A.I.M. Liege
Centrales electriques
modernes - 1981

THE URANIUM MARKET PROSPECT

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SUMMARY

When the prospects for the uranium market are evaluated in 1981 it is difficult to do so without placing a great deal of weight on current circumstances. Falling spot prices, relatively large inventory levels and a projected oversupply of uranium have a tendency to make the market prospects a simple extrapolation of the present situation. The purpose of this paper is to show that the prospects for the uranium market instead depend very much on what is done today, and that what is done today depends very much on current circumstances.

An historical analysis of the uranium market points out the cyclical nature of the market and suggests that the spot price, exploration levels, and mill capacity utilization rate are dependent on economic factors. An examination of the current uranium market suggests that the effects of the forecasted surplus supply, the diminishing returns in exploration and the long lead times and high costs of development may mean that future production levels are uncertain. The general prospects for the uranium industry are also uncertain because of barriers to trade, environmental regulations and public opinion.

A worse case scenario shows clearly the results of producers and consumers not being aware of the effects of present decisions. The paper concludes that by the use of long term contracts, appropriate inventory policies and greater discussion between producers and consumers the prospects for the uranium market can be made more certain and further imbalances in demand and supply can be avoided.

RESUME

LES PERSPECTIVES DU MARCHE DE L'URANIUM

Quand on évalue les perspectives d'avenir du marché de l'uranium en 1981, il est difficile de le faire sans donner beaucoup d'importance aux circonstances actuelles. La chute des prix "spots", les réserves d'uranium relativement importantes et la surproduction envisagée, de l'uranium ont tendance à faire des perspectives du marché une simple extrapolation de la situation actuelle. Le but de cet article est de montrer qu'en réalité les perspectives du marché de l'uranium dépendent largement de ce qui est fait aujourd'hui, et ce que l'on fait aujourd'hui dépend largement des circonstances actuelles.

Une analyse historique du marché de l'uranium révèle la nature cyclique de ce marché et indique que le prix "spot", que les niveaux d'exploration et que l'utilisation de la capacité des usines, tout cela dépend des facteurs économiques. Une étude du marché actuel de l'uranium indique que les effets de la surproduction prévue, les rendements en baisse de l'exploration et la longue durée et le coût élevé du développement peuvent signifier que le niveau de production dans l'avenir reste incertain. Les possibilités d'avenir de l'industrie de l'uranium en général sont aussi incertaines à cause des barrières commerciales, à cause des règlements pour la protection des environs et à cause de l'opinion publique.

Si on met les choses au pire, on s'aperçoit clairement que les producteurs et les consommateurs ne sont pas au courant des conséquences des décisions actuelles. En conclusion, l'utilisation de contrats à long terme, de politiques appropriées d'inventaires et meilleur dialogue entre producteurs et consommateurs permettront d'assurer l'avenir du marché de l'uranium et d'éviter dorénavant le déséquilibre entre l'offre et la demande.

Presented at "Journees internationales d'etude des centrales electriques modernes, Liege, 26 - 30 October 1981 "

ZUSAMMENFASSUNG

DIE AUSSICHTEN FÜR DEN URANMARKT

Es ist schwer, die Aussichten für den Uranmarkt für 1981 abzuschätzen, ohne die gegenwärtigen Verhältnisse stark zu berücksichtigen. Fallende Börsenpreise, relativ hohe Lagerbestände, sowie ein projiziertes Überangebot an Uran verleiten dazu, die Marktaussichten als eine einfache Extrapolation der momentanen Marktlage zu sehen. Dieses Papier will zeigen dass die Aussichten für den Uranmarkt statt dessen weitgehend davon abhängen, was augenblicklich unternommen wird, und dass gegenwärtige Aktionen zum grossen Teil auf den jetzigen Verhältnisse beruhen.

