than general radon. CS commented that he would like it to become the principal European radon website but the only problem would be funding after three years. EMVD commented that there are several radon websites already available. CS would want UK websites to be put on as links. EVDG suggested there may be a lot of duplication. CS confirmed that the websites for UK links are Radon Council, NRPB. The aim is to sell radon, not ERRICCA 2. PL expressed concern about the website and organising feedback. EH proposed that NTUA construct a questionnaire to gain feedback. CS proposed action on everybody to give information for website. CS asked if there was a problem with language. We want to disseminate to as many people as possible. GP pointed out that if speaking to general public, they will want to use their own language. There should be links showing different languages on site. PL ENCI felt that graphs etc will avoid some problems. PH asked if there was any possibility for funding for translating? Maybe this should be looked at. SS confirmed that the official language should be English and then include other languages with links. HK felt there should not be too many links – is happy to use English. CL pointed out that local contractors will only want to	NTUA to formulate questionnaire for feedback on website All partners to give feedback on information for website CS to contact European Commission to see if they could translate key documents or if there is funding available for translations

	see details in their own language. We need to see if we can get funding. CS proposed a vote that the main platform should be in English. This was agreed. JMiles proposed that there should be an obligation on everybody to prepare a page in their own language with links to resources in their own language. This was agreed. GP commented on the address of the website – the word Nuclear is an emotive word and asked if it could it be changed. SS agreed it could. The website address to be changed to: http://radon.ntua.gr CL asked if it was possible to change the address to .com. EMVDG commented that .eu would be a good compromise. BC suggested that if this was not possible, maybe 'european information' in the title would be an alternative. SS agreed this was a good idea. CS offered to check with Commission whether we can piggyback off the EC website JMiles felt it should not be too expensive. CS commented that maintaining the site is where the cost comes in. JMiles agreed to look into this.	All partners - prepare a page in own language for inclusion onto website NTUA to change address of website CS to contact Commission regarding the website address JM to look into cost of buying and maintaining website address
	INTRODUCTION TO TOPICS AND TOPIC LEADERS	
	Mitigation of existing buildings **Mike Jaggs : Building Research Establishment Ltd (BRE). UK.** **See Presentation - Appendix 3** MJ gave details of the objectives of the Topic Group. MJ will send out a questionnaire for all to fill in and will need it back to start preparing database. Would like ideas on how to pull together and requested that partners send him knowledge of other data systems etc.	MJ to send out a questionnaire to all members for information

	CA asked if the database will link with the web page. MJ replied that the database will be set up to input information. When finished it will be put onto website, country specific. It will only be put on website when complete. CS commented that a sheet describing each particular solution may be a way of doing it. BRE have specification sheets for the key solutions used in the UK. MJ will send out a template for partners to complete with specification details for their countries. MJ will design list of questions that require input specific to your country, for everyone to fill out and send information back. It will not be an exhaustive list but if there is anything missing that needs to be included on the database then members should add comments. **Measurement Protocols** **Jack Madden : Radiological Protection Institute of Ireland (RPII). Ireland** **See Presentation - Appendix 4** JM talked about the areas for consideration and the questions that need to be addressed**.** LM asked if questionnaires are being sent out. JM confirmed they would be in order to find out what is going on in each country. MN asked if soil gas radon measurements are to be included in this topic. JM replied that if this is the type of radon mapping that has been done he would like the information. SS asked if there had been any intercomparisons between mapping techniques. JM confirmed that one had taken place between the NRPB and RPII. JMiles said that their intention is to do one each year and intercomparison will continue. CA said that although there is only one intercomparison a year detectors can be sent to other laboratories for standardisation. AP asked if this is the time to do something similar for active devices. JMiles replied that a scientist is	MJ to send out template of solution sheet JM to send out questionnaires for information from each partner

