Stakeholder Engagement: the UK Experience

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Abstract

The UK has a strong tradition of Stakeholder Engagement in decision making in Radiological Protection and in wider societal and environmental matters. This allowed the UK's Society for Radiological Protection (SRP) to take a prominent role, along with the French and Spanish Societies, in developing the Guiding Principles for Radiation Protection Professionals on Stakeholder Engagement adopted by IRPA at IRPA 12. This paper reviews the actions taken to promote the use of the Guiding Principles set against the context of the historical development of Stakeholder Engagement in the UK. Importantly it looks at the professional and societal drivers that encourage processes with Stakeholder Engagement at their heart. The paper also looks at commonality with elements in the developing concept of RP Culture and the work of the long established ALARA Networks. Use is made of practical experience gleaned from UK stakeholders, analysis of relevant research and surveys. A range of case studies, are summarised to examine the current state of play in the UK. Reference is also made to the importance of Stakeholder Engagement as an integral element of the emergency preparedness framework that is common for dealing with all UK emergencies. This together with experience from the response to the Polonium Poisoning incident in London in 2006, is covered more fully in an associated paper.

Key Words: Stakeholder Engagement, UK review, decision making in radiological protection.

1. INTRODUCTION

During the 11th Congress of the International Radiation Protection Association (IRPA), held in Madrid in May 2004 there were considerable discussions on the benefits of involving all relevant parties in the decision-making processes related to radiological protection. As a result of these discussions a group of professionals from the French, Spanish and UK IRPA Associate Societies decided to collaborate in organising a series of workshops to exchange information especially on case studies of how stakeholder involvement had been carried out in different fields of radiation protection. The workshops were held in Salamanca, Spain, November 2005, Montbéliard, France, December 2006 and Oxford, UK, December 2007 and resulted in a draft version of the Guiding Principles. During the course of this development the progress was systematically reported to meetings of the IRPA Executive Council and at IRPA Regional Congresses.

The draft version of the Guiding Principles was sent to all Associate Societies for comments in Spring 2008. After revision by the Executive Council, the Guiding Principles were presented at the IRPA 12 Associate Societies Forum and, after discussion and with some amendments, endorsed by the Forum. The Guiding Principles [1] were finally adopted formally on 18 October 2008 in Buenos Aires by the IRPA Executive Council. These Guiding Principles are intended to aid members of IRPA Associate Societies in promoting the participation of all relevant parties in the process of reaching decisions involving radiological protection which may impact on the well being and quality of life of workers and members of the public, and on the environment. In promoting this approach, radiological protection professionals will aim to develop trust and credibility throughout the decision making process in order to improve the sustainability of any final decisions.

Associate Societies were challenged to promote the adoption of the Guiding Principles to their membership and wider 'road testing' leading to embedding the practice. In the UK the Society for Radiological Protection (SRP) commended Stakeholder Engagement to members and identified the IRPA Guiding Principles as a useful framework to aid these activities [2]. This paper makes use of UK experience from the development of policies covering Stakeholder Engagement and practical experience gleaned from case studies, to examine the current state of play in the UK. It will act to provide feedback into the international review and development of IRPA's Guiding Principles.

2. CONTEXT OF UK DEVELOPMENT OF STAKEHOLDER ENGAGEMENT

The IRPA Guiding Principles provide both a useful international consensus on best practice and guidance for those starting Stakeholder Engagement or wanting to improve their approach. However it must be noted that they are only Guiding Principles, not mandatory requirements. Each country and individual organisation will have developed or will develop their approaches to Stakeholder Engagement in the light of the profile and history of RP issues in the country/ sector of use and, probably more importantly, the societal context of the transparency, fairness and sustainability of decision making . In this latter context it must be emphasised that Stakeholder Engagement is not just a concept in RP; it pervades all areas of human endeavour and also has a strong academic base [3]

In the UK, there has been a long history of what we might now term Stakeholder Engagement. It has evolved through a series of influences from simple provision of information on what had already been decided, through limited consultation around the detail but not the core of some policy or strategy, to varying degrees of participative planning and decision making. Four main influences can be identified that have driven the development and influence of Stakeholder Engagement and participative decision making;

2.1 Political

Over the last couple of decades politicians have had to face questions that impact on their capacity to act. How to reverse the decline in public connect with Government, the so called democratic deficit? How to improve turn-out in both Local Authority and National Elections? How to achieve more public understanding and buy-in to increasingly complex and equivocal public policies? In short how to achieve traction and sustainability of those policies, many of which involve difficult trade-offs and compromises? Finally, how to share both responsibility and accountability for tough decisions with Citizens? The response to these questions was a rapid growth in involving wider stakeholders including the public in a range of Government issues and policy proposals. This was typified by the incoming Blair Government's 'Big Conversations' initiative to engage through public discourse on the future challenges facing Britain (June 2003 onwards) of which the infamous GM crop trials debate was one example.

