

## **The Uranium Industry and the Protest Movements**

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### **ABSTRACT**

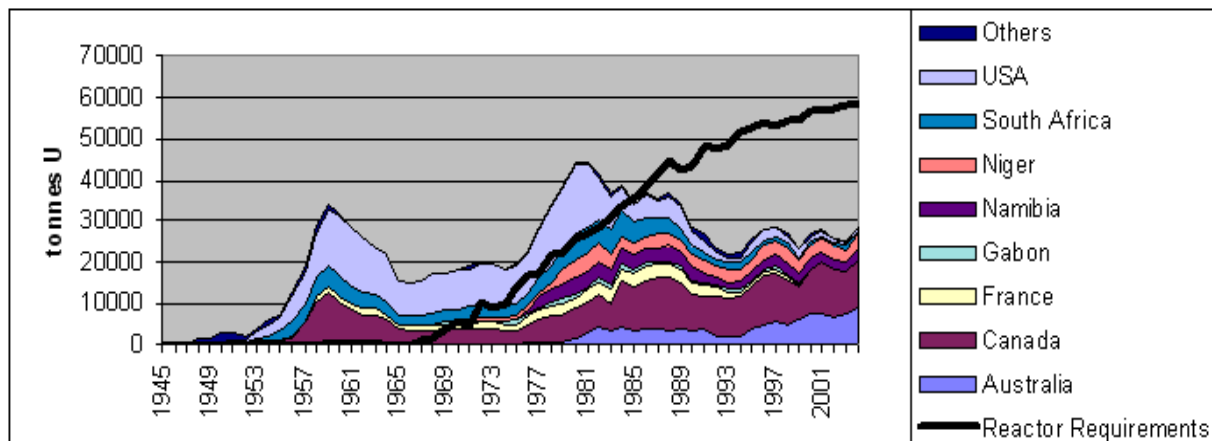
While the uranium industry is in renaissance, so are the protest and resistance movements. These are having significant impacts on uranium resource and nuclear power development. Using cases in North America and elsewhere, the protest activities are described including the key items of the protest focus, and how the groups skilfully communicate their message. This paper focuses on the effect the protests are having on the location, timing and technology of resource development as well as outlining some effective methods of counteracting what is essentially erroneous and misleading information. Recent examples of successful public information and co-operative programs leading to public acceptance of uranium resource development are described.

### **INTRODUCTION**

Uranium has been recovered from mineral resources around the world for over 70 years. While the initial interest centred on the production of radium from uranium mineral concentrate in the 1930's, military requirements resulted in the first "boom" in the uranium mining industry beginning in the early 50's. Uranium was produced in many countries but the United States, Canada and the former Soviet Bloc countries produced the largest amounts.

The boom was followed by a "bust" in the late 60's when military requirements diminished, only to be followed with another boom and bust cycle in the 70's and 80's which accompanied the demand for fuel for nuclear power plants (NPP) and the cooling off of the ordering and construction of NPP's world wide. The widespread concerns over the safety of nuclear power following the Three Mile Island incident in the United States and the Chernobyl accident in the Ukraine greatly dampened the interest in new nuclear power and the demand for and the price of uranium dropped to historical lows and exploration for new resources dried up. Only those mines and in-situ recovery (ISR) mines with permits in place, good resources and low costs survived.

Historical production of uranium in the western world is shown in Figure 1.



**Figure 1: Western World Uranium Production 1945-2004<sup>1</sup>**

The earliest mining practices included minimal environmental and radiation protection for workers. However based on evidence of environmental and health effects – especially the increase in lung cancer of underground miners arising from exposure to radon and its decay products, industrial practices were dramatically improved, particularly in the ventilation of underground mine workings as well as management and disposal of wastes. A modern uranium open pit or underground mining facility or ISR facility can demonstrate low health risks to workers and the general public and eliminate any significant long term legacies.

### THE NEED FOR ADDITIONAL RESOURCES

As shown in Figure 1, the production of uranium had fallen well short of reactor fuel supply needs. This shortfall was made up by reduction of uranium stockpiles and the conversion of weapons materials to reactor fuel. The combination of the reduction of these fuel sources and the projected 50% worldwide increase in nuclear reactor installations led to a spike in uranium prices to over \$120 US/lb U<sub>3</sub>O<sub>8</sub> (\$224/kg U), a historical high even including inflation. However, prices have since declined to a “spot price” of \$50/lb U<sub>3</sub>O<sub>8</sub> (\$130/kg).

The increased demand and sustaining good value of the uranium concentrate led to yet another exploration boom with over 500 exploration and mining companies listed in 2007 on major worldwide stock exchanges as having uranium as the principle target.