Eine historische Analyse des Uranmarktes hebt die zyklische Natur dieses Marktes hervor und weist darauf hin, dass Börsenpreis, Forschungsintensität und Nutzungsrate der Mühlenkapazität von wirtschaftlichen Faktoren abhängig sind. Eine Überprüfung des gegenwärtigen Uranmarktes legt die Vermutung nahe, dass die Auswirkungen des vorausgesagten Bedarfsüberschusses, die sich verringernden Forschungserträge sowie die langen Durchführungsphasen und die hohen Entwicklungskosten bedeuten können, dass zukünftige Produktionsvolumen unsicher sind. Ebenso sind die generellen Aussichten für die Uranindustrie unsicher aufgrund von Handelssperren, Umweltschutzbestimmungen und der öffentlichen Meinung.

Am schlimmsten sind die Ergebnisse dann, wenn Hersteller und Verbraucher sich nicht im Klaren über die Auswirkungen gegenwärtiger Entscheidungen sind. Das Papier kommt zu dem Schluss, dass mit Hilfe langfristiger Verträge, adäquater Inventarpolicen und detaillierterer Absprachen zwischen Herstellern und Verbrauchern die Aussichten für den Uranmarkt stabilisiert und weitere Schwankungen in Bezug auf Angebot und Nachfrage vermieden werden können.

SAMMENVATTING

DE VOORUITZICHTEN VAN DE URANIUMMARKT

Bij de evaluatie van de toekomstperspektieven die de uraniummarkt in 1981 biedt, dient met de huidige omstandigheden rekening te worden gehouden. De daling van de "spot"-prijzen, de betrekkelijk omvangrijke uraniumreserves en de voorziene overproduktie van uranium strekken ertoe de marktvooruitzichten te definiëren in termen van deze bijdrage is aan te tonen dat in de werkelijkheid de vooruitzichten van de uraniummarkt in ruime mate afhangen van wat vandaag gedaan wordt en dat wat vandaag gedaan wordt grotendeels van de huidige omstandigheden afhangt.

Een historische analyse van de uraniummarkt toont aan dat het om een cyclische markt gaat en dat zowel de "spot"-prijzen als het exploratieniveau en de aanwending van de kapaciteiten van de fabricatieeenheden van ekonomische faktoren afhankelijk zijn. Een aktuele marktstudie van het uranium toont aan dat de invloed van de voorziene overproduktie, het dalend rendement van de prospektie, de lange duur en de hoge kostprijs van de ontwikkeling het produktieniveau in de toekomst in een onzekere zin kunnen beïnvloeden. De toekomstmogelijkheden van de uraniumindustrie in het algemeen zijn ook onzeker omwille van commerciële hinderpalen, van de te nemen maatregelen inzake milieubescherming en van de openbare opinie.

Als men alles op zijn slechtst stelt, dan bemerkt men duidelijk dat de producenten en de konsumenten niet op de hoogte zijn van de gevolgen van de beslissingen die thans getroffen worden. We kunnen ertoe besluiten dat de afsluiting van kontrakten op lange termijn, een adekwaat inventarisbeleid en een betere dialoog tussen producenten en konsumenten de toekomst van de uraniummarkt kunnen veilig stellen en voortaan een onevenwicht tussen vraag en aanbod kunnen vermijden.

The Uranium Market Prospect

Introduction

When the prospects for the uranium market are evaluated in 1981 current circumstances stand out. The spot price fell sharply between 1979 and 1980. World inventory levels at the end of 1980 stood at around three and a half years forward requirements, and forecasts of the world demand and supply indicate that there is an apparent surplus of uranium until at least the mid to late eighties.

In this situation the natural tendency is to simply extrapolate the current circumstances into the future. But to do so does not take into account the fact that historically the uranium market has not operated in this simplistic manner, nor the fact that reactions to today's situation will impact on the future.

It is the purpose of this paper to show that the prospects for the uranium market depend very much on what is done today, and that what is done today depends very much on the current circumstances. An historical examination will be undertaken which will provide an analysis of the factors which influence decisions in the industry. An analysis of the current situation will point out characteristics of the industry on both the supply and demand side that are likely to exert an influence in the future. With these analyses the prospects for the future of the uranium market will be evaluated, bearing in mind the long lead times in the industry and the effect these might have.

