

THE DECOMMISSIONING OF NUCLEAR SITES AND THE ECONOMIC DEVELOPMENT OF FRAGILE RURAL COMMUNITIES

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ABSTRACT

This paper discusses the economic development issues of decommissioning nuclear sites located in fragile rural areas. It uses as an example the decommissioning of UKAEA's site at Dounreay in the Highlands of Scotland. The paper gives brief outlines of the economic development infrastructure of Scotland, the economy of Caithness and the Dounreay Site Restoration Plan. It argues that in a changed culture, corporate social responsibility is a core business activity linked to clear business goals and that community investment created through decommissioning can serve as a benchmark of best business practice. The opportunities and challenges are considered under four headings: the decommissioning process; diversifying the local economy; creating a skills based centre of excellence; the global dimensions. If the industry is to gain public acceptability for the high cost of decommissioning it must ensure that the process is used to deliver economic and community benefits that would not otherwise have been achieved.

INTRODUCTION

Typically, major nuclear facilities have been located in sparsely populated rural areas and at the time of their construction, were welcomed by their host communities as sources of much needed, well paid, secure employment. Little, if any, consideration was given to future decommissioning and closure. The future of the nuclear industry seemed secure.

The civil nuclear industry is now a mature industry that is about to pass into a phase where its main function will be to decommission and close its sites, or more euphemistically "to restore the environment". This will present unprecedented challenges to communities and to the development agencies charged with supporting them.

Communities, development agencies and the industry are about to enter into uncharted waters. In the coming two decades many rural communities will be facing the challenges posed by the closure of their main economic driver. But the unique feature of nuclear closure is the long time scale involved, coupled with a short to medium term boost to the economy as the decommissioning project sucks in people and resources. Except for the decommissioning of some relatively small nuclear power plants there are no precedents and no textbook answers. This is truly the cutting edge of economic development.

This paper uses the decommissioning of the United Kingdom Atomic Energy Authority (UKAEA) site at Dounreay, in the Highlands of Scotland, to illustrate the challenges and opportunities posed and how they might be met.

UKAEA DOUNREAY

UKAEA Dounreay was established in the mid nineteen fifties to develop the UK's and the world's first fast breeder reactor with the expectation that the technology would be used to create commercial electricity. Following trials in a small test reactor a prototype was constructed and connected to the national electricity grid.

In 1988 the UK Government announced that the site would be closed and decommissioned. The prototype reactor was shut down in 1994.

UKAEA Dounreay is located on the north coast of Scotland in the county of Caithness. It is situated in a fragile rural economy and on the periphery of the rest of the UK and the European Union. Dounreay is nearer Reykjavik than either London or Brussels and nearer to St John's Newfoundland than the most distant parts of the European Union.

THE ECONOMY OF CAITHNESS

Prior to the Establishment of UKAEA Dounreay

The most northerly county on the mainland of Scotland, Caithness is some 700 miles north of London and 300 miles north of Edinburgh.

The main traditional industries have been fishing and farming. Of these, fishing has declined since its heydays of the late nineteenth century, although white fish and shellfish remained important catches and sources of employment. Farming was primarily confined to the rearing of sheep and beef cattle.

Craft industries and tourism, which was largely hunting and fishing orientated, provided some additional employment.

From a peak level of over 40,000 in the mid nineteenth century the population had declined to 25,000 by the mid twentieth century.

The Effect of Dounreay

In addition to the immediate impact caused by the construction phase, the establishment of UKAEA Dounreay in Caithness provided long-term benefits to the local economy.

The declining trend in population was reversed. Thurso, the town nearest to the site, trebled in size from 3,000 to 9,000 residents. The economy diversified and the continued decline in importance of agriculture and fishing was compensated for by an increase in manufacturing and engineering. Social infrastructure improved in parallel with industrial growth including the construction of a new hospital, the establishment of a technical college to support the demand for industrial training, a new primary school and a new UKAEA owned housing estate. At its peak the site directly employed 2,600 people equivalent to 9% of the population.

ECONOMIC DEVELOPMENT INFRASTRUCTURE IN SCOTLAND

Scotland benefits from a long established and sophisticated economic development infrastructure with control devolved to the Scottish Parliament. An important feature is the integration of assistance for business development with the development of skills and training.