### THE PROTEST OPPOSITION

<sup>1</sup> World Uranium Mining, World Nuclear Association, 2008

WM2009 Conference, March 1-5, 2009, Phoenix, AZ

The expansion of the search for and the development of new uranium resources also resulted in a major increase in public opposition to uranium resource development. This opposition has been manifested by information provided to local groups by highly motivated national and international groups and dedicated advocates warning of the dangers of mine and resource development as well as nuclear energy. Energetic anti-uranium mining groups have arisen around the world but are particularly noticeable in Canada, United States and Australia – three countries with a significant uranium mining history and proven, economic uranium resources.

The anti-uranium mining groups are typically composed of determined, passionate citizens who firmly believe in their cause, are efficiently organised to distribute their message and typically use well-spoken advocates (alleged to be “experts”) to support their cause. There are many national and local organisations that oppose uranium mining and the use of nuclear energy, e.g., in the United States, the Sierra Club is a national group with international linkages while groups such as CARD (Coloradans Against Resource Destruction), focus on local issues which usually surround exploration and potential resource development.

The key strategy used by the opposition groups is magnification of fear focusing on the following:

- (i) Spread of radioactivity resulting in health effects

Allegations range from radiation poisoned water and land to clouds of radon wafting over communities. The results of health effects in poorly-ventilated historical mines are typically magnified and incorrectly argued to apply to modern mines. The suggestions that mine waste – both tailings and waste rock cannot be safely managed are often presented. It is commonly stated that there is no safe level of exposure to radioactivity, and therefore any incremental exposure, no matter how small from uranium resource development, must be avoided.

- (ii) Safety issues concerning nuclear power

Chernobyl and Three Mile Island incidents are often used as examples and factual accounts of the impacts are typically extrapolated and magnified.

- (iii) Disposal of spent nuclear fuel

The half lives of long-lived fission products are typically used to illustrate that spent fuel would have to be isolated for 100's of thousands of years.

- (iv) Proliferation of nuclear weapons

Advocate groups frequently allege that all uranium concentrate production results in some use for weapons.

(v) Depleted uranium use by military

There are widespread allegations that the use of U<sup>235</sup>-depleted uranium in military ordinance has resulted in sustained, negative health and environmental effects.

Although many, if not all, of the frightening positions held by the protesters and distributed to the public can be refuted by credible scientific evidence, the anti-uranium resource development movement has been having significant effects. These effects have been manifested by the restriction of access to uranium resources in many countries, the application of restrictive permitting regimes and extremely long development lead times. These hurdles are particularly challenging in European countries, and various states and provinces of Australia, United States and Canada. As an example in Canada, in jurisdictions where uranium resources are known:

- 2 provinces: British Columbia, Nova Scotia – long term moratoria in effect
- 2 provinces: Ontario and Quebec, widespread locally-based opposition resulting in a large number of local jurisdictions passing motions to ban uranium exploration and mining
- 1 province: Alberta: resource development not being considered because of local peoples' concerns and demands
- 1 province: Newfoundland and Labrador – 3 year moratorium by local aboriginal government
- 1 territory: sector ban on uranium exploration

However, in the Canadian province of Saskatchewan, uranium mining and resource development continues with the support of 80% of the local population according to recent surveys.<sup>2</sup> In addition, in a second Territory – Nunavut, a proposed uranium mine project is moving forward to feasibility and environmental assessment with the cautious support of the local aboriginal organisations and the Territorial Government.

The political restrictions and protest movements are having an impact on uranium resource development in Canada, United States and Australia. Exploration and resource development has expanded in countries with developing economies such as Kazakhstan, Namibia and Niger. Although the resource grades in these locations are low by Canadian or Australian standards, development is proceeding under the management of international mining companies that operate with exemplary environmental standards – e.g. Rio Tinto, Areva and Cameco. It recently was reported in the press<sup>3</sup> that Niger will become the second largest uranium producer in a few years (after Kazakhstan), surpassing Australia and Canada.

