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NOTES

PROCUREMENT POLICIES AND POWERS OF THE ATOMIC ENERGY COMMISSION

This article deals with the procurement of domestic source materials by the Atomic Energy Commission. This Commission was established by the Atomic Energy Act of 1946 and re-established by the same Act of 1954 to administer the development and control of atomic energy in the United States. Under these acts the Commission is given certain broad powers to procure source materials which it has implemented by the adoption of specific policies in the form of regulations.

SOURCE MATERIAL

Source material, as defined by the 1954 Atomic Energy Act, "means (1) uranium, thorium, or any other material which is determined by the Commission pursuant to the provisions of section 61 to be source material; or (2) ores containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time."¹ Section 61 gives the Commission the authority to designate new materials as source materials if the Commission finds that such materials are essential to the production of special nuclear materials and that such finding

1. 68 Stat. 924 (1954), 42 U.S.C.A. Sec. 2014s (Supp. 1954).

is in the interest of the common defense and security, and the President concurs in these determinations. The Commission, by regulation, has defined source material as "any material, except fissionable material, which contains by weight one-twentieth of one per cent (0.05%) or more of (1) uranium, (2) thorium, or (3) any combination thereof."² Uranium ores are undoubtedly the most important source material which the Commission is interested in procuring, since they have established by regulation prices for various grades of these ores. These regulations are discussed in subsequent divisions of this article. With respect to thorium, the Commission over the past several years has purchased by-product thorium salts from domestic processors of monazite. They are presently contracting for additional quantities of thorium salts to meet limited requirements. The Commission does not buy monazite or other ores of thorium and has not established guaranteed prices for these materials as has been done in the case of uranium.³

Under the Atomic Energy Act of 1946, all source materials contained in the public lands were reserved for the use of the United States subject to valid claims, rights or privileges existing on August 1, 1946, and, after the Act was passed, every patent, conveyance, lease, permit or other authorization, on lands which might contain source materials, contained a reservation to the United States of such materials.⁴ The principal practical effect of this reservation was detrimental to the Commission's program, since doubt arose in the mining industry as to whether a mining claim based on the discovery of source material alone was legally valid. The Commission encouraged mining locations for such material, though the Department of Interior had ruled that the reservation precluded mining locations for fissionable source materials (Appeal of Jesse C. Clark, A. 24521, January 14, 1947). This cloud existing on claims for source materials was removed by the passage of the Atomic Energy Act of 1954 (Public Law 703) and the Multiple Mineral Development Act (Public Law 585), both passed in August 1954. These Acts amend the 1946 Atomic Energy Act and accomplish two principal objectives: (1) deletion of the reservation to the United States of source material in the lands of the United States in the former Atomic Energy Act and substitution therefor of the right to prospect and explore through purchase and condemnation proceedings; (2) confirmation of the validity of otherwise valid mining claims located on the basis of a discovery of source materials alone.⁵

2. 10 Code Fed. Regs. Sec. 40.2 (a) (1949).

3. The information in this article concerning thorium was obtained from Jesse C. Johnson, Director, Division of Raw Materials, Atomic Energy Commission, Washington, D.C., in a letter to the author of this article, dated February 17, 1955.

4. 60 Stat. 762 (1946), 42 U.S.C.A. Sec. 1805 (b) (7).

5. 68 Stat. 934 (1954), 42 U.S.C.A. Sec. 2098 (Supp. 1954); 68 Stat. 716 (1954), 30 U.S.C.A. Sec. 521-531 ((Supp. 1954)). These amendments to the old Act also permit holders of a patent, conveyance, lease, permit or other authorization with a reservation to the United States of fissionable source material to apply to the department or agency issuing the same and acquire a new patent, etc., without the reservation. For a full coverage of the problems arising under objective (2) see Bloomenthal, Multiple Mineral Development on the Public Domain, *supra* p. 139 in this symposium.

Once an individual, corporation, partnership or association has found valuable source materials on the public domain and established his claim (although he may not benefit from the claim if he has acquired knowledge of the deposit from confidential information while associated with the atomic energy program and filed his claim pursuant to such knowledge⁶) or has found the material on his own property, or even if the Commission believes the property might contain deposits of source materials, the individual is subject to Section 66 of the 1954 Atomic Energy Act which authorizes the Commission to the extent it deems necessary to effectuate the provisions of the Act to purchase, take, requisition, condemn, or otherwise acquire source material, any interest in real property containing deposits of source material, or rights to enter upon any real property deemed by the Commission to have possibilities of containing deposits of source material in order to conduct prospecting and exploratory operations for such deposits.⁷ Up to the present time, the Commission has not thought it desirable or necessary to exercise these rights, and it will not be the policy of the Commission to exercise them except in case of emergency where no other course of action is practicable; it is not expected that such an occasion is likely to arise.⁸ However, people refusing to explore and develop their properties or sell the source material are always subject to the condemnation procedure.