Economic development is delivered through two publicly funded networks. In the north, Highlands & Islands Enterprise (HIE) covers the sparsely populated Highlands and Islands while the rest of Scotland is covered by Scottish Enterprise. As Dounreay is located in the Highlands the responsibility for making a strategic economic response to the closure of the site rests with HIE Network.

Highlands & Islands Enterprise is a statutory body reporting directly to the Minister for Enterprise and Life Long Learning in the Scottish Executive. It delivers its services through ten Local Enterprise Companies (LECs) each of which covers one or more administrative counties. In the case of Dounreay this is Caithness & Sutherland Enterprise.

LECs have permanent professional staff and non-executive Boards whose members are drawn from the business community and political and community leaders.

THE DOUNREAY SITE RESTORATION PLAN

A Brief Outline of the Plan

The Dounreay Site Restoration Plan¹ (DSRP) has a timescale of half a century, requires the integration of some 1,500 separate but inter-dependent activities, and is expected in total to cost in the region of £4.3bn (\$6.2bn). It contains some projects which are the most technically challenging in the UK.

Decommissioning activities will fall into five consecutive time periods, each of some 10 to 15 years duration.

- **Period 1:** A period of intense construction activity. Up to twenty new plants will be needed for waste treatment and the processing of nuclear materials and a number of existing plants will be upgraded. Decommissioning work will continue on existing redundant facilities.
- **Period 2:** Waste will be retrieved from the shaft and silo and the processing of remaining nuclear materials completed. Decommissioning of fuel and waste processing plants will commence as they complete operations.
- **Period 3:** Fuel processing and handling plants will be decommissioned and work started to decommission high level waste treatment and storage facilities.
- **Period 4:** The decommissioning of all three nuclear reactors will be completed and ongoing decommissioning of redundant waste facilities will continue. Post operational clean out will get underway.
- **Period 5:** All redundant facilities will be dismantled. Wastes will have been immobilised and placed in purpose built facilities. The remediation of contaminated ground will be completed. Major areas of the site will be suitable for delicensing.

The DSRP is given in full on the UKAEA's web site at www.ukaea.org.uk.

From the Stakeholder's Perspective

UKAEA's Mission Statement is: *"To restore the environment of our sites in a way which is: safe and secure, environmentally responsible, value for money and publicly acceptable"*. These concepts are not unique and will be shared, in one form or another, with the missions of all responsible site operators.

No stakeholder will argue against the need to decommission a nuclear site in a manner that is safe, environmentally friendly and gives value for money to the taxpayer. But what does public acceptability mean?

In the past the nuclear industry has interpreted public acceptability merely as an extension to the core concepts of safety, environment and value. That may be valid for operational sites that are contributing to local economies through wages and salaries and operational costs, but once the site moves into decommissioning phase that premise no longer holds good.

Is it publicly acceptable for a site to be decommissioned without serious consideration being given to the sustainable development of the economy it has helped to build? Is it publicly acceptable for large contractors and their shareholders to benefit from the closure of the main economic driver of the local economy without contributing to the diversification of that economy? The answer to both these questions must clearly be "no".

There are benefits for site operators if they adopt a more active economic development role. The public will find the huge price tag on decommissioning more acceptable if it secures benefits that would not have been otherwise achieved, over and above the mere restoration of the site at some future distant time.

Gaining public acceptability for the cost of decommissioning is not the same as achieving value for money on individual contracts. To gain public acceptability site operators must take a more active role in securing economic and community benefits.

THE CHANGING CULTURE OF SOCIAL RESPONSIBILITY AND CORPORATE CITIZENSHIP

The relationship between communities and businesses has changed subtly but significantly. The paternalistic culture, in which the businesses donated largesse and the community sought handouts, has gone.

We have moved away from the idea that community investment is a peripheral activity to a more strategic approach where corporate social responsibility is seen as a core business activity linked to clear business goals. Communities can no longer accept corporate investment as an expectation without giving something back to business by adding value to its activities.

The challenge is to ensure that the input of the business sector is harnessed in the most productive way – to give a win-win situation for both business and communities.

The way in which site operators and their major contractors decommissioning nuclear sites organise their activities, so that they achieve their own objectives while enhancing the local economy, can serve as a model of best practice for business community investment.

