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CONTRACTING FOR NUCLEAR FUELS

Paper given by C. M. Schuessler, NUKEM GmbH,
at the Nuclear Inter Jura '81

Ladies and Gentlemen,

1. In preparing this paper, I have drawn on NUKEM's extensive international experience as a broker in nuclear fuels, on the know-how gained from providing fuel cycle services to the nuclear industry worldwide, as well as on the data accumulated from long-standing activities as an international consultant within the nuclear fuel cycle.

What I am going to say is, however, my personal and private opinion and shall in no event be construed as reflecting the position of my company.

1.1 My paper concentrates mainly on natural uranium sales contracts. In this context, I shall, however, also deal very briefly with the contractual arrangements for conversion to UF_6 . I intend to set out in a first part of my paper the most common and important types of uranium sales contracts and explain, where appropriate, their underlying business philosophy and the related considerations underlying the main terms and conditions. In a second part, I should like to elaborate on specific common features of uranium supply contracts and to comment on the most important clauses.

1.2 At the outset, I should like to give a brief definition of the term "nuclear fuel". The terms in this paper refers to uranium used as fissile material for the operation of nuclear reactors. Except in the case of heavy water moderated reactors, uranium enriched in the isotope U_{235} is used as fuel. Such enriched uranium is produced from natural uranium which is delivered by the uranium producers to the converter the form of uranium ore concentrates, so-called "yellow cake". This "yellow cake", or rather the uranium oxides contained therein, is converted to uranium hexafluoride (UF_6) and subsequently enriched in the isotope U_{235} .

This paper deals therefore with contractual arrangements within the first steps of the nuclear fuel cycle, i.e. uranium production and conversion.

2. Various types of uranium supply contracts

2.1 The various types of supply contracts used by the uranium producing industry throughout the 70ies are, generally speaking, classical to the international mining industry. They can be summarized as follows:

- take and/or pay contracts with or without up-front payments;
- supply contracts coupled with the financing of the mine by the purchaser;
- supply contracts with a secured or unsecured loan;

- supply contracts with significant secured or unsecured up-front payments;
- supply contracts with or without nominal up-front payments.

2.2 From the producer's view, the emphasis is normally placed on the suitability of a particular contractual arrangement as a means of assisting financing of the mine and of the future production, in particular where a new mine is to be opened. On the other hand the purchaser of the uranium seeks above all security of supply at competitive prices.

2.3 Take and/or pay contract with or without up-front payments

"Take and/or pay contract" means that the purchaser is obliged to accept deliveries of the uranium and to pay for it, or even to pay for it on fixed dates agreed in the contract regardless of whether delivery actually takes place or not. This type of contract has obviously a high collateral value to the producer and is generally used by him through assignment to a lending bank as a security for loans to finance the uranium mine. Where up-front payments are called for as well, this represent an additional source of finance to the producer. They may be subjected to a notional interest credit for the purchaser.

From the point of view of the purchaser, the take and/or pay type contract is the harshest form of contract and, as such, is more common in a seller's market as

prevailed in the uranium industry during the major part of the 70ies. Meanwhile the market has changed to a buyer's market. It is therefore difficult to envisage that purchasers will under normal circumstances be prepared to enter into such a contractual arrangement. The only likely exception is where the purchaser takes the total output of the mine and the parties agree on this type of contract as a means of raising finance for the construction of the mine. The advantage for the purchaser in such a case is to avoid - at least partially, if not wholly - loans or advance payments appearing in his balance sheet. Where such a financing solution is adopted, the pricing basis would normally be cost plus.

2.4 Supply contract coupled with the financing of the mine by the purchaser

The basic considerations behind this type of arrangement, commonly covered by a comprehensive agreement - part covering the supply of uranium and part covering the financing arrangements - is self-explanatory. It will occur under circumstances where the purchaser takes the total production of the mining project over a long period. Where the ore grades of the uranium deposit are liable to vary significantly and consequently production as well, maximum or minimum delivery quantities may be agreed to assure the purchaser of at least a certain level of supplies.

The crucial parts of this type of arrangement are the provisions dealing the financial obligations of the parties. Normally the producer will be expected to put up some risk capital - with the bulk, however, coming from the purchaser. Consequently the producer will have to disclose to the purchaser details of the capital costs of the mine as well as the timing of the expenditure. Should the purchaser financing also cover working capital requirements, it would be necessary for the producer to disclose the estimated operating costs as well.

In the same context, a matter of importance is of course the scheme of repayment of the financing and accrued interest, if any, through offsetting against the value of uranium deliveries.

It can be expected that the pricing basis would, at least partially, be cost plus.