The Commission exercises a great amount of control in procuring for itself source material and restricting commerce in such materials in the fact that the Atomic Energy Acts and the regulations adopted by the Commission pursuant thereto require every person to acquire a license from the Commission before he may transfer, deliver, receive possession of or title to any source material after removal from its place of deposit in nature.⁹ The regulations provide for certain exceptions or grant general licenses in cases of insignificant amounts, exempted products, contractors of the Commission, common and contract carriers in the regular course of business, pharmacists, physicians, hospitals, educational institutions, and analytical laboratories.¹⁰ But generally, a license is required for any transfer of source material of quantities greater than 10 pounds.¹¹ The Commission is also given power to require reports of ownership, possession, extraction, refining, shipment, or other handling of source materials after their removal from their place of deposit in nature. These licensing and reporting provisions enable the Commission to restrict commerce in source material under their power to grant, deny or revoke a license. Also by these provisions the Commission acquires knowledge of source material enabling

6. 68 Stat. 934 (1954), 42 U.S.C.A. Sec. 2098a (Supp. 1954), 30 U.S.C.A. Sec. 521-531 (Supp. 1954).

7. 68 Stat. 933 (1954), 42 U.S.C.A. Sec. 2096 (Supp. 1954).

8. *Prospecting for Uranium*, published by the United States Atomic Energy Commission and the United States Geological Survey (Revised October 1951), p. 55.

9. 68 Stat. 932 (1954), 42 U.S.C.A. Sec. 2092 (Supp. 1954).

10. 10 Code Fed. Regs. Sec. 40.23 and 40.62 (1949, and 1953 Supp.).

11. 10 Code Fed. Regs. Sec. 40.11 (1949).

them to procure the material through its granted powers or a provision in the license.

The Commission, by regulation, has established procedures for purchasing and granting bonuses for uranium. One procedure established by Domestic Uranium Program, Circular 1 and found in the Atomic Energy Commission's Regulations, Sec. 60.1 (Sec. 60.2 concerns the bonuses given for high grade ores) provides for guaranteed minimum prices for delivery to the Commission of domestic refined uranium, concentrates and high grade uranium bearing ores other than uranium bearing ores of the Colorado plateau area commonly known as carnotite-type or roscoelite-type ores. "Circular 1 was established with the thought that high grade domestic pitchblende deposits similar to those of the Belgian Congo might be discovered. No ore has been delivered under Circular 1."¹² The other procedure for the lower grade carnotite-type or roscoelite-type ores of the Colorado Plateau area established by Domestic Uranium Program Circular 5 and found in the Atomic Energy Commission's Regulations Sec. 60.5 (Sec. 60.6 concerns the bonuses given for ore of this type) provides for purchase prices for this type of ore. The Colorado Plateau is the region where the corners of the states of Utah, Colorado, New Mexico and Arizona meet, the greater part of the area lying in southeastern Utah and southwestern Colorado. This area "is the major uranium producing area in the United States. Although the schedule set forth in Circular 5, Revised, applies only to carnotite or roscoelite-type ores produced in this area, it has been our policy [the Commission's] insofar as practicable, to use it as a guide in negotiating agreements for the procurement of other types of uranium ores amendable to treatment in existing plants, produced in the Colorado Plateau or in other areas."¹³ Thus, it seems that in order to determine which of the two procedures to follow you determine what type of ore you have, either high grade or low grade, rather than from what area it was obtained. From a practical standpoint, however, the procedure under Circular 5 is always used since no high grade ore has thus far been delivered to the Commission for sale.

DOMESTIC URANIUM PROGRAM FOR HIGH GRADE URANIUM ORES

I. Purchasing Provisions

To stimulate production of uranium of the high grade type the Commission by regulation has established through April 11, 1958, a guaranteed minimum price: (1) for uranium bearing ores and mechanical concentrates, \$3.50 per pound of uranium oxide (U_3O_8) determined by the Commission to be recoverable, less cost per pound of refining; (2) for refined uranium products, \$3.50 per pound contained uranium oxide (U_3O_8);

12. Excerpt from a letter written to the author of this article by Jesse C. Johnson, Director, Division of Raw Materials, Atomic Energy Commission, Washington 25, D.C., dated February 17, 1955.

13. *Ibid.*

the prices are f.o.b. railroad cars or trucks at a shipping point designated by the Commission convenient to mine, mill or refinery.¹⁴

The Commission will not accept deliveries under this procedure of less than ten short tons of ores or mechanical concentrates, nor of ore or mechanical concentrates which assay less than 10 per cent U_3O_8 by weight, nor less than 97 per cent U_3O_8 in black uranium oxide or 87 per cent U_3O_8 in sodium uranate. However, the Commission will negotiate to purchase ores and refined products of lesser quantities and grades than this.¹⁵ They will also negotiate to pay higher prices under special circumstances or for lots of ores or refined products in excess of the minimum quantity.¹⁶

Anyone who has ores or refined products meeting the specifications of these regulations may offer it for delivery to the Commission by writing or telegraphing the Commission at Post Office Box 30, Ansonia Station, New York 23, N. Y., Attention: Raw Materials Operations. Each offer should be accompanied with a representative ten-pound sample and information concerning the location of property; character of material; amount, location; origin, if offered by other than producer; if material is owned, in whole or in part, by any person other than the person making the offer, the name of each person having such ownership and nature of his rights; and the name and address of the person making the offer.¹⁷ Thereafter, if the sample and information meet the required conditions, the Commission will forward to the person making the offer a form of contract ready for his acceptance.¹⁸

These specifications for sale make no mention of any other material which the Commission will purchase besides uranium oxide, nor do they establish minimum prices for other types of source material. However, as previously mentioned, the Commission is purchasing certain amounts of thorium salts, though no special regulations are provided for such purchases. At the present time, however, ores from which uranium oxide may be recovered seem to be the primary domestic source material which the Commission is interested in procuring. These regulations do not consider who is to be paid for the material purchased, the offeror, the claim holder, the discoverer, or other person. It is assumed they will pay the owner or owners of the material, because the Commission asks for that information in the offer to sell, however, no procedure is provided for determining ownership.