	needed to be with the active device to make sure measurement technique is correct. It can be expensive but could be done if funded. EH asked if it was planned to undertake intercomparisons between mapping techniques. JM replied they may not have resources to do so. CS pointed out that the public need to be aware of the different measurement techniques available and what the results mean. GP said that Switzerland would try to do something with German and Austrian colleagues. GP input would be useful. CM commented that guidance on measurements is important, ERRICCA 2 should give guidance on how one can find out if their environment has a risk. They also need to know if their results presents a real risk. ERRICCA 2 should offer a reliable method and this cost should be undertaken by research funds. JM was not sure whether ERRICCA 2 would have any legal authority to insist laboratory services in different countries should be accredited. We could use ERRICCA 2 to highlight this problem. **Protection of new buildings** **Claus Andersen : Risoe National Laboratory (Risoe). Denmark** **Emiel Van der Graaf : Kernfysisch Versneller Instituut KVI Netherlands** **Christian Lund : Icopal Plastic Membranes. Denmark** EVDG and CL Introduced themselves and confirmed they had taken over from CA as project leaders. They have 4 deliverables which will be split between them CL will be sending out questionnaires to find out what the building codes are. He will evaluate to see if there is grounds for common building code in Europe. CL to review radon construction techniques. Will be looking at different techniques in the different countries.	CL to send out questionnaires to all members

	Modelling for Protecting new Dwellings **Emiel Van der Graaf : Kernfysisch Versneller Instituut KVI Netherlands** **See presentation - Appendix 5** EVDG to look at pre construction predictions of radon levels. He questioned whether increased knowledge into buildings was also his area. CS confirmed it was. EVDG to send out questionnaires and ask for inputs – if there are people in your country who could give input please do so. SS asked if EVDG saw any kind of intercomparison between modelling and controlled measurements and maybe it is time to put effort into this. EVDG agreed it would be useful to have a tool to predict measurements and then measure houses. SS felt we should point out to the commission that this should be done. EVDG felt we should make a proposal to do the test, but only when we have the money. CA pointed out that all countries should have a protocol for protection of new houses – it would be interesting to see how they work. This knowledge would be useful. **Building Materials** **Marios Anagnostakis : National Technical University of Athens (NTUA). Greece.** **See Presentation - Appendix 6** **Building Materials Database** – we need to decide if we go ahead with the database that has been formulated. Need industries feedback and need to decide what kind of data we are interested in. LM commented that in Sweden radon in building material is not a big problem, main problem is from the ground. Sweden do not need the database. PL felt there was a need for data, would like information but not as a database.	EVDG to send out questionnaires CS to contact Commission

	EVDG commented that there is a need for a European protocol for radon measurements of building materials but maybe it is too soon. SS confirmed that due to the general lack of interest at the present time the database would not go ahead. Agreed by all. **Standardisation of Procedures** - Need to decide how to proceed and to decide which procedures need standardisation. Maybe it can be discussed out of the meeting. EVDG asked if anyone has any knowledge and information. HS asked if questionnaires were to be sent out. MA confirmed they would. SS said that information would be requested within next two months. This may result in 1 or 2 protocols. CS felt that the main thing is we are discussing protocols. UK do not go through testing procedure with barriers but this is not the case in other countries. Common protocols need to consider different needs in different countries. NTUA to prepare questionnaire to ask for procedures that currently exist, any knowledge from other European projects and any experience from own country. PL advised the group to contact the European Standardisation Body. **Accreditation of laboratories conducting building materials measurements** – Need to gain experience from colleagues from laboratories. Need to decide what kind of measurements and procedures. NTUA to prepare questionnaire and will expect feedback. EVDG asked if there were institutes that undertook radon measurements which were accredited. JMiles said there were no bodies to carry out accreditation. EVDG – if there is no one who can do accreditation	NTUA to send out questionnaires to request information NTUA to send out questionnaire to request information