THE STRATEGIC ECONOMIC DEVELOPMENT OBJECTIVE

It is essential that communities and development agencies have a clear view of their overall objective. This requires a long-term view. The one predictable fact is that the site will be closed or at best its contribution to the local economy severely reduced. The decommissioning process must be used to create alternative economic drivers to sustain the future economy.

This objective must be kept clearly in mind and all actions judged on the contribution that they make to achieve long term sustainable development.

For example, many local businesses will focus on the short to medium term contracts emanating from the site and will see these as lucrative sources of income. But that is a finite process; when the site is closed there will be no more contracts. The most important issue is not the winning of the contract but using the contract to expand the capability and capacity of the business so that it can compete successfully in wider markets.

THE EXAMPLE OF UKAEA DOUNREAY AND THE HIGHLANDS AND ISLANDS OF SCOTLAND

I will use the example of the decommissioning of UKAEA Dounreay and the Highlands and Islands of Scotland to illustrate the issues that are created in the local economy. I suggest that these will not be unique to the Dounreay situation and that in the coming decades other fragile rural areas will have to face up to similar situations.

I will consider the opportunities and challenges under the following headings:

- The decommissioning process
- Diversifying the local economy
- Creating a skills based centre of excellence
- The global dimensions

THE DECOMMISSIONING PROCESS

The challenge for Highlands and Islands businesses

With a few exceptions, businesses in the Highlands and Islands of Scotland fall into the small or medium sized categories. Some businesses already supply specialist and general engineering services to UKAEA and others supply civil engineering and general maintenance services. However, these businesses are in the minority. Relatively few local businesses are capable of undertaking decommissioning contracts in excess of £1m (\$1.5m) in their own right.

The challenge is: how can indigenous businesses gain benefit from the decommissioning process and increase their ability to tender for larger contracts while gaining credentials to establish themselves in the wider market?

The key strategic objective must be to develop and diversify indigenous businesses so that they can compete in the wider market. For them merely to act as sub contractors will have only short-term benefits and leave them and their workforces vulnerable when work from the nuclear site declines.

The local market

It is essential that businesses identify their local market. There is a strong tendency for business people to refer to the generic term “Dounreay”. This equates UKAEA as an entity with the site, indicates a mind set that sees UKAEA as the sole source of work and shows a lack of understanding of the sophisticated business infrastructure of the site.

Unless businesses have a clear understanding of the contracting dynamics of the site they will fail to focus effectively on their best markets. They will lose income streams and development opportunities and this will lead to frustration with what is seen as “the system”. It is then a short step to disillusionment and a belief that obstacles are deliberately placed in front of local businesses, which then becomes a self-fulfilling prophecy.

The market for decommissioning contracts at Dounreay falls into three distinct categories:

UKAEA

As site operators UKAEA will be the primary source of contracts. However, where the decommissioning work is concerned, as opposed to site operation and maintenance, contracts will tend to be for major projects or for sophisticated studies. Such contracts will require a combination of technical ability, financial resource and stability and specialist knowledge. Our experience in the Highlands of Scotland is that the majority of these contracts will go to businesses located outside the area and often to major international conglomerates.

MAJOR INTERNATIONAL CONTRACTORS

If we look at any major nuclear decommissioning programme anywhere in the world we will find that in every case contractors from a small pool of five to ten global companies will be involved and will be taking the primary lead in the decommissioning. These companies will form the primary market for local businesses.

In the Highlands of Scotland the challenge is that none of these companies are Scottish based and only one or two of them UK based. There is, thus, a risk that they will have little knowledge of the capability of our businesses.

To maximize profitability it will be in the interests of external contractors to use local contractors to provide labour and services. However, too often local businesses can have an unrealistic view of their own capabilities and will see incoming contractors as a competitive threat rather than as a market for their services.

Unless indigenous businesses recognise this important market as such there is a real danger that external contractors will sub contract to other external contractors already known to them.

MEDIUM AND SMALL SIZED CONTRACTORS

Most businesses in the Highland Region will fall into this category and many will have seen each other as traditional competitors. That view must be put aside. Rather than competing with each other, regional businesses must look for ways of complementing skills and knowledge to enable them to bid for work together in partnership, in alliances or through joint ventures.