It must be remembered that this procedure is relatively unimportant, since no ore has been delivered to the Commission thus far which meets the high quality demanded by these regulations, that is, 10% U_3O_8 by weight.

14. 10 Code Fed. Regs. Sec. 60.1 (a) and (b) (1949).

15. 10 Code Fed. Regs. Sec. 60.1 (e) (1949).

16. 10 Code Fed. Regs. Sec. 60.1 (f) (1949).

17. 10 Code Fed. Regs. Sec. 60.1 (c) (1949).

18. 10 Code Fed. Regs. Sec. 60.1 (d) (1949).

II. Bonus Provisions

The Commission, by regulation, has established a bonus for discovery and production of high grade uranium. The Commission will pay, in addition to the guaranteed minimum price established, a bonus of \$10,000 for delivery to the Commission of the first 20 short tons of uranium-bearing ores or mechanical concentrates assaying 20 per cent or more U_3O_8 by weight from any single mining location, lode or placer, which has not previously been worked for uranium.¹⁹ Anyone lawfully entitled to deliver ore to the Commission under the conditions previously outlined for selling ore may claim the bonus, but the Commission reserves the right to determine whether production from a given location is the first production from such location, whether such location or property has previously been worked for uranium, whether production is such as to which a bonus has already been paid, or whether for any reason a bonus is not payable, using in their determination the mining laws of the United States. Also, a bonus will be paid only once for production on any single location.²⁰ These are all conditions, in addition to the conditions concerning quantity and quality of ore, which must be met before such a bonus is paid. However, the regulations provide for no procedure in determining whether the conditions have been met, such as hearings, appeals, etc. Notice of discovery and production of uranium believed to meet these requirements should be forwarded to the Commission and additional information other than required under the offer to sell must be furnished as to: (1) a description of the location or property, (2) name of owner of record of property and (3) location of recorder's office where ownership is located.²¹ Upon analysis of the sample and an inspection of the property, if the Commission determines that production, quality and other requirements are met, the Commission will pay the bonus in addition to the minimum price established when the delivery of the ore is completed.²²

Again, this bonus procedure is relatively unimportant, since no ore meeting this high quality (20% U_3O_8 by weight) has ever been delivered to the Commission and therefore no one has ever received this bonus.

DOMESTIC URANIUM PROGRAM FOR LOW GRADE URANIUM ORES

I. Purchasing Provisions

As stated previously the procedure under Circular 5, Revised, is the one which has been used almost exclusively by the Commission in purchasing uranium ore although it purportedly applies only to roscoelite-type or carnotite-type ores produced in the Colorado Plateau area. Therefore, this procedure is very important, since any low grade domestic ore found in the United States or its possessions undoubtedly will be sold to the Commission under its provisions until they are changed or expire.

19. 10 Code Fed. Regs. Sec. 60.2(a) (1949).

20. 10 Code Fed. Regs. Sec. 60.2(c) (1949).

21. 10 Code Fed. Regs. Sec. 60.2(d) (1949).

22. 10 Code Fed. Regs. Sec. 60.2(e) (1949).

To stimulate domestic production of uranium bearing ores the Commission has established minimum prices effective through March 31, 1962: for ores assaying less than 0.10 per cent U_3O_8 , no payment; for ores assaying 0.10 per cent, \$1.50 per pound of U_3O_8 ; and from this minimum a 20¢ raise for each 0.01 per cent increase in U_3O_8 assay until the minimum price reaches \$3.50 per pound of U_3O_8 for ores assaying 0.20 per cent and more. The Commission also pays a premium on uranium of 75¢ per pound for each pound of U_3O_8 in excess of 4 pounds of U_3O_8 per short ton of ore and an additional premium of 25¢ per pound for each pound in excess of ten pounds of U_3O_8 per short ton. These premiums amount to bonuses for ores assaying over 9.20 per cent U_3O_8 .²³

For example, if one had 25 tons of uranium ore to sell which assayed 9.30% U_3O_8 each ton would have 6 pounds of U_3O_8 in it. ($.003 \times 2000 = 6$) or a total of 150 pounds of U_3O_8 ($6 \times 25 = 150$). Since the Commission pays \$3.50 per pound of U_3O_8 in ore assaying 0.20% and more, he would receive \$525 ($\$3.50 \times 150 = \525) for this ore. In addition each ton of ore yields 6 pounds of U_3O_8 , therefore he receives 75¢ for each pound in excess of 4 pounds per ton. Hence the seller would receive a \$1.50 premium for each ton ($6 - 4 = 2$; $2 \times 75¢ = \$1.50$). Therefore, the seller would receive a total premium of \$37.50 ($\$1.50 \times 25 = \37.50). The total amount received is \$562.50 ($\$525.00 + \$37.50 = \562.50) for the 25 tons of ore. These calculations do not consider the development or haulage allowance discussed later, or other saleable minerals which might be found with the uranium ore.