Historical Examination

The historical analysis will be limited to the period 1968-1980 and to the United States. The cut-off date of 1968 is chosen, not because it is felt to be particularly significant, but because a relatively complete set of data is available beginning then. The analysis is limited to the United States also because of data availability.

An examination of historic price levels, as measured by the 1980 constant dollar Nuexco Exchange Value (Figure 1), points out quite clearly that the uranium market has experienced cyclical fluctuations. In the period 1968 to 1972 uranium prices fell by about four percent per year, only to rise dramatically between 1973 and 1976. After peaking in 1977, the spot price has fallen substantially, with a 31 percent decrease occurring between 1979 and 1980.

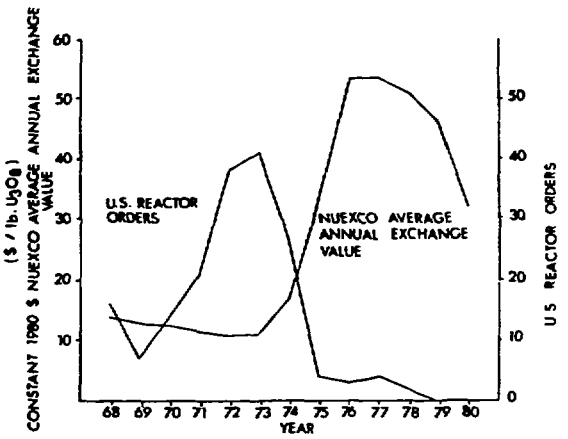

Figure 1 United States reactor orders and constant 1980 $ Nuexco average annual exchange value, 1968-1980 (sources: refs 4 and 5)

The cyclical nature of the uranium market extends beyond the spot price. Figure 1 shows a comparison between reactor orders in the United States and the 1980 constant dollar Nuexco Exchange Value. In the past 12 years both have experienced a cycle with the level of the spot price appearing to lag about 3 to 4 years behind the level of reactor orders. This suggests that the spot price is at least partially determined by the utilities perceived need or demand for uranium.

The idea that economic factors play a role in the uranium market is further strengthened when exploration and production are examined. Figure 2 shows the exploration levels in the United States as measured by the number of feet drilled. As can be seen, the level of exploration and the spot price are quite highly correlated. As would be expected a lag of about one year appears to exist between the level of price and that of exploration.

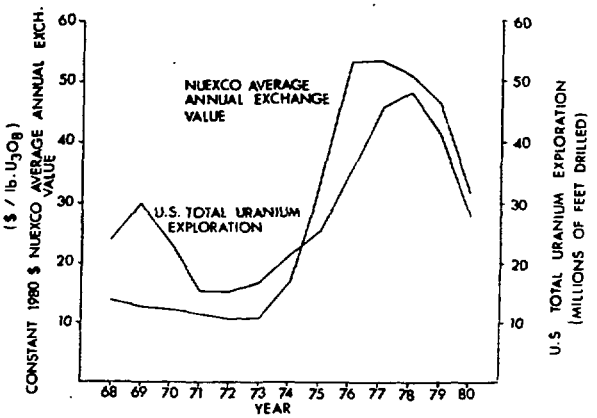

Figure 2 United States total uranium exploration and constant 1980 $ Nuexco average annual exchange value, 1968-1980 (sources: refs 5 and 7)

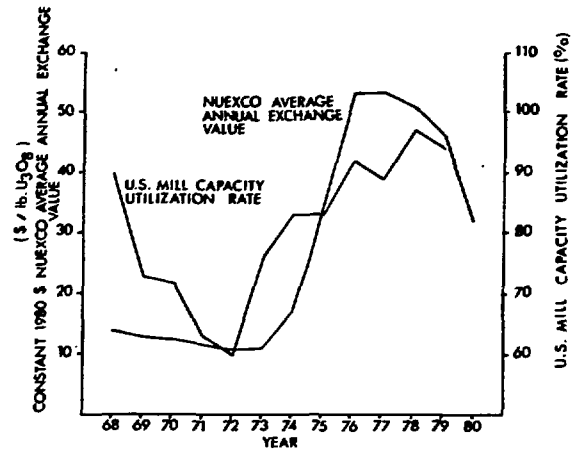

Figure 3 United States mill capacity utilization rate and constant 1980 $ Nuexco average annual exchange value, 1968-1980 (sources: refs 1 and 5)