2.2 Legal/Constitutional

The introduction and development of official Public & Planning Inquiries into major planned developments with implication for local communities and wider society (eg. Sizewell 'B' inquiry) and in the wake of major disasters and accidents (eg. Windscale Fire) has set a keen public expectation that standards and decision making should be openly scrutinised and that evidence should be taken from **all** relevant sources.

The advent of the Freedom of Information Act 2000 [4], Human Rights Legislation [5], the environmental protection Aarhus Convention 1998 [6] and a consolidating Inquiries Act 2005 [7] gave rise to a wave of secondary legislation eg. the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR) [8]. This simply fuelled public expectations of their rights to full information and involvement in decisions which would impact on their lives and those of their offspring.

2.3 Societal Expectations

There has been a huge shift in attitudes to Authority and specialist knowledge in the last fifty years from a deferential, respectful, trusting view of those in power to a much more sceptical, questioning, challenging approach based on the growing accessibility of information, knowledge

and advice, together with exposure of the frailty of both those in power and specialist roles, and their decisions. Simplistically this could be viewed as a transition from a paternalistic to an individualistic based society.

Society has at the same time gradually become more environmentally aware, with the younger generations in particularly concerned about green matters, legacy issues and worldwide implications of UK policies and practice.

2.4 Technological Advancements

Issues have increased in complexity, with fewer 'black and white' decisions to be made and much more emphasis on optioneering, cost-benefit analysis, risk assessment and trade-offs. The presentation and communication of policies has become key to achieving acceptable and sustainable solutions.

The arrival of the internet, and on its back social networking, has both infinitely increased access to information, knowledge and advice, and also enabled networking and cohesive action on levels previously unknown. It has produced a thirst for knowledge and a sense of empowerment particularly among the younger generations. Government and the institutions of society have had to respond by becoming increasingly geared to transacting affairs in electronic fashion.

The following Case Studies illustrate how the UK has responded in practical terms to the broader agenda.

3. CASE STUDIES

3.1 The BNFL Stakeholder Dialogue

British Nuclear Fuels Ltd (BNFL) was the operator of a wide range of nuclear facilities covering fuel fabrication, power plants, reprocessing and waste management activities. The largest site within the company was the Sellafield reprocessing facility. The site had a strong history of engagement with the local community through a long-standing Local Liaison Committee, and particularly during the 1980/90s made substantial efforts to be seen to be open and responsive to public interests. Despite this, there was popular public perception that operations were unsafe, created pollution and engendered fear. This perception was not shared by the workforce or the majority of the local community, but adverse media coverage and consequent political concern made BNFL a contentious business.

In 1998 BNFL decided to embark on a process of Stakeholder Dialogue, designed to help the company's environmental decision making. Working through an independent facilitator, a wide range of stakeholders including local community, unions, regulators, government and several NGOs (primarily covering 'green' and disarmament interests) began an eight year long journey. This explored many key, sensitive and contentious issues; and eventually influenced both government and company policy, as well as leading to a more respectful and mature relationship between the company and its traditional opponents.

At the outset it was recognised that the low trust between some of the parties could not be addressed directly, and a set of ground rules was jointly developed to provide the framework for the dialogue. A prioritised set of key issues was agreed, but it was also agreed that the process would begin with small working groups addressing slightly less difficult issues in order to gain confidence in the process. Over the eight year period the dialogue evolved to address issues such as Sellafield discharges, waste management policy, the need for reprocessing, the socio-economic impact on the local community, the future of plutonium stocks, the balance between security and openness, and finally issues relating to the transition from the BNFL organisation into the new 'government

owned, contractor operated' NDA (Nuclear Decommissioning Authority) regime as decreed by government.