The role of development agencies in the market

The efficient, reliable and creditable flow of information will do much to ensure that local businesses participate fully in the decommissioning process. This information will be not only about contracts but also about the capability of local businesses and the requirements of UKAEA and its major contractors. It will be a two-way flow and development agencies can play a significant role in ensuring the dissemination of information.

UKAEA CONTRACTS BULLETIN

UKAEA has in place systems for advertising contracts and seeking expressions of interest. This is based on a quarterly printed bulletin supplemented by a web site which is updated regularly to detail progress on individual contracts. The system is well established and known to most contractors. The development

agency's role is limited to regular monitoring and bringing information to the attention of potential contractors and advising them on contracting protocols.

NON-UKAEA CONTRACTS

At the present time there is no mechanism for co-ordinating contracts or sub contracts from non-UKAEA sources. There is an important role here for the development agency to collate this information and to disseminate it to potential users. The obvious medium is a web site. The value and efficiency of such a system will depend on the co-operation of private sector businesses and their willingness to release information. Major companies will benefit from the increased competition created by a larger pool of potential sub-contractors and smaller companies from greater awareness of opportunities.

BUSINESS INTELLIGENCE

Through its network of Local Enterprise Companies the HIE Network has detailed information about the businesses operating in its area. Likewise, most external contractors coming into the region liaise with LECs on business development and training assistance. This gives the Network a unique opportunity to act as an intermediary for the benefit of both contractors and local businesses.

Increasing the capability and capacity of local businesses

The decommissioning process is finite. Sustainable businesses that can survive the closure of the nuclear site will be created only if the decommissioning process is used to increase the capability and capacity of businesses to enable them to service wider markets.

In the short term there will be a requirement for labour and construction skills that can be supplied from the local workforce. However, these resources are not exportable as it will always be cheaper to supply them from local markets.

To be successful in the wider market businesses must offer specialist services that are easily exported. They must, therefore, evolve from providers of basic services to become:

- Equipment designers and builders
- Project managers
- Specialist skills providers
- Trainers
- Supervising engineers
- Consultants

This will be achieved only through the vision and strategic planning of business managers and the use of innovative alliances with major contractors. It requires long-term commitment and must be a priority objective from the outset of the business's involvement in decommissioning.

Servicing the supply chain

The decommissioning of the Dounreay site will create a demand for materials, artefacts and commodities; for example, there will be a requirement for many thousands of stainless steel storage drums. Few of these items are currently supplied from or manufactured in the Highlands and Islands

The absence of local suppliers creates an opportunity for existing businesses to expand or for the creation of new businesses through inward investment or local entrepreneurial activity. The advantage for Highland businesses is that much of this work does not require sophisticated new processes and can be undertaken by adapting existing manufacturing processes.

As with decommissioning contracts, identifying the source of contracts is important, as often this will not be UKAEA itself but other contractors such as the site facilities manager. A potential obstacle is the existing contracting process especially where supplies are obtained on national contracts rather than site contracts. To encourage new entrants into the market place longer term contracts may have to be let to justify new capital investment.

The contracting process

How a site operator contracts with its major contractors will have a profound effect on the ability of development agencies to achieve their own objectives. It has the potential to influence not only business development, but also the development of skills and training, inward investment, the employment of local people, the transfer of skills and technology and the servicing of the supply chain.

But the contracting process does not exist in a vacuum. In Scotland, UKAEA must take account of not only UK company law and practice but also European Union regulations controlling state aids to ensure a competitive market place within the Union. It is also constrained by the conditions applied by Parliament when it approved the funding for the decommissioning. Other or similar constraints will operate in other countries.

If site operators are to gain public acceptability of the cost of the decommissioning project, then within the constraints placed upon them, they must use the contracting process creatively to support economic development objectives. This will require commitment to and an understanding of the development requirements of the region. Contracts must contain economic development targets backed by financial rewards for achievement.

DIVERSIFYING THE LOCAL ECONOMY

The need to diversify

Over the last four decades the local economy has benefited from a disproportionate input from UKAEA Dounreay. With up to 2,600 direct employees at its peak it dominated the labour market and enabled communities and businesses to prosper.

UKAEA was established at Dounreay through a political decision and it is unlikely that a similar decision will be made in the future to locate so many jobs in the area.

Thus, as part of the economic response to the DSRP, it is essential that the local economy be strengthened by establishing a wider range of types and sizes of businesses.