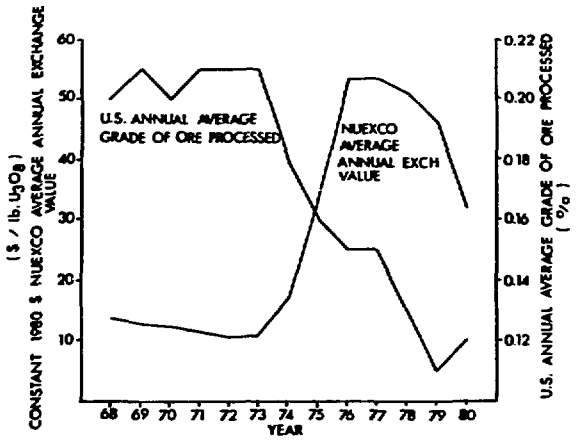

Figure 4 United States annual average grade of ore processed and constant 1980 $ Nuexco average annual exchange value, 1968-1980 (sources: ref 5)

The strong correlation between exploration and the spot price does not exist between the spot price and total production. Rather, the level of United States production has been relatively stable and growing at an annual rate of about four percent. However, this is somewhat misleading. It is more informative to examine the mill capacity utilization rate as this is one of the areas where producers can be expected to make changes in response to changing market conditions. As Figure 3 indicates, the mill capacity utilization rate tracked the movement of the spot price fairly consistently. This supports the thesis that producers change their production operations in response to market conditions. The thesis is further strengthened when the relation between the spot price and the average grade of ore processed is examined. Figure 4 shows that while there has been an overall downward trend in the average grade of ore processed, there has also been a tendency for average grades to rise during periods of weaker markets and to fall during periods of stronger markets.

The above analysis does not mean that exploration levels, capacity utilization rates, and average grade of ore processed are determined by the level of the spot price. Rather, the analysis suggests that the strength of the uranium market has an influence on the spot price, the level of exploration, etc. The strength of the market is then determined by such factors as reactor orders and supply assurance.

The limitations of the historical analysis must be noted. First it only strictly applies to the United States. However, it does point out that economic forces are indeed at work in the uranium market and to this extent the analysis can be extended to cover the other countries in the world.

Secondly, the analysis makes no distinction between producers, though large differences such as ore grade, location, and contract obligations do exist. These differences have important implications because, for example, those producers which have contract obligations must keep producing while those producers with high grade deposits may rather stockpile in a weak market than reduce production. However, despite these differences, it is possible to generalize about what producers and the industry in general will do under various economic conditions.

The historical examination therefore does provide a general analysis of the effects that are likely to occur as the result of varying market conditions. There is no reason to believe that this pattern will not be followed in the future and hence it suggests that the current situation is likely to have an impact on variables such as exploration, mine capacity utilization and the spot price. To see what the impact may be on the prospects for the uranium market the current situation must now be examined.

Current Situation

Current estimates of uranium demand and supply for the years 1980 to 1995 are presented in Figure 5. Based strictly on reactor demand and production capability it appears that there is sufficient supply capacity until the mid to late eighties. However, at least two additional factors must be examined. The first is that utilities worldwide are currently holding 96,0000 tonnes U of inventory or approximately three and a half years of forward requirements based upon current demand. This level can be expected to increase through the mid eighties as enrichment demand exceeds reactor demand. The effect of this on future demand levels will depend on the amount of uranium utilities wish to hold and the extent to which enrichment plants desire to operate at or near capacity.

The second is that supply is being measured as production capacity. It is not likely that supply capacity will be reached, especially in an over-supply situation, and this will cause the cross-over point to occur sooner.