The Commission pays a development allowance of 50¢ per pound U_3O_8 contained in ores assaying 0.10 per cent U_3O_8 or more in recognition of the expenditures necessary for maintaining and increasing developed reserves of uranium ores. Sellers must spend this fund for the development or exploration of their properties and sellers delivering in excess of 1000 short tons per calendar year must submit proof satisfactory to the Commission that the funds were so spent. The Commission grants a haulage allowance of 6¢ per ton mile for transportation of ore purchased under these provisions from the mine where produced to the purchase depot specified by the Commission, up to a maximum of 100 miles.²⁴

V_2O_5 (vanadium oxide) commonly associated with uranium ores found in certain formations is also purchased by the Commission under this procedure at 31¢ per pound up to, but not exceeding ten pounds of V_2O_5 for each pound of U_3O_8 contained in ores, though the Commission may publicly announce that it will pay for V_2O_5 in excess of ten-to-one by special agreement with individual producers.²⁵

Except in the case of vanadium no fixed price schedule has been established for other valuable mineral constituents of uranium bearing ores.

23. 10 Code Fed. Regs. Sec. 60.5a (1) (1953 Supp.).

24. 10 Code Fed. Regs. Sec. 60.5a (3) (1953 Supp.).

25. 10 Code Fed. Regs. Sec. 60.a5 (2) (1953 Supp.).

"In certain contracts which have been executed for procurement of uranium ore containing copper, provision has been made for payment for copper in excess of certain minimum requirements."²⁶

There are other requirements to be complied with before the Commission will make these payments. The seller must deliver at his own expense the ore to the Commission's depot at Monticello, Utah, in lots of not less than 10 short tons unless special arrangements have been made.²⁷ "However, several ore buying stations have now been established and, depending on geographical location and other factors, arrangements may be made to deliver acceptable ores at Commission ore buying stations other than Monticello. Ores may also be sold in privately owned and operated uranium ore processing plants which produce uranium concentrate for sale to the Commission provided such ores are amenable to treatment in the plants. Private plants accepting ores meeting specifications of Circular 5, Revised, are required to pay prices no less favorable than the guaranteed minimum prices established in the Circular."²⁸ There is an ore buying station in Riverton, Wyoming operated by the American Smelting and Refining Co., and for ore produced in the Black Hills area, there is an ore buying station at Edgemont, South Dakota, operated by the same company. Additional information which might be necessary to a Wyoming explorer for ore may be obtained at the Atomic Energy Commission's Exploration sub-office at Douglas, Wyoming. However, for those who desire to sell ore, it would be advisable to write to the U. S. Atomic Energy Commission, Colorado Raw Materials Office, Post Office Box 270, Grand Junction, Colorado.

Producers may deliver without a written contract up to 1000 short tons of ore complying with the provisions in one calendar year, but if one desires to deliver more than this in one year, he must have a contract with the Commission including rate of delivery and the total quantity of ore to be delivered.²⁹

The regulations provide that the Commission will be interested in discussing arrangements for delivery to it of types of uranium bearing materials other than those for which guaranteed prices have been established, such as tailings, mill products, and ores of types not acceptable under these regulations.

Ores will not be accepted under these regulations which in the Commission's judgment: (1) contain less than 0.10 per cent U_3O_8 (but ores delivered to the Commission become their property, unless otherwise agreed, as liquidated damages for the expense of weighing, sampling, and assaying³⁰); (2) contain more than three parts of lime ($CaCO_3$) to one

26. See note 12, *supra*.

27. 10 Code Fed. Regs. Sec. 60.5 (f) (1953 Supp.).

28. See note 12, *supra*.

29. 10 Code Fed. Regs. Sec. 60.5 (d) and (e) (1953 Supp.).

30. 10 Code Fed. Regs. Sec. 60.5a (1) (1953 Supp.).

part of V_2O_5 , or a total of more than 6 per cent lime in the ore; (3) contain impurities deleterious to the buyer's extraction process or for any other reason are not amenable to it; (4) contain lumps in excess of twelve inches in size.³¹ Thus, a certain amount of risk is involved when a seller delivers ore to an ore buying station, that is, the risk that his ore will not meet the rigid specifications and that he will receive no payment for such ore. Further, as noted, in that event the ore will not be returned to the seller. To reduce these risks, a seller should, before he delivers the ore, make sure that (1) he has 10 tons to sell or has made provisions for selling less than 10 tons; (2) has taken representative samples of various parts of his ore (or has sent samples to a Commission office for approval) to be sure it contains a sufficient percentage of U_3O_8 ; (3) that it does not contain too much lime or impurities; and (4) does not contain lumps larger than 12 inches.

The Commission does its own weighing, sampling, and assaying at its own expense in determining the price to be paid. If there is disagreement on assays, the Commission selects an umpire whose determination is final if within the limits of the two parties, if not, the assay which is nearer to that of the umpire prevails.³²

These regulations provide no guaranteed price for any source material other than uranium oxide. Therefore, if other source material is to be sold to the Commission it must be by special contract, with no guarantee to the seller of what price he might obtain.

