STATISTICAL DATA

of

THE URANIUM INDUSTRY

January 1, 1970



U. S. Atomic Energy Commission Grand Junction Office Grand Junction, Colorado

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URANIUM ORE PURCHASES BY AEC

Fiscal Years 1949 - 1962

	At Buying Stations		Under Special Arrangements		Total	
FY	Tons of Ore	Pounds of U3O8	Tons of Ore	Pounds of U3O8	Tons of Ore	Pounds of U3O8
1949	28, 742	126, 302	-	-	28,742	126,302
1950	65,602	351, 152	-	-	65,602	351,152
1951	55,904	263,663	-	-	55,904	263,663
1952	87, 191	445, 725	1,300	4,713	88, 491	450, 438
1953	121,015	707, 581	48,960	232, 191	169,975	939,772
1954	267,510	1,601,241	110, 515	698,248	378,025	2, 299, 489
1955	480, 232	2,922,826	126,853	962,490	607,085	3, 885, 316
1956	753, 595	4, 347, 465	52,303	280,677	805,898	4,628,142
1957	587, 495	3,778,372	17,016	97,921	604, 511	3, 876, 293
1958	220,649	1,163,049	1,507	5,934	222,156	1,168,983
1959	138, 596	1,531,374	734	3,806	139, 330	1,535,180
1960	113, 345	1,099,928	31,634	148,236	144,979	1,248,164
1961	41,465	453, 773	179,966	922,201	221,431	1,375,974
1962	30,408	265, 601	60, 351	332, 210	90, 759	597, 811
Total	2,991,749	19,058,052	631,139	3,688,627	3,622,888	22, 746, 679

Note: First and second columns represent ore purchased at 11 different ore-buying stations operated for varying lengths of time in the west by AEC between 1948 and 1962. The third and fourth columns show ore bought under special arrangements with mills and the AEC ore-buying agent to purchase ore in certain areas for a limited time, and usually while mills were under construction. All of the 3,622,888 tons or ore bought during this period gradually was sold back to the mills, and at the end of December 1966, the AEC had <u>no</u> ore stockpiles. The 11 AEC ore-buying stations were at Marysvale, White Canyon, Moab, and Monticello, Utah; Shiprock and Grants, New Mexico; Globe and Tuba City, Arizona; Edgemont, South Dakota; and Riverton and Crooks Gap, Wyoming. The last AEC station at Monticello, Utah, was closed on March 31, 1962, with the termination of Domestic Uranium Program Circular 5, Revised.

State	Tons of Ore	% U308	Contained Tons U ₃ O ₈
New Mexico	36,424,090	0.22	79,410
Utah	11,985,730	0.32	38,900
Wyoming	15,517,550	0.23	35,560
Colorado	13,171,750	0.25	32,700
Arizona	2,965,900	0.30	8,950
Others: North Dakota, Alaska, California, Washington, Oregon, Texas, Nevada, South Dakota, Montana, Idaho	3,758,220	0.20	7,870
Total:	83,823,240	0.24	203,390

Uranium Ore Shipments to Mills 1948 Thru 1969 By State

Calendar	Total Receipts		Open Pit P	roduction	Undergrour	Underground Production	
Year	Tons Ore	Tons U ₃ O ₈	Tons Ore	Tons U3O8	Tons Ore	Tons U3O8	
1950	251,100	810	22, 878	98	228, 222	712	
1951	347, 418	1,088	28, 535	177	318, 883	911	
1952	435, 425	1,289	64, 836	271	370, 589	1,018	
1953	734, 204	2,315	179,087	574	555, 117	1,741	
1954	1,106,438	3, 541	265, 799	934	840, 639	2,607	
1955	1,524,180	4, 425	373, 616	855	1,150,564	3, 570	
1956	3,004,569	8, 433	1,247,015	3, 195	1,757,554	5,238	
1957	3, 695, 320	9,843	1,613,613	3,373	2,081,707	6, 470	
1958	5, 178, 264	14,004	2,358,555	5,401	2, 819, 709	8,603	
1959	6, 934, 951	17, 377	2,206,460	4,379	4, 728, 491	12,998	
1960	7,970,178	18,844	2, 393, 382	5,368	5, 576, 796	13, 476	
1961	8,041,007	18, 513	2, 482, 498	5,255	5,558,509	13, 258	
1962	7,052,856	17,085	1,781,531	4,334	5,271,325	12, 751	
1963	5,947,549	14,722	1,879,038	4,411	4,068,511	10, 311	
1964	5, 297, 416	13,889	1, 536, 840	3,368	3,760,576	10, 521	
1965	4, 376, 497	10, 438	1,243,569	3,014	3, 132, 928	7,424	
1966	4, 328, 720	9,906	1, 332, 448	3,113	2,996,272	6, 793	
1967	5, 272, 184	10, 869	1, 593, 376	3,183	3,678,808	7,686	
1968	6, 448, 400	12,570	2,366,489	4,619	4,081,911	7, 951	
1969	5,903,940	12,281	2, 172, 922	5,201	3,731,018	7,080	