Inward investment

Inward investment is a very competitive market but opportunities will be created through a number of routes:

- **The supply chain:** there will be opportunities to establish manufacturing facilities to meet the needs of UKAEA and major contractors

- **Primary contractors:** many primary contractors will be multi-sectoral businesses who will be developing projects outside the nuclear industry. Relationships built with such contractors will identify potential projects and enable bids to be made to locate them in the HIE area
- **Academic and research facilities:** the expertise located at such facilities built through collaboration with industry will be exploited to attract other collaborative ventures
- **Specialist skills base:** the engineering and scientific skills and knowledge concentrated in the area for decommissioning work will provide a valuable resource for incoming projects requiring similar skills
- **Traditional routes:** partnership with agencies such as Scottish Development International and the use of other traditional routes to attract a wide range of inward investment including that from the service sector will continue

Indigenous business growth

The creation of new businesses and the growth of existing businesses are vital for the long term sustainable development of the local economy and will be essential if it is to diversify away from reliance on Dounreay generated employment.

Assisting the growth of businesses is a major theme of the HIE Network's strategy and will continue to be so. It will do this by:

- Continuing to assist with the development and delivery of training for both management and vocational skills
- Assisting with the establishment of new businesses through the provision of business information, advice and financial support
- Assisting with the growth of existing businesses
- Providing competitive business locations

A SKILLS BASED CENTRE OF EXCELLENCE

Underlying our ability to take advantage of business opportunities is the assumption that we have a qualified and well trained workforce. Without that the opportunities will go begging.

Our single most important challenge is to ensure that the people of our region, whether employed or seeking employment, have access to the training and knowledge that will enable them, and the businesses for which they work, to take full advantage of the opportunities decommissioning offers.

The opportunity

Decommissioning, other than for nuclear power plants, as an industry in its own right is evolving. But, under pressure from regulators, planners and stakeholders it is an industry which can expect to expand rapidly in the next decades.

Based on the demand for qualifications and skills that will be generated by the decommissioning of UKAEA Dounreay, there are opportunities for Highlands and Islands based institutions and businesses to establish capabilities that will also enable them to service a global demand.

Opportunities will exist to:

- Develop and deliver academic qualifications
- Develop and deliver vocational qualifications
- Deliver generic qualifications and skills for the non nuclear decommissioning market
- Develop research capabilities based on specific decommissioning processes

Academic qualifications

Within the European Union there is a steady decline in the number of undergraduates taking nuclear science and engineering based courses and the number and nature of such courses being offered by universities.

Although not yet designated as a university the University of the Highlands and Islands Millennium Institute (UHIMI) has been designated a provider of higher education. It is now possible for it to collaborate, both nationally and internationally, with other institutions and universities to develop and deliver nuclear science and engineering courses and qualifications.

There are opportunities for UHIMI to develop courses and qualifications in specialist areas that will be required for decommissioning. This could include such subjects as:

- Integrated project management
- Specialist costing regimes
- Risk assessment and safety justification
- Environmental remediation

All of which could be delivered to a wider market and help to establish UHIMI as a leader in this field.

The decommissioning will create viable career opportunities for HIE Area school leavers. They will create a demand for degree level courses in subjects such as chemical, electrical and civil engineering that could be delivered by UHIMI, if necessary in partnership with other institutions. This will also assist UHIMI to attract students into the area and to add value to its activities by retaining people in the area by providing continuing professional development opportunities.

The Highlands & Islands Enterprise Network will work closely with UHIMI and its constituent colleges to aid the development of an academic portfolio that will serve the needs of the area's residents.

Vocational qualifications for nuclear decommissioning

A shared concern of site operators, regulators and stakeholders is the need to ensure operatives have the necessary skills and knowledge to work safely on a nuclear site.

While it is essential that workers and their employers are able to satisfactorily demonstrate their ability to work on site without compromising safety, a heavily bureaucratic system is expensive to administer, deters small businesses from bidding for decommissioning contracts and discriminates against the unemployed.

Many of the problems associated with this issue can be overcome by making available:

- A standard electronically based process for assessing existing competency - an "e-assessment" system
- A qualification demonstrating possession of basic knowledge of site safety and working practices - a "passport" scheme
- A national accredited and trans-nationally recognised vocational qualification in decommissioning skills

The demand for skills for the decommissioning of UKAEA Dounreay creates an opportunity for training providers to develop and deliver courses leading to these qualifications.