II. Bonus Provisions

The bonus provisions discussed herein are for low grade uranium ore, as distinguished from the previously discussed bonus which is for high grade ore. By the Commission's regulations a bonus payment is provided for delivery of uranium ores from new mining property located in the United States, its Territories, possessions or the Canal Zone to Commission ore-buying stations and qualified uranium mills as set out in the regulations.³³ The bonus provision is not restricted to any particular type of ore, and it applies to ore found anywhere in the United States. The bonus amounts to a doubling of the base sale price paid for ore in the purchasing regulations for low grade ore set out above (not a doubling of the extra amount received as a premium for higher grade ore, nor a doubling of development or haulage allowance).³⁴ Bonus payments will be made on eligible ore until payments on 10,000 pounds of contained uranium oxide are received, less the number of pounds, if any, accepted by stations or mills from the mining property between April 9, 1948 and February, 1951, inclusive.³⁵ Therefore, since the maximum amount of bonus that can be

31. 10 Code Fed. Regs. Sec. 60.5a(4) (1953 Supp.).

32. 10 Code Fed. Regs. Sec. 60.5(g) (1953 Supp.).

33. 10 Code Fed. Regs. Sec. 60.6(a), (b), (g)(2) and (n) (1953 Supp.); for other qualified ore-buying stations and uranium mills, see the Atomic Energy Commission's Domestic Uranium Program Circular 6.

34. 10 Code Fed. Regs. Sec. 60.6(d) (1953 Supp.).

35. 10 Code Fed. Regs. Sec. 60.6(d) and (e) (1953 Supp.).

received per pound of U_3O_8 is \$3.50, the maximum bonus that can be received is \$35,000 ($\$3.50 \times 10,000$), but it may be less than \$35,000 if the amount delivered is less than 10,000 pounds or the ore assays less than 0.20 per cent U_3O_8 .

In order for a mining property to be eligible for bonus payments the following conditions must be met:

1. The total amount of uranium oxide accepted by a station or mill from that property must not have exceeded 10,000 pounds between April 9, 1948 and February 28, 1951.³⁶ In view of this requirement it is apparent that the bonus payment is primarily designed to encourage the discovery of new mines and to assist in their development in their early stages, rather than to encourage the development of old mines which have already delivered 10,000 pounds or more of uranium oxide.

2. The property must be within the United States, its Territories, possessions or the Canal Zone.³⁷

3. The property must be certified by the Commission as eligible with the following criteria as guides:

(a) The purpose of the bonus is to encourage and assist the development of new uranium sources.³⁸

(b) The mining property may consist of a placer or lode location, or a tract which the Commission finds is comparable or appropriate, but contiguous locations or tracts of a common holder may be only a single eligible unit if the tracts are held in common in the manner set forth in (c) below.³⁹ Under this provision, adjacent or neighboring mining claims held by one owner or lessee, and all of them producing uranium ore, would be entitled to bonus payments for the first 10,000 pounds of uranium oxide produced from all of them together—not a bonus payment for each 10,000 pounds from each separate tract.

(c) The title or interest in the mining property should be of ownership or lawful possession of mining rights (owner or lessee).⁴⁰ This regulation makes it possible for a lessee of the mineral rights to obtain the bonus payments. Uranium leases accordingly should be carefully drafted so as to explicitly provide that the lessor's royalty does or does not relate to bonus payments. In the case of split check leases, piece rate contracts and other like arrangements, where either employees or independent contractors conduct the mining operations and receive therefor a percentage of the proceeds of the ore produced, the person who grants the right to conduct these mining operations is considered by the AEC as the holder of the mining property.⁴¹ Thus, this regu-

36. 10 Code Fed. Regs. Sec. 60.6(g) (1) (1953 Supp.).

37. 10 Code Fed. Regs. Sec. 60.6(g) (2) (1953 Supp.).

38. 10 Code Fed. Regs. Sec. 60.6(g) (3) (i) (1953 Supp.).

39. 10 Code Fed. Regs. Sec. 60.6(g) (3) (ii) (1953 Supp.).

40. 10 Code Fed. Regs. Sec. 60.6(g) (3) (iii) (1953 Supp.).

41. Ibid.

lation indicates that such holder is the person entitled to the bonus payments. Although, again, nothing precludes the parties from agreeing among themselves as to how bonus payments are to be allocated.

(d) The mining property, if it is made up of a location or locations, should contain at least 15 acres, with the minimum size of mining properties to be established by the Commission in individual cases.⁴²

(e) The division of a single unit of mining property into smaller units on or after March 1, 1951, will not be recognized in determining its eligibility for bonus payments; however, consolidation or merger of contiguous mining properties on or after March 1, 1951, will not affect the eligibility of the separate properties for bonus payments.⁴³ By this provision, A, who is the owner or lessee of a unit of mining property, two sections of which are producing uranium ore eligible for bonus payments, cannot sell or assign one section to B after March 1, 1951, thereby allowing both A and B to receive bonus payments; the unit is still entitled to only one bonus payment for 10,000 pounds of uranium oxide produced from the unit. But this provision does not prevent A from purchasing or leasing a mining unit adjacent to his after March 1, 1951, and receiving bonus payments on both his and the newly acquired unit.