The existence of an apparent surplus may have important repercussions for the uranium industry. It was suggested in the historical section that weak markets will have an effect on spot price, ore grade processed, and the mill capacity utilization rate and it must be asked just how large these effects will be.

The increase in the average grade of processed ore that occurs as producers attempt to lower cost can be expected to shorten mine life and reduce the amount of uranium that is economically recoverable. Thus, sustained high grading can be expected to reduce the amount of material that is ultimately mined.

Cut-backs in mine production that occur as a result of weak markets and the need to preserve the mining strategy can be expected to lower the mill capacity utilization rate. The capacity utilization rate can likely be lowered only so far (say to 75%-80% for any particular mill) before the mill would have to be completely shut down. High grade deposits, where the mine and mill have been designed for flexibility, do have more leeway in this regard. The shutting down of mines, mills and the resulting departure of capital and skilled personnel from the uranium industry also have long term implications, for these changes may be difficult and costly to reverse. Thus, while a weak market may appear favourable to utilities, this may be only for the short run. In the longer run the cost of remobilizing production may offset the gain and may steer utilities towards options less desirable than nuclear in their forward planning process.

This trade off between the short term and the long term also occurs in the case of exploration. As was seen in the historical examination, exploration levels tend to depend to a large

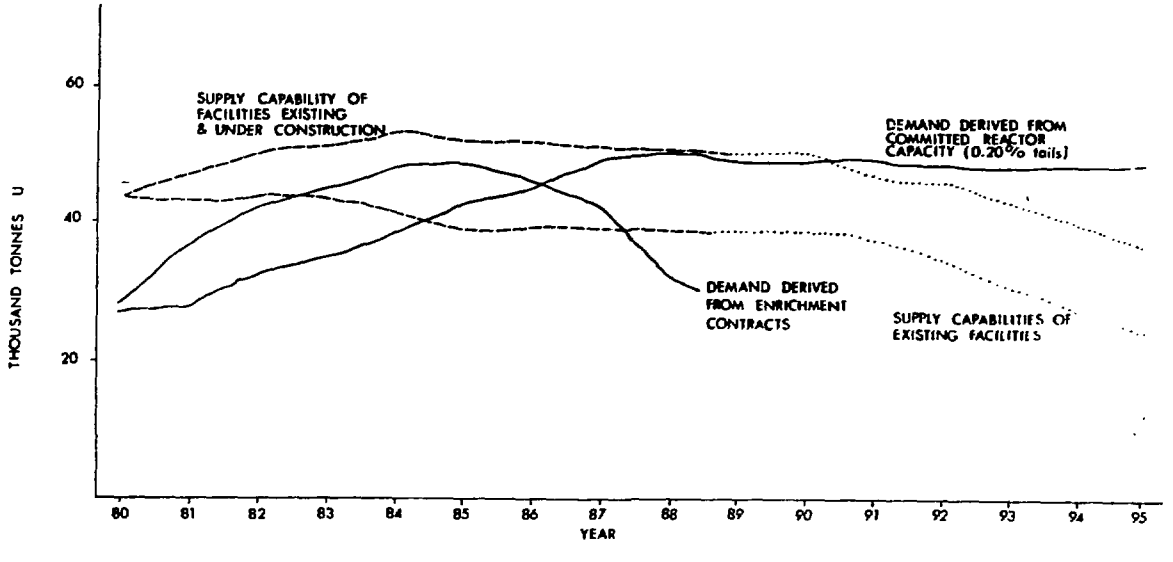

Figure 5 World uranium supply and demand estimates (source: ref 2)

Table 1 United States Uranium Exploration Expenditures and Changes in Uranium Reserves, 1966-1979

Period	(1) Uranium Exploration[1] Expenditures	(2) Change in[2] Uranium Reserves	(3) Per Pound Cost[3] of Uranium Exploration	(4) Probability of[4] Exploration Success
	(millions constant 1980 $)	(million lbs. U_3O_8)	($/lb)	(lbs/$)
1966-1979	2214.0	1,800	1.23	0.81
1966-1974	775.7	800	0.97	1.03
1975-1979	1438.2	1,000	1.44	0.70
1977-1979	1038.0	564	1.84	0.54

[1] Source: Uranium Exploration Expenditures in 1979 and Plans for 1980-81, US DOE, GJO-103(80). Current dollars deflated by the U.S. GNP Implicit Price Deflator.