Key learning arising from the dialogue process included:

- The importance of the dialogue process itself where there is a lack of trust: a skilled neutral facilitator worked hard to develop a mutually-agreed set of rules (which were clear on the decision-making context of the process) and to define the key issues which needed to be addressed
- There was great benefit in making progress within smaller work groups focussed on specific issues, which then reported back to the larger stakeholder forum
- Begin work on the less-contentious issues in order to gradually build trust, confidence and respect
- Having explored and identified the areas of agreement, it is perfectly acceptable to agree to disagree in other areas. It is then helpful to seek to understand and clarify the reasons for the difference of view: this often came down to different Value sets
- Persons involved in making progress within the smaller working groups must devote effort to ensuring that their 'parent' organisations are adequately aware of the issues under discussion and the broad direction of progress being made. Sharing both facts and views amongst a small group did bring people together, but presented a danger of individuals moving from the accepted positions of their respective organisations.
- There is a need to demonstrate some benefits coming from the process for all parties, whilst at the same time ensuring a realistic level of expectation.

The dialogue was widely regarded as broadly successful, and there was a surprising and unexpected degree of agreement on many of the above issues. In some cases this led to 'joint' presentations and discussions with Ministers and government officials, which influenced government approaches and policy. Where there was disagreement between some of the parties, there was a much clearer understanding of the reasons for the difference, which led to greater mutual respect and improved relationships. There was more openness and availability of information – and a clearer understanding of areas where information could not be freely available. A final unexpected and satisfying outcome was the development of respect and friendships at a personal level between people of widely differing views who had been shouting at each other for quite a long period of time. [9]

3.2 West Cumbria Sites Stakeholder Group (WCSSG)

The West Cumbria Sites Stakeholder Group evolved from the already existing 'Sellafield Local Liaison Committee' in 2005. The committee in its various formats has been in operation for well over 40 years and aims to provide a forum through which local stakeholders are able to be updated on the nuclear industry in West Cumbria, namely Sellafield Ltd, The Low Level Waste Repository, Calder Hall and the Windscale site. Operators from the sites, as well as regulators and the site owners, the NDA, provide reports and are available to answer questions fielded from the committee members and any members of the community who wish to go along and observe proceedings. These meetings are held quarterly: minutes of meetings and more details can be found on the group's website [10]. The site contains the following statement:

"It's important that the local community is kept informed of all aspects of operations on the nuclear licensed sites. The WCSSG allows interested stakeholders to hold the operators of the sites to account in an open and public forum."

There are a number of sub-committees that have open meetings including the Emergency Planning Sub-Committee, which has the remit to scrutinise the on and off site arrangements to protect the workforce and public in the event of an emergency at Sellafield, and to suggest possible improvements. These include:

- the On Site Emergency Plan
- the On Site Emergency Exercises
- Cumbria County Council Off-Site Emergency Plan
- Off-Site Multi Agency Emergency Exercises
- Arrangements to warn and inform the public.

3.3 Nuclear Sites Stakeholders Groups across the UK

The WCSSG above is perhaps one of the biggest and most long standing groups, however whilst there is no legal requirement to have a LLC/ Site Stakeholder Group (SSG), all nuclear licensed sites have them. The LLCs / SSGs have quarterly meetings which are hosted by the licensee and include local authorities, trade unions, interested local groups and members of the public. The Office for Nuclear Regulation (ONR), an Executive Agency of the Health and Safety Executive (HSE) produces a report each quarter for the LLC meeting which is presented by the site inspector at the meeting, and all the quarterly reports are on ONR's website. [11] The ONR also gets involved in Stakeholder Engagement, both locally and at a national level. The latter includes hosting meetings with NGOs and a stakeholders Newsletter. The chairpersons of the various LLCs and Stakeholder groups for nuclear sites come together regularly in the National Stakeholder Group Chairs' forum to facilitate co-operation and coherence.

The Nuclear Decommissioning Authority (NDA) is a major stakeholder in many of the nuclear sites [12] and has a senior post dedicated to Stakeholder Engagement. The NDA runs annual National Stakeholder Events.

Overall it can be concluded that the nuclear industry in the UK, both the operators and the regulators fully embrace Stakeholder Engagement.