(f) Merely because an area fails to meet all these criteria does not eliminate the unit from certification in special circumstances; on the other hand, technical compliance with all the criteria will not necessarily make a property eligible.⁴⁴

The Commission reserves the right to determine the amount of any bonus payments to be made, whether the property should be certified as an eligible mining property, the person to whom the bonus should be paid, and, whether for any reason a bonus is not payable.⁴⁵

Ores for which bonus payments will be made must have been delivered to and paid for by either a station or mill, but in special cases the bonus will be paid where ores have been accepted but payment is still pending.⁴⁶ The same conditions prevail before an application for a bonus can be made.⁴⁷

Leases granted by the Commission are not eligible for bonus payments except under special circumstances and as provided for in the lease.⁴⁸

Bonus payments made for particular ores are the only bonus payments receivable on those ores.⁴⁹

42. 10 Code Fed. Regs. Sec. 60.6(g) (3) (iv) (1953 Supp.).

43. 10 Code Fed. Regs. Sec. 60.6(g) (3) (v) (1953 Supp.).

44. 10 Code Fed. Regs. Sec. 60.6(g) (3) (vi) (1953 Supp.).

45. 10 Code Fed. Regs. Sec. 60.6(h) (1953 Supp.).

46. 10 Code Fed. Regs. Sec. 60.0(f) (1953 Supp.).

47. 10 Code Fed. Regs. Sec. 60.6(k) (1953 Supp.).

48. 10 Code Fed. Regs. Sec. 60.6(g) (vi) (1953 Supp.).

49. 10 Code Fed. Regs. Sec. 60.6(h) (1953 Supp.).

The Commission may require an applicant for bonus payments to keep for its inspection, records concerning production and deliveries of ores for which application is made.⁵⁰

The Commission may also establish procedures to carry out the bonus program.⁵¹

Applications for certification of a property as eligible should include a description of the mining property indicating its size, location, ownership, interest of the applicant, public recording, and a statement that the total amount of uranium oxide in ore accepted by stations or mills from that property between April 9, 1948 and February 28, 1951, was less than 10,000 pounds. Forms are provided for this application. Certification is required before bonus payments will be made. The Commission may require information and may make inspections in determining the property's eligibility for bonus payments and amounts to be paid.⁵² Application for bonus payments should be made on a prescribed form and in addition to the application the Commission may require other information as it finds necessary.⁵³ To obtain these applications and any other information concerning sale of ore or bonus payments in the Wyoming area, write to: U. S. Atomic Energy Commission, Colorado Raw Materials Office, P. O. Box 270, Grand Junction, Colorado.

THE AEC'S LEASING POWERS AND POLICIES

The Atomic Energy Act of 1954 and the Multiple Mineral Development Act both give the Commission authority to lease lands belonging to the United States for mining or prospecting for source materials.⁵⁴ The Commission has exercised this right in the past based on the reservation to the United States of all rights to source materials in the public lands, but leases have only been made on lands withdrawn by the AEC or lands which prior to the adoption of the Multiple Mineral Development Act were not open to entry under the general mining laws because of prior segregation under the Mineral Leasing law.⁵⁵ The latter type lease is no longer granted by the Commission, since the Commission terminated, effective December 12, 1954, Domestic Uranium Program Circular 7.⁵⁶ These leases have previously been negotiated and will undoubtedly continue to be negotiated with no general procedure therefor having been established by the Commission by regulation. Therefore, a person desiring to lease land withdrawn by the AEC does not know if he can obtain such a lease,

50. 10 Code Fed. Regs. Sec. 60.6 (p) (1953 Supp.).

51. 10 Code Fed. Regs. Sec. 60.6 (h) (1953 Supp.).

52. 10 Code Fed. Regs. Sec. 60.6 (i) (1953 Supp.).

53. 10 Code Fed. Regs. Sec. 60.6 (j) (1953 Supp.).

54. 68 Stat. 934 (1954), 42 U.S.C.A. Sec. 2097 (Supp. 1954); 68 Stat. 716 (1954), 30 U.S.C.A. Sec. 521-531 (Supp. 1954).

55. The segregation of public lands from entry under the general mining laws by the Mineral Leasing law is discussed by Bloomenthal, Multiple Mineral Development on the Public Domain, *supra* p. 139 in this symposium.

56. Seventeenth Semi-annual Report of the Atomic Energy Commission (January, 1955), p. 5.

what procedure to follow to obtain it, or what provisions he might expect under the lease. However, the Commission is now holding hearings on the procedure to adopt with respect to leases.