2.5 Supply contract with a secured or unsecured loan

This type of contract is in essence a variation of the one just discussed and is, as such, normally offered in connection with a new mine where the question of third party security - using the contract as collateral for bank borrowings - is not such a critical matter for the producer. Also the producer would probably deliver his production to several consumers and the loan from each would fall significantly short of the overall cash requirements of the producer to construct and to operate the mine.

The loan from the purchaser may be secured, for example by a charge on the mineral rights or on the mining facility or by a bank guarantee. If the loan is unsecured, the additional risk to the purchaser would normally be reflected in a lower price for the uranium.

2.6 Supply contract with significant secured or unsecured up-front payments

This contract is but another variation of the aforementioned arrangement. The amount of the up-front payment and the application of interest will be important issues in agreeing the contract price. The security for the up-front payments would in most cases be a standard advance payment bank guarantee.

This type of contract is relatively common in the industry and, just as the following contract type, mainly used where a mine is in production.

2.7 Supply contract with or without a nominal up-front payment

The supply contract under which payments are normally made on or after delivery of the uranium, is commonly used where a mine is in production and the operating cash flow is sufficient to meet the financial needs of the producer. More often than not, such contracts require from the purchaser an unsecured, non-interest bearing advance payment of 5 % to 10 % of the contract price which is deducted on a pro rata basis from the value of the uranium deliveries.

2.8 In summarizing, it can be seen that the type of contract offered by a particular producer depends to a large extent on financial considerations in general, and on the producer's financial position and his ability to raise capital in particular. In addition, there is a direct relationship between the type of contract chosen and the agreed contract price : the greater the share of the purchaser in the producer's risks and the more onerous the contract terms to the purchaser the greater will be his expectation to have this fact reflected in the contract price.

3. Major common features of uranium supply contracts

3.1 Uranium supply contracts can also be divided into long term and short term contracts, the latter also including spot market transactions. In their provisions, both types of contracts are normally reasonably comparable, differing only insofar as longer term agreements tend to be more carefully negotiated with additional emphasis on price, escalation and payment terms, security of supply and force majeure provisions.

3.2 I consider it appropriate to outline at this point the extent to which the conversion company appears in the typical uranium supply contract:

- the place of delivery may be the facility of a named conversion company, the transport costs being included in the contract price;
- the specification of the uranium is that of the named conversion company;

- the results of the weighing, sampling and analyses undertaken by the converter are binding on the contracting parties.

The contractual link between the purchaser and the converter is established through the conversion contract. As regards the uranium supplier and the converter, it is established by means of a tripartite agreement, with the purchaser as the third party.

- 3.3 Uranium supply contracts have become quite standardized by now, although the contractual wording used may vary widely, depending mainly on the nationality of the producer and his legal background.

3.3.1 Preamble

- A preamble normally only occurs in longer term contracts where it may be considered important to set out the intentions of the parties and to list items such as
 - uranium prospecting or joint venture agreements in respect of the mine
 - the origin and registration of the mineral rights
 - the feasibility study for the mine when the mine is not yet in operation
 - the estimated uranium reserves
 - any supplemental agreements between the producer and the purchaser:

3.3.2 Definitions

Although not essential, some parties prefer to establish definitions for the sake of clarity and ease of writing subsequent contract provisions.

3.3.3 Scope of contract

This clause is often also simply called "Quantities and Origin".

This is the somewhat standard provision setting out the major contractual obligations of the parties:

The supplier agrees to sell and deliver and the purchaser agrees to buy and accept from the supplier a given quantity of uranium oxides (U_3O_8) contained in uranium concentrates and to pay the supplier therefore.

This clause very often also contains the chemical specification of the uranium to be supplied as well as its origin..

3.3.4 Delivery

The provisions of this clause give the point (or place) of delivery of the uranium which will either be the mine or, more often, the port of shipment or the conversion facility. It is important to state the terms under which deliveries will be made, for example INCOTERMS 1953, US trade terms or the like. These terms regulate details of the delivery procedure and, in particular, the passing of the risks in the uranium from the supplier to the purchaser. The most common trade terms used are "Ex

works", "FOB", "CIF" and "Delivered". The term actually used, should be clearly defined and considered very carefully as to its legal consequences. It seems important to mention in this context that the terms, although the same word like "FOB" is used, may differ substantially from each other. It is my personal opinion that the only sufficiently defined trade terms are contained in the INCOTERMS 1953, and I will normally advise to refer to these terms, whenever possible. Although it would seem important to discuss these trade terms in more detail, I feel that this would go beyond the scope of this lecture. It would certainly, however, be useful to do this at some other time. If no defined trade terms are used, the passing of the risk and the delivery procedures have to be dealt with explicitly.

It is also appropriate to stipulate provisions concerning the passing of title under this clause.