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<sup>2</sup> “Working with our Communities”, [www.arevaresources.com/communities/index.html](http://www.arevaresources.com/communities/index.html)

<sup>3</sup> “Uranium’s Next Frontier”, Toronto Globe and Mail, February 9, 2009

## REASONS FOR PROTEST EFFECTIVENESS

There are several apparent reasons why the groups and individuals opposed to uranium opposition are so effective:

- The relative ease of exploitation of the fear of radioactivity using exaggerated claims, irrelevant associations, and use of modern communication techniques. A person may be more easily frightened than reassured when it comes to risk to health by unseen agents.
- The anti-uranium protest groups have adopted effective techniques from other issue-concerned and political groups and are effective in getting their message out by:
  - Creating media situations – e.g. blocking public facilities
  - Focussed political pressure – emails, phone calls – “phones ringing off the hook”<sup>4</sup>
  - Fundraisers including well known personalities
  - Exploitation of land tenure and ecological issues
- Mining has a poor public image, and uranium mining even more so. Anecdotal and pictorial evidence is readily available to lend support to exaggerated claims. Intuitively it is understandable that few would tolerate a uranium mine their back yard (NIMBY);
- A general public misunderstanding of the concept of environmental and health risk. If, as is alleged by the anti-uranium groups, there is no safe level of radiation exposure, then all components of the nuclear fuel cycle would not meet public acceptability;
- Absence of independent, committed scientists and spokespersons who are prepared to provide evidence that uranium resource development is indeed an acceptable activity. If a small fraction of the public is passionate, organised and persistent in opposing uranium resource development, while an equally small, passionate and knowledgeable collection of scientific and technical people are not willing to speak up and provide credible counter evidence, then it is hardly surprising that the public representing 95% of adults would err on the side of caution and adopt the anti-uranium resource development strategy

There are probably other reasons why a generally well educated public would buy into positions that are not backed by scientific and factual evidence. One reason might be what could be termed a “Culture of Individuality”. This culture suggests that experienced experts and those with aligned motives, such as a commercial objective, should not be trusted or believed. This might explain the contradiction that in the United States, a country with the highest developed scientific

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<sup>4</sup> Personal Communication, Kingston Ontario, City Councillor to G. Feasby March 2008

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and technical communities (60% of Nobel prizes in science) has a majority of the population that does not believe in Evolution of the Species.

There is also the culture of “counter-knowledge entrepreneurs”.<sup>5</sup> Thompson (2008) observes: “*These are dedicated persons who may or may not believe all of their claims, but have an instinctive understanding of how social epidemics work*”. These individuals successfully exploit the public’s fear of radioactivity and the press and media frequently pick up these concerns. Each country with a long history of uranium mining and peaceful use of nuclear energy seems to have their share of sector specific counter-knowledge entrepreneurs, a few of whom have made anti-uranium and anti-nuclear their life’s work.

## **APPROACHES IN OBTAINING A SOCIAL LICENSE TO DEVELOP URANIUM RESOURCES**

Uranium has been mined in Canada for over 70 years. Although as in Canada and elsewhere, early mines were developed in the relative absence of environmental and social guidelines, it can be concluded that current exploration and mine development meets the highest safety and environmental standards at most locations. In spite of this, no exploration or development can typically take place without the support of local people – the social license. Some success has been achieved in obtaining the social license by undertaking the following:

1. Conducting extensive consultations with local people, before and during exploration. Even though well-managed exploration activities can be shown to present negligible risk of radiation exposure to people and to the local ecology, full discussion and transparency is needed.
2. Providing local peoples’ access to independent, credible spokespersons who can explain the low risk associated with a well managed uranium development. The spokespersons should include scientific and technical representatives as well as persons who live and work in the area of operating and closed uranium mine facilities.
3. Avoiding populated areas and sensitive land-use areas for exploration and potential development activities.
4. Providing access by potentially concerned citizens to operating uranium mine or ISR (in situ recovery) facilities as well as closed facilities.
5. Assuring adequate financing, management and technical support. Successful uranium exploration and development activities are typically well funded and allow for long consultation, environmental assessment and engineering feasibility times. As has been shown in the Canadian situation, speculative activities can result in significant public opposition with industry wide implications.

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<sup>5</sup> Thompson, Damien; 2008, Counterknowledge – How we surrendered to conspiracy theories, quack medicine, bogus science and fake history

## **CONCLUSION**

The price and demand for uranium for reactor fuel have recently increased and are expected to remain robust with the shift to nuclear energy in the world. However, the expansion in the development of new uranium resources has been hampered by the evolution of anti-uranium mining and recovery protests. The effectiveness of these protests has resulted in the raising of development barriers in traditional uranium-producing countries such as United States, Australia and Canada. This has resulted in some known uranium resources effectively being declared “off limits”. Uranium production by conventional mining and ISR technologies is being shifted to developing economies where political restrictions and public opposition appear relatively limited, at least at present.

There are effective ways of avoiding the effects of an ill-informed anti-uranium protest movements or interventions. A key component of success is the intervention of credible, independent experts and experienced citizens in countering the fear of a very small release of radioactivity from a uranium resource development.