3.4 Committee on Radioactive Waste Management (CoRWM)

The Committee on Radioactive Waste Management (CoRWM) was established in 2003 and reconstituted in 2006. Its role is to provide independent scrutiny and advice to UK Government and devolved administration Ministers on the long-term management of radioactive waste, including storage and disposal. CoRWM's primary task is to provide independent scrutiny on the Government's and Nuclear Decommissioning Authority's (NDA's) proposals, plans and programmes to deliver geological disposal, together with robust interim storage, as the long-term management option for the UK's higher activity wastes. Part of its terms of reference state

"CoRWM shall undertake its work in an open and consultative manner. It will engage with stakeholders and it will publish advice (and the underpinning evidence) in a way that is meaningful to the non-expert.", and

"CoRWM must continue to inspire public confidence in the way in which it works. In order to secure such confidence in its advice it will work in an open and transparent manner. Hence, its work should be characterised by:

- a published reporting and transparency policy;
- relevant public and Stakeholder Engagement as required;
- clear communications including the use of plain English, publishing its advice (and the underpinning evidence) in a way that is meaningful to the non-expert;
- making information accessible;
- encouraging people to ask questions or make their views known and listening to their concerns;
- providing opportunities for people to challenge information, for example by making clear the sources of information and points of view on which the Committee's advice is based;

- holding a number of its meetings in public."

CoRWM's original programme was to develop

- an inventory of radioactive materials and wastes, waste management options and criteria for screening options (Nov 04-Jan 05)
- a short-list of options and criteria to assess options (Apr – Jun 05)
- an assessment of the short-listed options for managing radioactive wastes in the long-term (Oct 05 – Feb 06), and
- draft recommendations on options and their implementation (May 06).

This ambitious programme of work was carried out with a range of stakeholder fora designed to engage across the public profile. This included, Discussion Groups, Citizen Panels, a Schools Project, Discussion Guide (for self-selecting groups), National Stakeholder Forum, Nuclear Site Round Tables, Open meetings, bilateral meetings with stakeholder organisations and Consultation Documents. Excluding the last of these more than 5000 people took part. The Final report included a set of 15 recommendations reflecting consensus amongst its members [13], stating "the proposals should be politically and technically feasible and publicly acceptable."

The recommendations were accepted by government and since then CoWRM has produced and consulted widely on several more topics and continues to use extensive Stakeholder Engagement.

3.5 HPA's approach to Consultation

As identified in section 2 engaging with stakeholders has become an integral element of how many organisations work these days. Although the readership of this paper will mainly be interested in examples from the Radiological Protection Division (RPD) within HPA, their approach is organisation wide, across infections, pathogens and chemical hazards, as well as radiological protection. Equally their publications range from highly technical documents targeted at professionals, through explanatory material for the public and other audiences, to formal policy or advisory documents. It is this latter group of documents that provide the main focus for consultation and Stakeholder Engagement. Their Consultation policy and procedure can be found on their website. [14]. A few examples of subjects consulted on are given below: more can be found on the HPA website

a. *Advice on Prussian blue*. This consultation document [15] sought views on HPA's proposed advice on use of Prussian Blue (Ferric Hexacyanoferrate) for decorporation of radioactive isotopes of caesium (radiocaesium) following accidental or deliberate poisoning The advice reviews the scientific evidence about the use and effectiveness of Prussian Blue, considers some of the scenarios when it may be needed and gives detailed guidance on triage and monitoring procedures to select patients for treatment. It considered treatment thresholds in the context of other public health interventions, not just those involving radiation hazards. It gives advice on doses, contraindications, side effects, follow-up monitoring and cessation of treatment backed up by draft patient information leaflets. It considers vulnerable subgroups of the population including infants, pregnant and breastfeeding women. Prussian Blue is not suitable for mass prophylaxis and would need to be individually prescribed by a physician as it is not licensed for use (including mass prophylaxis) in the UK.

Although the content of this advice is quite technical it does involve policy decisions on the use in exceptional circumstances of a drug not licensed for use in the UK.

b. *Advice on the Limitation of human Exposure to Radon*. "This consultative document describes the suggested new advice which would replace the advice published in 1990 by the National Radiological Protection Board (which joined the Health Protection Agency in April 2005). There are six main reasons for going out for consultation on this topic now. First, there are new

epidemiological data confirming the link between exposure to radon in the home and an increased risk of lung cancer. Second, since 1990 an increasing body of experience has been gained on remediation of radon in homes. Third, cost effectiveness analysis by the Advisory Group on Ionising Radiation (AGIR) suggests that a reduction in the radon Action Level could be cost-effective. Fourth, the analysis carried out by AGIR indicates that the majority of radon-related lung cancer deaths occur amongst the large percentage of the population exposed to modest radon levels. Fifth, international organisations such as WHO, ICRP, EU and IAEA have recently issued or are developing revised advice on radon. Sixth, there is increasing concern about the health risks from radon at UK Government level and in expert groups such as the Committee on the Medical Aspects of Radiation Exposure (COMARE)." [16]

In this case advances in knowledge and understanding required that previous advice should be revisited; and with its wide impact was clearly a matter for consultation.