	then this is a problem. LM confirmed they had 2 laboratories accredited to measure radon in dwellings. HA have accredited labs. JMiles confirmed the NRPB has a scheme for accrediting passive radon measurement devices. SS felt we need a lecture on radon accreditation – we need to pay money for accreditation. NTUA to take this on. We need to examine what accreditation means and what to do in the future. CS to get information on links BRE has with accreditation schemes. CM confirmed there are standards for accreditation for laboratories - IS0 guides and European Standards. The laboratory needs to set up a quality system to ensure testing is done following the same method every time, taking into account all parameters. People testing to be educated and experienced. Every testing method has to prove a level of accuracy over the years. All testing equip needs to be calibrated. The accreditation is for each method tested. While producing data of this significance and giving it publicity, it is important that the figures come from a well established laboratory – an accredited laboratory. LQ pointed out that it is important that at the end of the project we have accreditation. DP felt that we should get the protocol out first before accreditation. **Intercomparisons** - Proposed intercomparison of raw building materials. HS confirmed his laboratory has already organised intercomparison on radioactivity measurements. CM pointed out that if one has to introduce in house method for accreditation one has to prove the validation of the method. Need to show that the method really measures what you want to measure. Maybe intercomparisons of labs and standards materials should help those that need to be accredited. CA said that intercomparisons should be organised and those that participate pay for it themselves. Main	NTUA to look in to accreditation BRE to get information on accreditation schemes

	cost would be for shipping. The organising lab would then need to keep track of samples SS also felt we needed intercomparisons but NTUA do not have the funding. Conclusion is that we should go ahead with intercomparison. If we decide then everybody has to undertake the cost. MA asked if there was an interest in measuring natural radioactivity measurements of building materials. SR commented that it requires some scientific work rather than the 'pass-no pass' method.. LM pointed out that it is difficult to make these measurements. It depends on how much building materials you use. CS suggested a debate on how to take this to the next stage. We need to identify the need. PL said this should not be done now as we do not have a standard. We need a standard before we can simplify it. MA asked if they should proceed with a Radon papers on the website containing reports and links to publications. CA felt that links are sufficient for publications. EVDG felt that this would double information already accessible on the internet. Links are sufficient. MA asked if Thoron measurements would be useful. LM said that thoron is not a problem is Sweden. MA to send out an e-mail with this information and request what people are interested in. **Increasing public awareness and confidence** **Chris Scivyer : Building Research Establishment Ltd (BRE). UK.** **See Presentation - Appendix 7** Chris requested comments and suggested everyone looked at the display boards to see what type of literature is available to the public.	Interested parties to discuss with NTUA NTUA to send out e-mail requesting information

	MO asked what reaction we got from lending institutes. CS replied that some see radon as a threat and do not want to know and others feel it should be treated as something special. Some progress has been made on educating lenders on mitigation systems. PH said that in Sweden radon is covered under the house sale survey - training for estate agents is required. CA suggested icons and photographs on the website to make information available to everybody. CL felt we need to convince health people and politicians we have a problem.	
	OTHER EUROPEAN RADON ISSUES - **Presentations on other European radon projects** **Other radon issues impacting upon Europe**	
	Radon in water : Serena Risica Physics Laboratory National Institute of Health, Italy **See Presentation - Appendix 8** NRC Risk assessment of radon in Drinking Water – report of the National Academy of Science 1999 SR talked about the conclusions of report. Commission recommendations of 20.12.01. Protection of the public against exposure to radon in drinking water supplies. SR talked through recommendations. AP asked why mineral water is kept out of recommendations – they can contain radium. SR confirmed the recommendations only cover water only from the tap. **New Radon abatement policy in the Netherlands - Pieter Lanser ENCI, Netherlands.** **See Presentation - Appendix 9** The Dutch Radiation Performance Act (RPA) PL explained the theory of the RPA which could come	

	into force in January 2003. He has argued against the RPA and hopes it will not come into force. **Current Radon Research as compiled from the abstracts submitted to NRE VII** **See presentation - Appendix 10** SS presented paper about abstracts submitted for NRE VII. There has been a shift away from papers on radon remediation. SS invited ERRICCA 2 members to NRE VII. ERRICCA 2 members will only be charged half the price of the fees. CS was invited to give a presentation on ERRICCA 1 and what we should expect from ERRICCA 2.	
	INDUSTRIAL FORUM	
	Frederick Fryer – The Radon Council **The Constitution of the Radon Council** **See Presentation - Appendix 11** FF gave a talk on how the council evolved. Stressed it is a non profitmaking organisation, it is a regulatory and educational body. Website - www.radonhotline.org. Talked about the draft Directive on Radon Gas and Reducing Health Risks. This was presented at ERRICCA 1 and represents a protocol for managing the radon problem. Outlined further possible areas in which the Council could make a meaningful contribution: • Establishing training programmes – as described in presentation. • Distance learning can work. • Radon manual can be translated to member states. • University Radon Network can be extended through European Radon website.	