The procedure with respect to lands withdrawn by the AEC is as follows: The Commission requests and acquires through the Department of Interior the withdrawal from public entry of lands that are not actively explored by private interests, which it believes are favorable to uranium exploration and which it wishes to explore. Generally, if the AEC exploratory work discloses a uranium deposit, the lands are leased by the AEC for mining as government controlled land, while those lands found containing no uranium are restored to the public domain for public entry.⁵⁷ The Multiple Mineral Development Act provides that such leases may also be issued for lands administered for National Park, monument, and wildlife purposes only when the President, by Executive order, finds and declares that such action is necessary in the interests of national defense.⁵⁸ Since AEC leases have been an important source of ore, and since the new Atomic Energy Act no longer reserves source material in public lands to the United States, an express leasing provision was necessary. Generally a royalty is required under these leases, the royalty compensating the government for the expense incurred in the discovery. The legislative history relating to the enactment of this provision discloses the following: "It is the intent of Congress that this leasing power should be invoked only where it is the only means of achieving private development of deposits of source material in lands belonging to the United States. It is not intended to supplant the mining laws in any normal situation."⁵⁹

EVALUATION OF THE ATOMIC ENERGY ACT OF 1954 AND THE PRESENT AEC REGULATIONS

Under the new Atomic Energy Act the deletion of the reservation of source materials in public lands to the United States will further encourage the search for and the production of source materials. Also, the provision in the Act giving atomic energy information abroad may strengthen our capacity to build the raw materials base on which our entire atomic energy program rests. The Act, as previously stated, grants broad powers to the Commission to acquire source material. It also includes the leasing provision previously discussed.

The regulations of the Commission concerning guaranteed minimum price and bonus payments for uranium provide an incentive to search for and develop new sources of uranium ore. However, this guaranteed price does not obligate the Commission to buy uranium for any length of time or for any specific amount. The guarantee is merely a guaranteed payment or price as long as the Commission desires to buy uranium ore.

57. Sixteenth Semi-annual Report of the Atomic Energy Commission (July, 1954), p. 4.

58. 68 Stat. 716 (1954), 30 U.S.C.A. Sec. 521-531 (Supp. 1954).

59. 1954 U. S. Code Cong. and Admin. News p. 3473.

As to low grade ore when the sale of such ore is to exceed 1000 tons during any calendar year, a contract with the Commission is required, which provides, among other things, the total quantity of ore to be delivered.⁶⁰ The Commission can, therefore, limit by contract the amount of ore which it is going to purchase. We may assume that there is a guaranteed market for the ore until the Commission finds it no longer wishes to buy such ore. Thus, if another kind of source material is discovered which is better adapted to producing nuclear power, the guaranteed price provision would be useless to uranium producers, since the Commission is not obligated to purchase uranium ore.

With respect to the bonus provisions, it is argued by some that a more desirable system would be a general increase in price schedule rather than the bonus which doubles the base price for the first 10,000 pounds delivered. Actually, except where there has been a real bonanza, it has been difficult for a substantial part of the uranium industry to make money producing uranium. The bonus provision has, however, been successful in inducing prospectors to search for uranium, in paying for original production costs and in attracting capital to invest in uranium ventures. By January of 1955 over \$4,377,174 had been paid out in bonus awards on low grade ore ranging from \$1,854 to a maximum of \$35,000 to one producer.⁶¹

For an attorney who is trying to advise a client as to the policies and powers of the AEC in procuring source material, the Atomic Energy Act and the Commission's regulations spell out fairly clearly the procedure to be followed and what might be expected from a sale of source material to the Commission. Yet, the Act and regulations could more clearly define the policies, intents and purposes of the AEC under their procurement powers in order that the specific provisions of the Act and the regulations would be more easily understood. The regulations fail completely to create any leasing procedure, nor do they state how issues are to be decided within the Commission, that is, by the Administrative Procedure Act, by informal procedures, etc.

OTHER AIDS AND POLICIES OF THE AEC IN PROCURING SOURCE MATERIAL

The Atomic Energy Commission finances a program of research to develop more effective methods of locating new uranium deposits. A large part of this research has been conducted by the United States Geological Survey. The exploration programs are carried out by the Commission's geological staff, by the U.S.G.S., and the United States Bureau of Mines under contract with the Commission and by private contractors. Important aspects of the exploration effort are the development of new and improved techniques and instruments, geological guides, and the dissemination of information designed to promote greater participation in the search for uranium by mining companies and prospectors. The Commission, in con-

60. 10 Code Fed. Regs. Sec. 60.5 (e) (1953 Supp.).

61. Seventeenth Semi-annual Report of the Atomic Energy Commission (January, 1955), p. 6.

junction with the Geological Survey, has been largely responsible for the development of instruments and techniques used in airborne surveys which have covered large areas of potential uranium producing land. The U.S. G.S. and Bureau of Mines have conducted the basic geological and mineralogical studies essential to the domestic exploration program. A cooperative program has been launched to utilize the exploration potential of the petroleum industry in uranium exploration. The Commission, and the U.S. Geological Survey and Bureau of Mines, on behalf of the Commission, have conducted extensive amounts of exploratory drilling and more is planned. To increase the effectiveness of the expanding domestic uranium exploration program, the Commission has established new exploration branch offices or sub-offices where needed. For the same purpose, except that they are for production rather than for the exploration of uranium, the Commission has established new ore-buying stations.⁶²

Roads are built to uranium producing areas under the Federal Aid Highway Act, and through allocations from the Bureau of Public Roads.

The Commission has prepared two manuals, "Prospecting with a Counter" and "Prospecting for Uranium," for the use of uranium prospectors, and many copies have been sold. These books are available from the Superintendent of Documents Office of Washington, D. C.