3.6 AFCWG and FARMING

Widespread contamination of the foodchain following a nuclear accident could have considerable consequences for European farming systems and food industries. For the purposes of contingency planning and emergency response, it is important to bring together the many and diverse stakeholders that would be involved in intervention so that acceptable strategies can be developed for maintaining agricultural production and food safety. This was first demonstrated by the Agriculture and Food Countermeasures Working Group in the UK. Subsequently, this type of approach was extended in Europe through the establishment of the FARMING network. The network has debated, discussed and exchanged opinion on the acceptability, constraints and impact of various countermeasure strategies. The stakeholder views have been used to develop recovery handbooks for the UK as well as for Europe. [17-20]

3.7 Lifting of Post-Chernobyl Sheep Controls

Following the accident at the Chernobyl Nuclear Power Plant on 26 April 1986, radioactivity was deposited on certain upland areas of the UK. Meat from sheep grazing in these areas was identified as a potential food safety concern and so restrictions were put in place on the sale, movement and slaughter of sheep from defined areas using powers under the Food and Environment Protection Act (FEPA) 1985. A maximum concentration of 1000 Bq kg^{-1} for radiocaesium was imposed, based on advice from a group of experts set up under Article 31 of the Euratom Treaty. Twenty six years later, controls remain on a relatively small number of the originally restricted farms in the UK. The controls are managed through a system known as the Mark and Release Scheme. Under this scheme, a farmer wishing to move sheep from within a restricted area is required to have them monitored. Only those sheep that are monitored and assessed to have less than 1000 Bq kg^{-1} of radiocaesium contamination are permitted to enter the foodchain.

In the late 1990's NRPB was asked to carry out an assessment of the practicability and cost-effectiveness of alternative options for the future management of the restricted areas [21]. A wide range of stakeholders with interests in farming and/or the environment were engaged in the discussions. Due to the very large numbers of farms restricted, the consensus was to retain the Mark and Release Scheme. Some ten years later, the situation was reviewed again, in consultation with a wide range of stakeholders. The Food Standards Agency (FSA) presented results from a prospective dose assessment for representative person(s) consuming radiocaesium contaminated sheep meet from the restricted areas, using data from monitoring surveys in North Wales and Cumbria during the summers of 2010 and 2011. The doses were found to be well below the 1 mSv y^{-1} reference level recommended by the International Commission on Radiological Protection as applicable for the management of land contaminated by a nuclear accident. Consequently, FSA concluded that the current controls are no longer proportionate to the very low risk and removing controls would not

compromise consumer safety. In November 2011, the FSA launched a three month public consultation to seek views and elicit support for the removal of all post-Chernobyl sheep restrictions.

3.8 Decommissioning of a Particle Accelerator: The Partnership Approach

At the end of the useful life of a particle accelerator used in a London Hospital, some decommissioning work had taken place [22]. However some large activated components, principally toroidal magnets had been left in situ and access bricked up. The collective memory faded and structures were built in close proximity. Several decades later the situation came to light and a project was developed to remove the activated components. This posed a significant number of engineering problems to cut up the items into pieces, still large and heavy in their own right, that could be manoeuvred out of the very restricted working environment. Overlaid on this was the radioactive nature of the components. The stakeholders were primarily limited to the hospital environment and involved staff from many organisation on site.

Overall thirty contractors were involved in the project which equated to 3554 man days. The contract team has a variety of specialist skills due to the complex nature of the task and many had not experienced working within a radioactive environment. It was realised that not only did every contractor need to know their role in the project but also to fully appreciate everyone else's.

The intention was for all stakeholders to work in partnership creating a project community. This approach allowed those involved to participate fully within a structure and encouraged innovation. This was vital to accommodate change and uncertainty and allowed an open working relationship to develop that brought trust, clarity and a keenness to provide pragmatic and practical solutions to problems. Some of the contractors had not worked in a radiological environment before therefore induction and instruction on how to utilise and maintain personal protective equipment was essential. The variety of stakeholders involved mandated flexible management structures and supervision arrangements. However these were combined with concise communication and a clear identification of roles which helped to overcome many cultural and political differences.