	Asked for feedback on how they could help ERRICCA 2. HK asked how they were financed. FF replied they were financed by fees from training courses, selling manual, subscription to council. FF confirmed they are a private limited company currently considering becoming a charity to take advantage of some tax advantages. AP questioned the figures in part 2 of draft where it states that radon contributes to 49% of average annual doses from all sources of radiation. They are concerned about the steep increase of medical exposure. Is this the same observation made in other countries. JMiles said an account given last week confirmed the total has not changed very much but the balance has changed. Average dose from normal xrays has gone down, number of CT scans has gone up. **Remediation in the Republic of Ireland** **Michael O'Gabhlain - Remedia Limited, Ireland** **See Presentation - Appendix 12** MO talked about remedial measures – Solid concrete floors in houses. Most floors in Ireland are solid concrete which has an affect on remedial work . The solution we prefer is reducing under floor pressure. This always works. This solution involves extracting air from under each room and linking to a fan. One idea is to have several smaller fans all acting independently. Existing buildings – 90000 are likely to be above level. New buildings – showed map of affected areas. Misgivings about membranes as a remedial measure. In respect of what happens on building sites with membranes. Showed graph showing levels with under floor membrane. There is nothing wrong with the membrane but how it has been laid. A membrane does not solve all the problems, high probability failure.	

We should consider how to improve the situation. We need to remember what our objectives are.

CS commented that all scientists should go to a building site to see the end result – would prove to be very useful.

Radon in Romania
Ildiko Mocsy - HERO, Romania

See presentation - Appendix 13

Showed statistical data for 1980-95. There is an increased trend in lung and respiratory tract death.

Showed map of Romania. Some measurements taken by A Poffijn – 24 houses monitored - 35% of houses over 200 bqm3.

There is no real problem from building materials in existing dwellings but there may be in new buildings due to new materials being used.

Romania does not act to improve indoor air quality.

Quantitive Survey of Radon Awareness among Czech Republic residents – Nov 99.
Martin Neznel - Czech Technical University

See presentation - Appendix 14

MN presented the questionnaire that was given to residents. Talked through the results and gave breakdown of answers to the questions.

Tuesday 26th February

Chris stressed that everyone should be involved in the project and needed everyone to make a contribution.

If there are any organisations in your own country that wish to contribute on any of the topics, they will be able to but let them know they will not be funded by ERRICCA.

CS will be contacting the EU re the website on return to the office. CS asked whether 'gr' at the end of the

	website address is a real problem. No comments from anyone. E Hinnis has taken it that there are no objections. **2nd European Radon Forum** CS confirmed the date of the next meeting in Athens – **14-15th October 2002.** CL asked for dates of the rest of the meetings. Chris will go through these later. **Radon Building and Townscaping** **George Elken, INTERPROJECT, Romania** **See presentation - Appendix 15** GE presented and talked about slides from project completed in last two years showing different radon areas. CS commented on the different sorts of organisations involved in ERRICCA 2, George Elkan for example being an architect, and emphasised that we need to make good use of them all.	
	RADON AND BUILDING MATERIALS	
	Measurement protocols for radon exhalation from building materials and determination of activity concentrations in building materials - Emiel Van der Graaf KVI. Netherlands **See presentation - Appendix 16** Described measurement protocol Sample size 15x15x15 – three samples need to be tested. Three different samples need to be measured. Could these protocols be used for EC. For activity concentrations this is a good method. HK asked if they have tried other results for ventilation rates. EVDG replied that they had not, They wanted to have a measurement that measured free ventilation of	

material. The radon should exhale freely. If you enclose it, it distorts protocol.