Furthermore, it will contain delivery dates or a delivery schedule and consequently provisions dealing with delays in delivery. It is usual to agree that the purchaser has the right to cancel deliveries delayed beyond a specified period of time and to buy replacement material from another source. In this instance, the supplier is expected to bear all additional costs. Indirect or consequential damages arising from delays in delivery are, however, always excluded, in particular loss of profit, loss of production, purchase of replacement energy and the like.

3.3.5 Price

Prices are commonly fixed as unit prices and specified for the U_3O_8 contained in the uranium concentrates.

Prices in short term supply contracts tend to be fixed prices without escalation.

In long term contracts, an analysis of the various pricing methods used in the uranium industry, shows the following broad categories:

- fixed price with or without escalation and/or ceiling price
- market price or a price related to conditions ruling in the market with or without ceiling and/or floor price
- cost of production plus an agreed margin for the producer (cost plus price)
- periodic agreement of price through negotiation between the parties with or without recourse to specific arbitration.

In the context of this paper, I shall refrain from elaborating the pricing methods in detail. I wish to make only a few general comments.

- 3.3.5.1 The fixed price with escalation pursuant to an agreed escalation formula represents certainly one of the most common pricing mechanisms in uranium contracts. It is also not unusual to have a combination with a "ceiling price" in order to protect the purchaser against the risk that the escalated price is consistently higher than the market price. This price limitation can usually be invoked, if the escalated price is higher than the market price for a defined period, with the consequence that the ceiling price will apply until the situation reverses itself.
- 3.3.5.2 During the past period of fast rising prices, market price clauses have become very important in long term supply contracts. Initial problems with terminology such as reference to "world market price" or "average prevailing market price" have been resolved by referring to a published price source such as the NUEXCO or NUKEM Exchange Value. Where this pricing method is used, it is common to see it combined with a "floor price" or "minimum price" clause. This is to protect the supplier against having to sell uranium at a loss. Hence, the floor price is normally orientated on the producer's escalated cost of production.
- 3.3.5.3 The problems of cost-plus price clauses lie normally in the definition of the cost, the availability of objective information on such cost and the determination of the "plus" (or profit) element. The considerations are, however, more of a financial than a legal nature.

3.3.5.4 Rather important have become price clauses stipulating periodic price negotiations. Such stipulations foresee procedures to be followed in establishing a new price at regular intervals. Such new price may be defined as being "world market price" leaving it then to the parties to agree on what exactly this means in terms of cash. Alternatively, it could also be the more common procedure of tabling "put" and "call" prices and taking the average as the new price, if the difference does not exceed a given percentage. If no agreement is reached, the matter may go to arbitration - if stipulated - or the contract may be cancelled. There are many variations and refinements of this price finding method which require obviously a major drafting effort from the legal side.

3.3.5.5 As a last point in the context of contract prices, I should like to mention the question of taxes, duties and similar levies. It is generally accepted that the purchaser bears all such expenses after delivery of the uranium and the supplier those occurring before delivery. A matter of negotiation are, however, taxes coincident with the transaction such as sales taxes or levies on or measured by the gross receipts of the supplier (turnover taxes) on account of sales to the purchaser. Whereas the uniform system of value-added tax in the European Communities allows recovery of such taxes from the tax authorities by the purchaser, this is regularly not the case abroad - for example in the USA. While uranium is normally exempt from sales tax or at least zero-rated, it may still be a risk for the purchaser to assume the payment of such tax. Sales tax is a local tax, levied at the place of delivery.

It is somewhat difficult, in particular for a foreign purchaser under a long term contract, to predict how the local tax authorities will behave. On the other hand, a straight forward stipulation putting the sales tax burden on the supplier may go against compulsory statutory law, for example in New York. It is possible to circumvent this problem, but the contract lawyer may have to perform some ingenious twists.

3.3.6 Payment

With prices being specified for the U_3O_8 contained in the delivered uranium concentrates, it is a prerequisite to know the exact quantity of U_3O_8 in order to determine the actual amounts of money due for a particular delivery of concentrates. The exact quantity of U_3O_8 is, however, not known at the time of delivery. It is established by the converter after weighing, sampling and assaying have been undertaken at his facility. One method is therefore, to agree to pay only a given percentage of a sum determined by using the supplier's values, with a settlement being made when the converter's values have been established. Another method, particularly in long term contracts, is to pay the full sum calculated from the supplier's data and to make any necessary adjustments in invoices covering subsequent deliveries of uranium. This latter solution is certainly more practical, when more than just a few deliveries occur in a given period.

It is not unusual that payments are made by means of an irrevocable Letter of Credit which is drawn on against presentation of shipping documents.

3.3.7 Weighing, Sampling, Analyses and Acceptance

The converter invariably undertakes the determination of the quantity and carries out the analyses of the uranium concentrates after sampling at the converter's facility. Normally, the findings of the converter are binding on the supplier and the purchaser. In case the supplier disputes the determinations of the converter, the matter goes to umpire. The costs of the an umpire are borne by the party whose findings were farthest from the umpire's results.