During the decommissioning process normal working life had to continue within the rest of the building. Patient care, commercial operations and academic research activities all had to be accommodated without interruption.

This was achieved by
- Out of hours working by project staff
- Communication via regular co-ordination, project, tool box talks and on site meetings
- Inductions for all contractors and also key members of staff working within the building so that there was a common understanding of emergency procedures and working operations. All inductions had a written test as a check of understanding.
- Emergency and business continuity procedures both within the project and external to the project where there were overlaps with other businesses and operations.

3.9 Nuclear New Build

In the UK, the Office for Nuclear Regulation (ONR) and the Environment Agency have together been charged with engaging with a wide range of stakeholders to ensure openness, transparency and inclusive decision making in the lead up to a new generation of nuclear power [23]. This covers the three fundamental elements of nuclear build; namely the design, site and organisation.

In undertaking this responsibility, practice has been guided by a set of key objectives;
- engage early – maximise influence
- identify & resolve issues at the earliest stage

- optimise and standardise specifications for ease of understanding and justification
- alignment with investment decisions
- openness, transparency, including public engagement for trust building and sustainable decisions
- Regulators working 'shoulder to shoulder'

ONR and the Environment Agency have adopted a working practice that represents a "Presumption of Openness" and has committed to;

- openly publishing a much as possible
- full and frank regulatory website
- links to other related websites
- press articles and media discussions
- meetings with NGOs and published outputs
- public comments process including feedback to all comment & enquiries
- engagement with stakeholder groups close to identified nuclear licensed sites

Some of the key lessons learned to date, include the value of 'one stop shop' events and face to face interaction, the joined up regulator approach and early identification and tackling of issues and areas of potential contention. It is found that increased openness works, builds trust, as does the independence of the Regulators. International collaboration helps with credibility of the regulators and the project overall. Finally, careful planning and sufficient resources are crucial to demonstrating professionalism, real and on-going commitment to the engagement process for the duration.

UK Regulators are well on track to deliver their objectives on stakeholder engagement, whilst also demonstrating that they are retaining their important strong independent position from both policy makers and the industry.

4. UK ENGAGEMENT WITH EUROPE

The UK has always seen the value of sharing experience and exchanging experience with the European Community, recognising that the various cultural differences will need to be taken into account. It participated comprehensively in the Nuclear Energy Agency: Villegen Workshop Series (1998, 2001, 2004) [24], where case studies and issues were contributed relating to participation and decision making in regulation of radiation risks in more complex technologies and environments.

This led in 1997, to further UK involvement in Europe with the TRUSTNET Concerted Action Programme [25] supported by EC DG XII, which oversaw 4 workshops between 1997 and 1999 in Paris where developments dissected in detail included the Sizewell B siting public inquiry. The UK served on the steering committee and the output was a "TRUSTNET Framework; A New Perspective on Risk Governance". Both Villigen and TRUSTNET identified engagement and participation as being key to breaking the impasse on many stalled or unpopular developments to introduce and capitalise on technological advances.

TRUSTNET grew into a powerful Network until in 2003 an Action Programme (TRUSTNET IN ACTION or TIA)[26] was supported by EC DG Research as a vehicle for trialling in practice the key learning points from Villigen and TRUSTNET Concerted Action. The basis was to invite exploration and on-going innovation of a selection of live, largely unresolved case studies by a broad audience of stakeholders, experts and mediators and to test the scope for progressing these towards some kind of sustainable inclusive governance. The case studies (dubbed "innovative processes or IPs) were not restricted to issues around RP and were facilitated by the TIA participants, not driven by the latter.

The UK played a key role in steering and managing the project, supplying case studies, leading discussions and engaging in the underpinning synthesis and analysis that developed a robust methodology and framework to aid decision-makers embroiled in contentious and complex technological challenges. The Framework, it can be argued, established the foundations for development the RP Guiding Principles. None of this would have been possible without the long and rich thread of stakeholder engagement and participation in the UK.

5. LINKS WITH ALARA AND RP SAFETY CULTURE

The principle of "Optimisation" has been developed over several decades by the International Commission on Radiological Protection (ICRP). It is often referred to by the acronym ALARA (as low as reasonably achievable); with the caveat "taking economic and social factors into account" becoming more important as time has past. The systematic and structured approach of Stakeholder Engagement, as evidenced by the Case Studies, has become an integral part of the process to ensure that social factors are folded into decision making to make it more effective and sustainable.