BC asked what they did with the results. Is it to estimate indoor radon level in buildings. EVDG replied that the advantage of doing it like this is that all material is measured the same. The link between laboratory measurement and real house is not yet made.

SR commented that gypsum has a concentration of radioactivity. EVDG replied that the activity is very low and the protocol states that you have to make a measurement of the material before spiking and after.

EVDG stated that the protocol shown is only for building materials. It is not of use in the Dutch legislation. For legislation you have to use this protocol.

The possibility of evaluating the contribution of building material to indoor radon concentration by means of some in situ measurements (dose rate and gamma spectrometry) and a computational model.

Serena Risica, National Institute of Health, Italy

See presentation - Appendix 17

SR talked through the results of research.

HA asked about different surface layers and treatments on walls – have they been considered. SR replied that it is particular to Rome that there is no plaster covering of the walls because of expense. People use paper on walls or paint.

Dose contribution caused by coal slags as building material Janos Somlai , University of Veszprem, Hungary
Csaba Nemeth

In 1961 coal slags were banned from being used as a building material for wall blocks. In spite of this people used slags as back fill and insulator between levels. Showed method of slag in building. This could cause a high dose of radon.

	Measured dose rate in dwellings – three cities measured. Also measured schools. Where dose was high they tried to get slag samples. Showed measurements of radon measurements in two flats. Concentration reached 3000 bq. Showed measurements by track etch detectors. PH asked if they had tried to lower radon level in these buildings. CN replied they had been advised to increase ventilation and to remove where possible the slag, this would be the best solution. PH asked what the success rate of mitigation was after increased ventilation. CN commented that there is no legislation for radon levels in Hungary yet. We can only advise. CS commented that the slag is a lightweight material that can be vacuumed up, the problem would be where it is hidden. Where vacuumed it can be removed. Increased ventilation may not be sustainable, especially in the cold climate, there is a need for an alternative solution. CS asked if there was any covering that could be put on the wall to stop it coming into the rooms. CN not aware of one. CS suggested that maybe we should all think about this for the next meeting. **Radon in Water Measurements** **Presentation by DJ Karangelos** **National Technical University of Athens.** **See Presentation - Appendix 18** Discussed principle of method. The solubility of radon in the water depends on the temperature of the water. PH asked how much time does it take to measure 1 litre of water. DJK replied, less than 1 hour. PH asked if any other labs used this. DJK pointed out that they had not developed the measuring device yet – only the method. EVDG commented that for higher values we need a smaller chamber	All partners to consider methods of sealing high radon emanating materials

The need for a common protocol for testing of radon barriers - Chris Scivyer, BRE, UK.

See presentation - Appendix 19

CS asked which countries are testing radon barriers. 6 countries involved.
CS suggested that barriers could be graded 1 2 or 3 for different areas and effectiveness. End user could then select the product on the level of grading.

CL commented that a uniform test method with uniform results would be very welcome.

CS pointed out that it would be good if this could come out of ERRICCA 2.

PL commented that the EU are developing a lot of standards maybe we should contact them. Could also contact ISO. Standards need to be harmonised.

MA – we need to find out first what standards exist in each country.

CL pointed out that we need to consider what target level we are looking for after radon protection.

CM commented that the target level is decided by designer. It is not our task to decide this.

CS said that we want it to be as low target as reasonably practicable. We need some kind of guidance on this. It is difficult to define uniform standard. The protocol we are looking for could take this into account. If the grading is based on our current evidence. We are all starting from different level, we are trying to help those who have not got very far.

HA pointed out that air permeability is important as well as the strength of the barriers. CS said it is the jointing of barrier that is the problem, not the barrier itself.