3.3.8 Warranties

A specific warranty is given by the supplier for the conformity of the concentrates with the agreed specification. Any further warranties, for example for merchantability or fitness for a particular purpose are excluded.

A breach of the warranty makes the supplier liable for payment or reimbursement of any surcharges levied by the converter in cases where the concentrates are outside the normal specification, but still inside the "maximum limit specification" and as such still acceptable for conversion. In the event that the uranium concentrates are found to be outside the "maximum limit specification" and that they are therefore rejected by the converter, either the supplier has to replace the rejected material within a specified period or the purchaser may buy replacement material from an alternative source and recover any additional costs from the supplier.

Any further rights or claims are normally excluded.

3.3.9 Use of Material and Safeguards

It is not unusual for the producer to limit the use of any uranium supplied by reserving the right of first refusal to re-purchase the material in the event that the purchaser intends to sell it to a third party.

It is further usual for this clause to state that the uranium and its subsequent use will exclusively be used for peaceful non-explosive purposes and in accordance with the provisions of the Treaty on the Non-Proliferation of Nuclear Weapons. The uranium is subjected to safeguard measures of the International Atomic Energy Agency or of EURATOM. Any transfer of uranium to a third party is subject to the same assurances as given by the purchaser and is dependent upon the terms of the bilateral nuclear co-operation agreement between the supplier country and the purchaser country. Sometimes, for example in the case of South African uranium, the prior consent of the supplier country is required.

3.3.10 Force Majeure

As "Force Majeure" is not very clearly defined in many legal systems and as the term may be applied with substantially differing meanings, the Force Majeure clause tends to contain an abstract definition of the Force Majeure situations and also a listing of examples of Force Majeure situations.

There is only one peculiarity to Force Majeure clauses as used in uranium contracts, a regularity which is also evident in most other supply contracts for nuclear

materials. As a result of this kind of transaction being particularly susceptible to government action via export or import licencing procedures or intervention through embargoes or boycott measures, a specific wording extending Force Majeure to these circumstances has become common in the uranium industry. Even if this is not the case, there have been various decisions lately, for example by English courts (Czarnikow Ltd. ./ . Rolimpex, House of Lords 1978), but also one earlier one (1958) by a court of arbitration sitting in Moscow (Jordan Investments Ltd. ./ . Sojusnefteksport, 1958), ruling that the intervention of public authorities by way of an export or import restriction has to be considered as a Force Majeure occurrence. These decisions have attracted worldwide attention and discussion. This discussion has lately gained momentum in connection with the so-called "Iranian Cases", where several state controlled Iranian Companies have refused deliveries - with reference to rulings of the new government - under contracts concluded under the previous Shah regime.

It is important to note in this context that various international trade terms, for example Rule 21 of the "London Rules" and the INCOTERMS 1953, deal with the responsibility for obtaining necessary export and import licences. If the Force Majeure clause does not contain a specific stipulation on this matter, the party concerned will not have the right to claim Force Majeure in the event of a failure to obtain a licence for which it was responsible. The same may result from the application of specific national laws: under English law, the exporting

- failure to obtain licences for the mine or, more rarely, for the nuclear reactor for which the uranium is destined;
- bankruptcy of either party.

The specific rights and claims given to either party in case of termination are a matter of negotiation.

3.3.12 Assignment

More often than not, this clause only allows assignment or transfer of rights or obligations of either party to a third party with the prior written consent of the other party. An exception may be made where the supplier wishes to use the contract as collateral by assignment of his rights to a lending bank from the outset.

3.3.13 Arbitration/Competent Court

Apart from specific arbitration as an integral part of the pricing procedure and reference to an umpire as part of the determination of delivered quantities of uranium, the parties may or may not refer any disputes to arbitration or to a specific court of law. If disputes are to be settled by arbitration, the most common are clauses of ICC or Uncitral clauses. Arbitration awards are normally final and binding on both parties.

3.3.14 General Provisions

The contract is completed by a variety of general provisions dealing with applicable law, notices and amendments and also including a "Fair clause" and "Representations" that the contract is the entire agreement between the parties.

3.4 EURATOM

You will find that in those uranium supply contracts involving a party within the European Communities, the EURATOM Supply Agency is also a party to the contract. This is due to the fact that by law, i.e. the Treaty constituting the European Atomic Community, the EURATOM Supply Agency is not only the owner of all fissile material on the territory of its Member States, but has the right of first refusal to acquire fissile materials produced inside the Communities, and the exclusive right to contract for any fissile materials to be acquired from outside the Communities. In accordance with a simplified procedure, the EURATOM Supply Agency leaves negotiations to the purchaser and finally concurs to the agreed contract.