Perhaps understandably there has been a tendency to focus on the high profile issues that impact on the public; however, the approach is equally applicable to workplace situations. For example, in an occupational exposure setting there will often need to be a dialogue between radiological protection specialists, the management, workers and other groups, to clarify in terms that each group fully understands, the exact nature of a problem, relevant factors and options (the Case study in section 3.8 is a relevant example). This process is facilitated by all the groups having a common understanding of the business they are in and is often subsumed into normal working arrangements.

If one looks at the development of ALARA and its practical implementation over several decades, one can see the same approach as Stakeholder Engagement, developed from the grass routes upwards in occupational, medical and research exposure situations. This is perhaps best seen through the work of the European ALARA Network (EAN), particularly its annual Workshops and regular Newsletters [27]. For example, one of the conclusions from EAN's 4th Workshop "Managing of Occupational Radiological and Non-Radiological Risks", Antwerp 2000, was "The participation of all concerned stakeholders appears to be a key element in arriving at decisions that are reasonable and receive broad acceptance."

Reading through the papers from the EAN workshops and Newsletters there are constant references to "ALARA culture" and "commitment to ALARA". Whilst the terminology might be different, the underlying approach has significant similarities with that of Stakeholder Engagement. This brings us to "Radiation Protection Culture" which is a relatively new conceptual approach to implementing RP principles, which is still evolving. "IRPA Draft Principles for Establishing a Radiation Protection Culture" is on the IRPA website [28]. The scope of "Radiation Protection Culture" appears to be very broad, and within it Stakeholder Engagement is an important element. Those familiar with the work of the EAN would also recognise many of the approaches to implementing ALARA, within the draft guiding principles. Thus there are clearly large areas of overlap, which we need to be conscious of in developing the respective areas, both to avoid confusion of the various "stakeholders" and to ensure effective meshing with the wider safety culture.

6. EMERGENCY PREPAREDNESS AND RESPONSE

There is a long history in the nuclear sector of emergency planning and interacting with a range of stakeholders. In the early years this revolved around Local Liaison Committees, but over the years this has become part of a much broader and well structured process with Stakeholder Engagement integrated within it. Stakeholder Engagement is not peculiar to radiological protection but is widely used in all areas and has become an essential element within a UK Framework for planning for and responding to all types of emergency. The Civil Contingencies Act 2004, together with the supporting Regulations and Guidance Documents [29] set out a single framework for civil

protection in the UK, They establish a clear set of roles and responsibilities for those involved in emergency preparedness and response at the local level. In particular there is a requirement to establish Local Resilience Fora (LRFs), which are the vehicles through which all the responders and other stakeholders, co-operate and co-ordinate their plans at the local level. The geographical coverage of LRFs are based on the boundaries of Police Forces, and the Police take the lead in the organisation of LRFs. There are corresponding arrangements to ensure co-operation at regional and national level.

In addition for sites where an accident may have off site consequences the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR) [8] apply. These require measures to ensure that members of the public are properly informed and prepared, in advance, about what to do in the unlikely event of a radiation emergency occurring, and provided with information if a radiation emergency actually occurs. This requires dialogue with the Stakeholders.

It is clear that Stakeholder Engagement is seen as crucial to effective emergency preparedness. An associated paper "Stakeholder Engagement in UK Emergency Preparedness and Response" [30] further develops this and looks at the importance of Stakeholder Engagement in responding to emergencies; using the response to the Polonium Incident in London, 2006, as a case study.

7. CONCLUSIONS

In putting together this review of UK experience of Stakeholder Engagement there are a wealth of examples that could have been used: those chosen hopefully provide a good indication of the degree of use. It can be concluded that

- Stakeholder Engagement is well established in the safety, health, environmental ethos and practices of many larger organisations, particularly those linked to government or those with their roots in the nuclear sector.
- But there is always room to improve by learning from the guidance and experience, particularly in smaller and non-nuclear organisations
- More generally work is needed to pursue adoption of the guiding principles at the day to day working level of organisations, as an integral part of building their broader safety culture.

With the recession, it is possible that some Stakeholder Engagement might suffer, but it is suggested that this would be a false economy. Decisions may get made that do not get broader buy-in and therefore may not be sustainable. Whilst vigilance is necessary, the indications are that Stakeholder Engagement in the UK is now so embedded in the culture of most organisations that it is here to stay.

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