PH asked about the different demands for the quality of membrane in different cases. CS replied that in the UK the barrier is installed to a reasonable not perfect standard, we expect gaps and work on assumption that we do not need to activate fan. A long term durability study undertaken in UK showed measures are still

	working. **A method to measure the radon permeability of membranes - Emiel Van der Graaf. KVI. Netherlands** **See presentation - Appendix 20** EVDG talked through the method developed. It is a KVI in house method. Two barriers tested – one proved completely radon proof. CL asked more details of the barrier, EVDG did not know and could not tell us the formula of the barrier material with the best results. LQ to contact EVDG with comments for discussion.	LQ to contact EVDG
	RAISING PUBLIC AWARENESS	
	Raising Public Awareness **Andre Poffijn Federal Agency for Nuclear Control, Belgium** **See Presentation - Appendix 21** We need to change people's apathy about radon. They need to take it seriously. Only small proportion of houses have been tested and proportion of mitigated houses is very small. Described how Restorad Project was proposed but not successful with the EU. **The UK Radon Public Awareness Roll-Out Programme - Liam Davey, DEFRA, UK** **See Presentation - Appendix 22** Liam described programmes run since 1987 and the current roll out programme. Programmes run have been successful. Local Authority advice proving successful. People trust local authorities rather than government contacts.	

In the UK one third of remediation is taken on as a Do It Yourself project, one third uses contractors and one third use local builders.

Hotline is there to provide confidence. Local Authority help is important. Radon Council leaflets also issued giving details of specialist contractors.

Radon Communication and training in Switzerland
Georges Piller - Swiss Federal Office of Public Health, Switzerland

See Presentation - Appendix 23

The duty is to look at public awareness. Programme started in 1995. Public awareness was very low. GP ran through aims of public awareness.

Radon : Current Work in France
Bernard Collignan, CSTB France

See Presentation - Appendix 24

Presentation linked with public awareness. IPSN have taken 12000 measurements in dwellings – showed mapping 1982-1998.

There is no systematic information available for the public at the moment.

Showed house built to test radon remedial measures.

Radon awareness in Finland
Hannu Arvela, STUK, Finland

See Presentation - Appendix 25

Showed map showing radon affected areas. Detailed the activities of STUK to raise awareness. Gave website address www.stuk.fi. The site is well used People are able to ask questions over website.

1000-2000 calls are received by telephone each year. Radiation safety page on Text TV

Workplace measurements increased – Industrial

	Safety Authorities now require measurements. Indoor Air 2002 Info and Education Campaign - This is funded by two Ministries and other organisations. Gave details of their objectives, information attached. Will be providing guidance for Indoor Air 2002 website. CL asked what it takes to trigger a reaction to radon at government institutions – they know it exists. LD replied that from the UKs point of view it was the risk apparent to the communities in the South West that was the trigger for the government to leap into action. Things have expanded since. They also have policies on reducing levels of cancer and radon feeds into these policies. CS commented that hitting informed people is the key. JM pointed out that it has taken a long time to get to current levels in the radon programme, it has been a gradual process over the last 15 years. CA asked whether politicians have forced radon issues. JM replied that questions have been asked in parliament and has helped but has not been a major factor. CS commented that he had given a talk to MPs on radon work done over last 20 years with good initial feedback. PH asked how many people die per year from radon in the UK. CS confirmed we use the figures of 2000 domestic and 500 workplace. JM commented that we do not push the statistics too much as lowering radon levels does not have a great affect on people dying. PH commented that they do not have a radon mitigation or industrial organisation. Would there be an interest In starting European organisation. CS said that BRE's view is radon is a building issue and approach it from this angle. We approach chartered surveyors etc., and organise training courses for them. National organisations not too interested as it is localised issue. The Radon Council was formed to help fill the gap. There is similar organisation in the Irish Republic. Maybe a similar organisation to the Radon Council could be formed for Europe.	