[2] Source: United States Uranium Reserves, Maurice V. Hansen. Paper presented at U.S. DOE Uranium Industry Seminar, Grand Junction Co., October 1980. Reserves are taken from the highest cost category calculated each year.

[3] Column (1) divided by Column (2)

[4] One over Column (3)

Table 2 Saskatchewan Uranium Exploration Expenditures and Changes in Assured and Probable Reserves, 1966-1980.

Period	(1) Uranium Exploration[1] Expenditures	(2) Changes in Assured[2] and Probable Reserves	(3) Per Pound Cost[3] of Uranium Exploration	(4) Probability of[4] Exploration Success
	(millions constant 1980 $)	(million lbs. U_3O_8)	($/lb)	(lbs/$)
1966-1980	292.6	443	0.66	1.51
1966-1975	79.5	320	0.25	4.03
1976-1980[5]	213.1	123	1.73	0.58

[1] Source: Saskatchewan Department of Mineral Resources Annual Reports. The figures presented are those reported to the D.M.R. for assessment purposes and do not necessarily represent actual uranium exploration expenditures.

[2] Assured and Probable Reserves are obtained from mining companies' estimations of the reserves that are mineable.

[3] Column (1) divided by Column (2)

[4] One over Column (3)

[5] 1979 and 1980 figures estimated

Table 3 Exploration and Development Lead Times in Saskatchewan and Australia

Deposit	Start of Exploration	Discovery of Deposit	Start of Mine and Mill Construction	Production Start	Exploration and Development Lead Times (years)
Saskatchewan					
Rabbit Lake	1964	1968	1972	1975	11
Cluff Lake	1964	1968	1978	1980	16
Key Lake	1971	1975-76	1981	1983*	12
Midwest Lake	1966	1978	-	1986*	20
McLean Lake	1968	1978	-	1988*	20
Australia					
Ranger	1969	1970	1979	1981	12
Nabarlek	1969	1970	-	1980	11
Jabiluka	1970	1971	-	1986*	16
Koongarra	1969	1970	-	1986*	17
Yeelirrie	1971	1972	-	1986*	15
Roxby Downs	1975	1975	-	late eighties*	-

* Expected Production Start

extent on the current market situation. Thus a weakening of the market now may well have repercussions in the future. This problem may be especially acute because of two other factors. The first is that it appears that there are decreasing marginal returns to exploration, at least in the United States and Saskatchewan.

Table 1 shows that in the United States the "probability" of success in exploration fell from 1.03 pounds per dollar (constant 1980 $) spent in the period 1966 to 1974 to 0.70 pounds per dollar spent in the period 1975 to 1979 to 0.54 pounds per dollar in the period 1977 to 1979.

In Saskatchewan, a similar, though not strictly comparable analysis (Table 2) shows that the probability of success in exploration dropped from 4.03 pounds per dollar (constant 1980 $) spent in the period 1966 to 1975 to 0.58 pounds per dollar spent in the period 1976 to 1980.

The above analysis shows that in those areas where exploration has reached a mature stage the returns for each investment dollar are falling. While it is no doubt true that there are areas where the return on the exploration dollar is much greater, it must also be pointed out that there are reasons why these areas have not been explored that extensively. Additional uranium is no doubt available in the traditional areas, though it may take new exploration techniques, which require research and development expenditures, to locate it.

The second factor that will add to the problems of finding and developing new deposits is that of development lead times. In order to obtain an idea of the length of time needed to develop an uranium project, recent uranium developments in Saskatchewan and Australia are compared in Table 3. In Saskatchewan the length of time between the start of exploration and beginning of production varies between 11 and 20 years, with the shorter lead times generally occurring for those deposits which were developed first. In Australia the lead time period varies between 11 and 17 years. These long lead times mean that exploration begun today will not likely lead to actual production of yellowcake until at least 1995 and possibly the year 2000. Yet this is significantly past the cross-over point of supply and demand. The extent to which the returns on exploration expenditures diminish as an area reaches a mature stage and the industry's ability to open new technological and geological domains will determine the overall availability and cost of uranium in the future.