In conjunction with the extensive airborne radioactivity surveys being carried out by the Commission, information concerning the location of surface areas of unusual radioactivity disclosed by aircraft-borne detection instruments are being made public in the form of index maps. These maps are posted at all AEC exploration offices, and at certain offices of the U. S. Geological Survey and Bureau of Mines. These maps are posted in Wyoming at the AEC's exploration office in Douglas and at the U.S.G.S. office in Laramie. The Commission also has continued to file geological and mineralogical reports on certain results of domestic exploration by the AEC and Geological Survey at a number of depository libraries. For the Wyoming area these reports may be obtained at the library at the University of Wyoming at Laramie, or at the Denver Public Library at Denver, Colorado.

As a further aid to prospectors, the Commission and the Geological Survey maintain a free sample examination service. The free sample examination service for the Wyoming area for anyone who believes he has discovered uranium is located at the U. S. AEC at Post Office Box 270, Grand Junction, Colorado. The Natural Resources Research Institute, 120 Lewis Street, Laramie, Wyoming, makes geiger counter tests for radioactivity on Wyoming samples without charge, provided the general area from which the samples are obtained is reported. The Institute will also determine whether radioactivity is due to uranium for \$1.00 and will analyze samples for uranium reporting percentage present for \$7.50.

The Defense Minerals Exploration Administration, as a part of its

62. *Id.* at pp. 4-5.

program of providing increased supplies of scarce minerals and metals, has approved a number of loans for uranium exploration.

All of these activities, policies and aids, both by the Commission and other governmental agencies, are a part of the policy and plan of the Commission to procure source materials. It may be concluded that the purpose of the domestic program is to develop production to the fullest extent consistent with a sound economic policy.

MERL B. CASE

VALUABLE MINERAL DISCOVERY

Concern has been expressed with respect to the validity of titles to mining claims in the Rocky Mountain Region. This is due in large part to the lack of a working formula as to what constitutes a valuable mineral discovery sufficient for the validation of a mining claim on the federal public domain. Whether there has been a discovery of valuable minerals becomes vitally important in the following situations: (1) Discovery is an essential element in the location of a valid mining claim;¹ (2) The establishment of the rights of rival claimants to possession;² (3) For the granting of a patent to the land by the Department of the Interior.³ This question is extremely important to prospectors for uranium because of the nature and occurrence of the mineral. Failure to establish that a discovery has been made may lead to loss of valuable mineral land.

A valuable discovery is defined as one sufficient to justify a person of ordinary prudence, whether or not a skilled miner, in expending time and money in exploration and development with a reasonable expectation of making a profit.⁴ This somewhat broad standard is difficult to apply and the purpose of this article is to examine concrete applications of the standard.

The existence of a valuable mineral deposit within the limits of a claim is a prerequisite to valid location.⁵ There must be something beyond

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1. *Chrisman v. Miller*, 197 U.S. 313, 25 S.Ct. 468 (1905); *Kramer v. Sanguinetti*, 33 Cal. App. 2d 303, 91 P.2d 604 (1939); *United States v. Mobley*, 45 F.Supp. 407 (1942); *Pitcher v. Jones*, 71 Utah 453, 267 P. 184, 186 (1928).
 2. *Cameron v. United States*, 252 U.S. 450, 40 S.Ct. 410 (1920); *Erhardt v. Boaro*, 113 U.S. 527, 5 S.Ct. 560 (1885); *Beals v. Cone*, 27 Colo. 473, 62 Pac. 948, 952 (1900). In the absence of discovery the locator can protect himself against relocation by others only by continued actual occupancy and diligently prosecuting work looking to the discovery of mineral, *Smith v. Union Oil Co.*, 249 U.S. 347, 39 S.Ct. 308 (1919).
 3. *United States v. T. J. Rochon*, I. D. Case No. A-26203 (1951); *United States v. J. L. Perkins, et al.*, I. D. Case No. A-26223 (1951); *United States v. F. B. Wheelright, et al.*, I. D. Case No. A-26263 (1952).
 4. *Cameron v. United States*, 252 U.S. 450, 40 S.Ct. 410 (1920); *Castle v. Womble*, 19 L. D. 455 (1894); *Chrisman v. Miller*, 197 U.S. 313, 25 S.Ct. 468 (1905); *In re Yard*, 38 L. D. 59 (1909); *Charlton v. Kelly*, 156 Fed. 433, 436 (1907); *Garibaldi v. Grillo*, 17 Cal. App. 540, 120 Pac. 425, 426 (1912); *United States v. Mobley*, 45 F. Supp. 407 (1942); *Rev. Stat. 2320*, 17 Stat. 91, 30 U.S.C.A. Sec. 23.
 5. *Cole v. Ralph*, 252 U.S. 286, 295, 296, 299, 40 S.Ct. 321 (1920); *Ponton v. House*, 256 P.2d 246, 247 (1953); *Butte & S. Co. v. Clark-Mont. Co.*, 249 U.S. 12, 39 S.Ct. 231 (1919); *Creede and Cripple Creek, etc., Min. Co. v. Uinta Tunnel, etc., Co.*, 196