As these courses and qualifications lend themselves to electronic delivery there are further opportunities for them to be delivered to the global market when linked to Access to Assessment for foreign verifiers and assessors. The exploitation of both the home and foreign markets will create permanent employment in the HIE Area at an estimated rate of 1 full time equivalent job per 40 students.

Additionally there will be an opportunity to develop and deliver vocational qualifications in specialist areas such as radiological protection assessment and monitoring, health physics and project management.

There is an opportunity for the HIE Area to be recognised as the leading centre for developing and delivering vocational qualifications for nuclear decommissioning.

Vocational qualifications for non-nuclear decommissioning

The decommissioning of nuclear sites can be seen as a specialist discipline within the broader subject of the decommissioning of industrial sites in general. As such it will share with the rest of industry generic skills, practices and knowledge that will relate to the decommissioning of any industrial site.

This cross-sectoral foundation will enable training providers to diversify away from reliance on nuclear qualifications by developing and delivering courses and qualifications for other industries.

Application development and research opportunities

The technologies necessary for dismantling nuclear power plants can be considered as being at a mature industrial stage. Thus much of the process of decommissioning UKAEA Dounreay will involve the use of existing scientific and engineering skills and knowledge. However, a report issued by EURELECTRIC² in June 2000 identified that application development and research is necessary in the following areas:

- Decontamination technologies: chemical, electrical, mechanical, ultrasonic
- Dismantling technologies: cutting
- Improvement of waste volume minimisation
- Non-metallic material recycling
- Control and measurement techniques
- Remote operation

These industry identified opportunities, coupled with the requirement to establish trials facilities and the need to develop special techniques in some areas at Dounreay, will give UHIMI the opportunity to develop research capabilities.

The Environmental Research Institute at Thurso is building a growing reputation and provides a focal point for further development particularly in environmental investigation and remediation.

A number of principle contractors have established relationships with academic institutions elsewhere in the world and will be sympathetic to working with UHIMI to develop its own capability.

There is an opportunity for UHIMI to establish a professorial chair within a School of Decommissioning and Environmental. This will enable UHIMI to link its own academic needs to those of industry and will assist the HIE Network in attracting inward investment.

THE EUROPEAN AND GLOBAL DIMENSIONS

The globalisation of nuclear decommissioning

“By any standards this is a huge global business and demands a global approach”

John McKeown
Chief Executive, UKAEA

The high level of financial and technical resources needed to decommission nuclear sites, often coupled with the safety concerns of neighbouring states, has created an environment in which any proposal to decommission a site is subject to international scrutiny. In this environment the decommissioning of UKAEA Dounreay will be influenced by international factors and it, itself, will influence the decommissioning of other sites.

But just as the technical and safety aspects of nuclear decommissioning are global, so are the effects that decommissioning has on the economies of the fragile rural areas in which nuclear sites are so often located.

It is equally important that communities learn from each other on a global basis to maximise the economic benefits of decommissioning and to establish best practice, as it is for site operators and contractors to find global solutions to technical issues. This is made more so by the fact that in many cases communities will be dealing with the same contractors, wherever they are located.

Prioritising co-operation with communities globally

Because of Scotland's position within the European Union and the HIE Network's established reputation as a leading European development agency, the first priority for trans-national partnership will be with other communities within the European Union, the candidate countries and ex USSR countries. The second priority will be communities in North America, because of the high profile that contractors from that region will have in European decommissioning projects.

The priorities of trans-national co-operation

There will be opportunity to cooperate with other communities through the following means:

- By building trans-national partnerships
- By seeking trans-national recognition of vocational qualifications
- By establishing an international conference
- By establishing a resource centre

Trans-national partnerships

There is no mechanism for communities to share experiences of the effects of decommissioning on their economies. Similar communities will be identified and partnerships established to pilot a methodology by which experiences can be shared and best practice established. This will be achieved by:

- Participating in the INTERREG IIIc Community Initiative. INTERREG is part of the European Union's regional policy. It seeks to promote trans-national co-operation and partnership between communities with similar characteristics.
- Participating through the PHARE programme. The PHARE initiative was launched in 1989 following the collapse of the communist regimes in central and eastern Europe. It is intended to help those countries reconstruct their economies. Part of the funding is directed at assisting the decommissioning of nuclear facilities and supporting communities whose economies are dependent on those facilities.
- Participating through the TACIS programme. The TACIS Programme is a European Union initiative which provides grant finance for know-how to foster the development of market economies and democratic societies in the New Independent States of the former USSR and in Mongolia. Part of the programme is directed towards assistance with the decommissioning of nuclear sites.
- Researching the possibility of establishing a pilot programme focused on decommissioning situations in fragile rural communities

Trans-national recognition of vocational qualifications

The recognition of qualifications, particularly of vocational qualifications, is an important issue for site operators, employers, employee and unemployed workers

The globalisation of the decommissioning market will mean that projects will be completed through the use of a mixture of national and foreign resources. Assessing the ability of professionals and workers from different countries could pose problems for both site operators and employers. For example, there is evidence of confusion in Europe of the standing of Scottish Vocational Qualifications (SVQ) as against UK wide National Vocational Qualifications (NVQ).

For academic qualifications the European Credit Transfer System (ECTS) is used to facilitate the recognition of undergraduate and post-graduate qualifications. There is no equivalent to ECTS for vocational and other work based qualifications.

Because accreditation procedures are structured on a national basis it is unlikely that acceptable internationally recognised accreditation bodies can be established. Therefore, it is important that a mechanism can be agreed that will enable site operators and employers to easily recognise the standing of vocational qualifications offered by prospective employees. This will offer the following benefits:

- Enable site operators to satisfy site safety requirements
- Enable foreign employers to assess the skills of prospective employees
- Enable prospective employees to understand the requirements of employers
- Improve the mobility of labour, a cornerstone of European Union policy

Establishing an international conference

There are a number of established conferences that meet on a global basis to consider aspects of safety and the technical issues of nuclear decommissioning. There are no fora for discussing the economic and social issues that are raised by decommissioning projects.

As the number of such projects will increase over the next decade there is an opportunity to initiate an international conference focused on economic and social issues. In Europe the European Association of Development Agencies (EURADA) can play a lead role in establishing such a conference.

European resource centre

Communities facing major decommissioning programmes and the agencies designated to assist them are working in an information vacuum. Sources of knowledge and experience are fragmented resulting in duplication of effort, wasting of scarce resources and weak responses to situations. In the European Union there is a danger that isolated communities benefiting from structural funds programmes could duplicate spending on similar independent programmes. Conversely, the “industry” is well informed, co-ordinated and able to take advantage of situations from positions of strength.

The establishment of a Resource Centre will:

- Identify major nuclear decommissioning projects and the affected communities
- Provide a mechanism for the exchange of information and experience
- Facilitate trans-national networking
- Act as a repository for studies and documents
- Result in the more efficient use of resources and avoid duplication, particularly within shared programmes in the European Union
- Give guidance on sources of information on technical issues

CONCLUSIONS

Globally the civil nuclear industry is moving into a period when the decommissioning of sites will become a priority in many countries. This will create significant challenges and opportunities for the fragile rural economies that host nuclear facilities to be decommissioned.

Opportunities for developing a sustainable economy that will be viable after the closure of nuclear sites will be created through:

- The decommissioning process itself
- Diversifying the local economy
- Creating a skills based centre of excellence
- Exploiting the global dimensions of decommissioning

The scale of the challenge means, that if real benefits are to accrue to local economies, it is essential that site operators, public sector agencies and the private sector form effective partnerships to exploit the opportunities. In particular site operators must recognise the fundamental change in status between an operational site and one that is moving into the decommissioning phase. There is an imperative for them to understand local economic development issues and how their actions impinge on those issues. This may require them to acquire economic development skills as part of their core management function. If

site operators are to gain public acceptability of the high cost of decommissioning they must demonstrate that while they are achieving their own objectives they are adding value to the local community.

FOOTNOTES

¹ UKAEA: Planning the Future: *A Summary of The Dounreay Site Restoration Plan* October 2000

² Union of the Electricity Industry – EURELECTRIC - 2000-116-0004: Decommissioning Nuclear Power Plants and Related Waste

³ UKAEA TODAY May 2001