It must also be recognized that even after uranium reserves are located very major capital development outlays are required to bring such reserves into production. In Saskatchewan, for example, it is estimated that an uranium development project could cost anywhere from $400 to $600 million (1980 Cdn. $) for exploration through to reclamation. This very substantial amount of money must be laid out over a period of 15-20 years during which time no revenue is

accruing from that investment. Thus, the investment has to be financed by other means. The usual way is to turn the profits from existing operations over into the new investment. However, this requires that profits be made, and not just sporadically, but on a regular basis to provide the necessary cash flows for such ventures. Circumstances such as exist today make it extremely difficult for the majority of current producers and explorationists to maintain a rational, systematic, and sustained exploration program.

Thus the current state of the market combined with its historic cyclical nature gives rise to a situation of uncertainty as regards future production. This uncertainty is furthered as the result of other factors that impact on the decision to invest in a new mine development. One such factor can be broadly labelled as barriers to trade. Historically this brings to mind the uranium import embargo of the United States. The extent to which protectionist policies exist in the future will result in further aberrations to the uranium market.

The incentive to invest in new uranium development is also lessened as a result of uncertainty regarding future laws, regulations or economic conditions. The possibility of changes in foreign ownership laws may discourage producers from investing in foreign countries. Increased competition from other minerals and industries, as well as stricter occupational health and safety standards, mean that considerable uncertainty exists over whether sufficient mine labour will be available in the future and if so at what price.

Environmental inquiries and regulations contribute to the uncertainty regarding the future for both producers and utilities. For producers environmental inquiries add considerable time to the development of the project. In Saskatchewan the inquiry process has added as much as two to three years to development time, while in Australia the inquiry process along with a period of government indecision added four to five years to the lead time on certain projects. Environmental inquiries and regulations also influence the design and hence the cost of the mine, mill, and tailings disposal, and the continuous upgrading of such standards adds a further dimension to investment decisions.

The same problems are true for utilities. The public participation and regulatory processes in many nations tend to add greatly to cost by virtue of the stretching out of the developmental periods for major generating facilities, whether they be coal or nuclear. Table 4 shows that the lead times for developing a nuclear generating unit in the United States have been increasing over the last eight years at a rate of about eight and a half months each year. The result is that reactors beginning commercial operation in 1980 had an average of an 11 year lead time.

Table 4 United States Average Nuclear Generating Unit Project Lead Times

Year of Initial Commercial Operation	Number of Units	Average Project Lead Times
		(years)
1970	3	5.1
1971	4	5.5
1972	6	6.5
1973	5	7.1
1974	6	7.7
1975	7	7.8
1976	3	8.5
1977	4	9.7
1978	1	10.7

Source: Info, Atomic Industrial Forum, Inc., September, 1980.

The long lead times with the potential for changes make an objective assessment of when additional quantities of production will be required extremely difficult and attempts to fine tune exploration investment decisions become extremely subjective. The long lead times also present problems for the utilities. In the United States, where the Public Utility Commissions generally do not allow their utilities to build the capital charges of a new plant into their base rates, the utilities face serious problems financing nuclear construction, or any other for that matter. Current high interest rates further compound the problem. The long lead times mean that decisions about future electrical capacity must be made well in advance of the need. At the present time utilities are forecasting that electrical demand will grow at two to three percent per year. This is based on the current low rate of growth in the western economies. However, there is no guarantee that these economies will continue to stagnate. Rather it is possible and indeed hoped that an economic recovery will occur. Should this happen then the utilities could easily find themselves with a storage of generating capacity. It is also possible that insufficient generating capacity could also limit economic growth. As supply side economics indicates, limits to supply capacity may have just as large an effect on growth as limits to demand.