	CS commented that the buying and selling market is being looked at – the question on radon was voluntary but is now compulsory. Average turnover of housing is 7-8 years. A lot of awareness generated through this route. LM commented that it is important we try to convince the government it is serious. If we succeed in remediating every house exceeding 400 bq/m3 we will save lives every year. CA pointed out that people are not concerned with risks unless there are children involved. The US have exploited this approach. Children and value of property will be main areas of interest. MJ commented that people pick up information by TV and radio. We do not use the TV and radio in the UK, is it used in other countries? PH commented that If media are invited to seminars such as these and ask them to write articles each month it could be cost effective. CS pointed out that there could be problems with using national newspapers - in the UK we have a negative press. LD felt that local newspapers give a more balanced report. We are encouraging local authorities to give features to local press. SR attended the Radiation Protection Environment conference. There was a presentation by somebody from the US who had experience of nuclear plants. He made a presentation on experience with people and decisions made and taken. He had some experience in radon programmes. Maybe this type of guy could be invited to ERRICCA 2 meetings. SR will send the presentation. E Hinnis asked if there was an epidemilogical study taken before and after remediation. JMiles confirmed there was not. Too difficult to do and takes too long. CS – asked for any ideas, things that might have been missed. CS will put out a questionnaire with a prompt to do something	SR to send presentation to CS CS to send out questionnaire

	OTHER PRESENTATIONS	
	The CSN Radon Research Program" Martin Matarranz , Consejo de Seguridad Nuclear, Spain **See Presentation - Appendix 26** Presented details of the research programme currently being undertaken. Showed map of Spain with radon values and gave results of studies undertaken. **Mitigation in several compartment buildings in Sweden - Per Hallberg** **Radon Prevent AB, Sweden** **See Presentation - Appendix 27** Most owners of apartments do not acknowledge radon. They are now being made aware and want quick solutions. Owners think they only have to increase ventilation but occupants do not want this because of the cold climate. Interest in radon mitigation may decrease because of low success rate in mitigation. It is expensive to mitigate. As a result of low interest there are few mitigation companies. CS asked if they had tried blowing into system. PH said that this created problem with humidity. CA asked if the Swedish Building Authorities make recommendations about mitigation. If so, do they recognise your system. PH replied that they are being recognised. **Measurements of radon exhalation from soil in mined out areas. (Upper Silesia-Poland) - Malgorzata Wysocka Central Mining Institute Poland** **See Presentation - Appendix 28** There are about 40 open coal mines still operating.	

	Energy is still based on hard coal. Our power plants produce not only energy but wastage with enhanced radioactive activity. Coal is stored on the surface. Power plants produce fly ashes and sludge piles.	
	WRAP UP SESSION	
	CS highlighted three areas to be considered at next meeting • new build protection • mitigation • mapping and measurement We need to look at some of the progress being made in terms of questionnaires being sent out and information for web site. **Building materials – standardisation of procedures** MA Will be asking about procedures at your organisation/national level and what procedure you think we should proceed with. Tests – what should be measured. **Mitigation -** MJ will be sending out questionnaire – will appreciate information on mitigation techniques, problems you foresee with systems for householders etc. Will send template out – please start filling in as soon as possible. At next meeting hope to look at ways we can present information on website. SR to give a presentation on Thoron. **Newbuild –** CL to ask all to provide building codes and regulations in different countries. It will need to be translated into English and reference numbers . It would be useful to know what Ministry in your government this code applies.	

	Construction techniques should be done afterwards. Maybe at meeting in Copenhagen. Will need summary of techniques in different countries, suppliers/manufacturers etc. CA suggested this information should be in a brief summary. **Pre and post construction** – EVDG will be asking for information on progress and will ask industrial partners re problems on modelling. **Mapping and Measurements –** JM will be sending questionnaires asking for references for reports, mapping techniques and measurement techniques recommended for indoor radon, domestic and work environments. Information questionnaire. **Website -** EH will be asking for any information at all on the website. Links from national authorities, topics etc. **Public Awareness –** CS would like to see some information on the schemes that are working and why. Also any failures on publicity. **Measurement of Building materials -** If there are any accredited laboratories please let Marios know – it will be covered by questionnaire. CS acknowledged the work that KN had carried out in order that the Kick-off meeting had run so smoothly. CS thanked everyone for attending and looked forward to meeting everyone at the next meeting in Greece in October. **Date of Next Meeting: 14 - 15th October 2002**	