The nuclear industry as a whole is also facing uncertainties. Public opinion is one such area. The public and their governments must be made aware of the poor management of not developing a resource such as uranium which in comparison to oil is abundant. Resources, by their very nature are finite. From an overall planning point of view it makes the most sense to develop

and substitute those resources which are more abundant for those which are less. As well, oil has uses, such as a mobile source of energy and an input into chemical compounds which may always exist. Again it is better planning to reserve oil for these uses which have no replacements and to substitute a resource like uranium where possible.

In a time of inflation such as is currently being experienced, nuclear power has the advantage of having its major cost component occurring at the beginning of development. Though this cost is large, once it is incurred the costs of operating the plant are relatively low. In this way the cost of producing electricity becomes relatively fixed and largely insulated from inflationary pressures.

Finally, the uranium industry faces a very great need for a truly international nuclear safeguards regime. Until one is developed, uncertainty and political problems will continue to plague the industry. These uncertainties, when combined with the other impediments to the functioning of the market place, are likely to result in a much less rational development of the world's uranium resources than would otherwise be the case.

Prospects for the Uranium Market

The previous sections have indicated that the financial uncertainty resulting from the current market situation combined with other uncertainties in the market are likely to result in changes that could have an important impact on the development of future uranium resources.

But how important! If a worse case scenario can be presented, what would it look like? Take exploration for example. If the uranium market remains weak, exploration in all areas of the world could drop off, which, combined with the diminishing returns on exploration investment, could mean that few new deposits are located.

Development of these deposits is likely to be deferred in response to weak market conditions which provide little or no incentive to embark on major capital expenditures given the high level of uncertainty in the future.

Current production levels and production capability are also affected. High grading in an effort to lower production costs results in a decrease in the amount of material that is economically recoverable. Cutbacks in output occur resulting in an exit from the industry of capital and expertise, while some mines and mills could be closed altogether causing a reduction in production capacity.

What then are the effects of such a scenario? In this worse case, the development of new projects could easily be put off to the point where say in the early nineties production capability would no longer equal demand. At this point there would be a major effort to revive old production facilities and to reactivate development projects which had been mothballed. This would only occur if the price of uranium were to increase sharply so as to provide the necessary financial incentive. In the short run, however, to increase production beyond the flexibility that reviving old production facilities would allow is difficult, if not impossible, given the lead times to bring deferred projects on stream.

The result is that utilities would scramble for whatever production was available and in doing so would drive the price upwards dramatically. Exploration levels would jump, capacity utilization would increase, ore grade processed would fall and the cycle would begin again.

While the above scenario might be quite unlikely, it nevertheless shows one way in which the uranium market might recover and strengthen. However, it is not a desirable way. Much more desirable would be for the uranium market to strengthen to a level which would ensure that sufficient production would be available when it was needed. Also desirable would be more stable prices which would easily result if it was known that supply would match demand.

Producers, under such conditions, would more easily be able to undertake long run planning as regards exploration and development. Consumers would benefit from greater assurance of supply and electricity would continue to be generated cheaply, for uranium is a very small component of the final cost of nuclear power. In all, the nuclear industry in total would be on a much sounder base for future growth.

There are a number of ways in which this stability and assurance could be achieved. Increased awareness and communication between producers and consumers as to future demand and supply levels would aid each party greatly in their formulation of long run plans. Appropriate inventory policies by utilities could add greatly to the stability of the system while at the same time offering supply assurance. The longer lead times for mine and mill development and the greater uncertainty in other areas may call for higher levels of inventories. Such a policy by utilities would also, at the current time, lend strength to the market and could provide the incentive for further exploration and development. Long term contracts with appropriate pricing mechanisms allowing for

continued economic viability must be encouraged as a way of providing the necessary incentive for producers and assurance of supply for consumers.

In conclusion, the uranium market prospects depend very much on the decisions taken by the industry today. As has been shown, these decisions, which will be based on the current situation, could lead to a subsequent imbalance in the uranium market. This imbalance will further add to the cyclical nature of the industry. These imbalances can be avoided, but only if the entire industry realizes what the effects of its current decisions will be.

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