URANIUM ORE RECEIPTS AT BUYING STATIONS AND MILLS - WESTERN UNITED STATES

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AEC DOMESTIC URANIUM CONCENTRATE PURCHASES

Fiscal Years 1948-1969

Fiscal Year	Tons U3O8	Cost to AEC (Dollars)	Average Price Per Lb. U3O8 (Dollars)
1948	116	1,660,000	7.14
1949	115	1,960,000	8.53
1950	323	5,950,000	9.21
1951	639	12,800,000	10.01
1952	822	18,400,000	11.19
1953	984	24, 200, 000	12.30
1954	1,453	35,600,000	12,25
1955	2,142	53,600,000	12.51
1956	4,204	97, 800, 000	11,63
1957	7,578	159,600,000	10.53
1958	10,250	196,000,000	9,57
1959	15,160	280, 500, 000	9.25
1960	16,403	287, 140, 000	8.75
1961	17,671	299, 340, 000	8.47
1962	17,248	281,180,000	8.15
1963	15,760	246, 210, 000	7.81
1964	12,583	201, 370, 000	8.00
1965	11,319	181,100,000	8,00
1966 *	10, 109	161,716,000	8.00
1967 *	9,097	145, 552, 000	8.00
1968 *	7,737	123, 787, 000	8.00
1969 *	7,124	99, 553, 000	6.99
Y 1948-1969	168,837	2,915,018,000	8.63

* Production, tons U₃O₈ in concentrates: 1966 - 10, 310; 1967 - 10, 743; 1968 - 12, 062; 1969 - 11, 795.

AEC CONCENTRATE PURCHASES BY STATES

Calendar Year	Colorado	New Mexico	Utah	Wyoming	Others 1/	Total
1947	67		-		-	67
1948	102		-	-	-	102
1949	175	÷	5.÷.1	-	2	177
1950	452	÷-	j. en	-	7	459
1951	620	-	146	-	-	766
1952	743	, -	131	-	-	874
1953	940	- 1	214	(<u>-</u>	9	1,163
1954	1,239	-	280	-	181	1,700
1955	1,483	847	454	-	-	2,784
1956	1,726	2,891	1,222	-	119	5, 958
1957	1,966	2,534	3, 291	-	691	8, 482
1958	2,917	3,604	3,822	1,247	847	12,437
1959	3,278	6,772	3,535	1,675	979	16,239
1960	3,117	7,760	3,034	2,770	956	17,637
1961	2,951	7,750	2,954	2,823	870	17, 348
1962	2,652	7,293	3,188	3,055	820	17,008
1963	2,134	5, 512	3,080	2,566	925	14, 217
1964	1,800	4, 747	2,063	2,216	1,020	11, 846
1965	1,290	4, 591	1,510	2,097	954	10, 442
1966	1,258	4, 393	-	1,944	1,894	9,488
1967	840	4,698	-	1,705	1,182	8, 425
1968	782	4,300	-	1,567	688	7, 337
1969	÷	4,104	-	1,115	965	6,184

In Tons of U3O8

Note: Uranium recorded as a byproduct from the processing of phosphates, euxenites, etc., is not included.

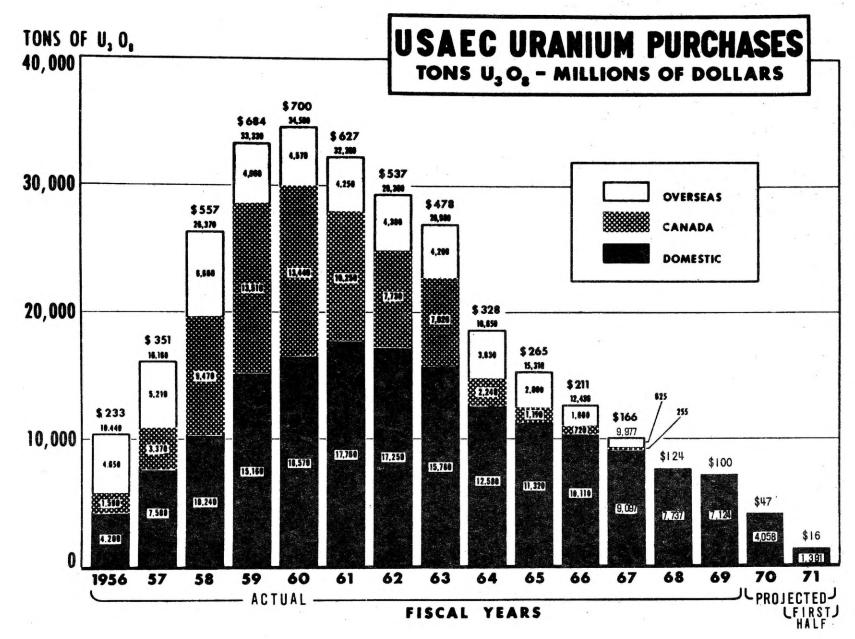
1/ Data included in "Others" category when only one mill is operating in a state.

AEC CONCENTRATE PURCHASES BY STATES IN DOLLARS

Calenda		New	a			
Year	Colorado	Mexico	Utah	Wyoming	Others 1/	Total
1947	\$ 966, 416	\$ -	\$ -	\$ -	\$ -	\$ 966,416
1948	1,531,248	-	-	-	-	1,531,248
1949	3,062,698	-	-		43,257	3,105,955
1950	7, 992, 112	-	1,889,904	-	-	9,882,016
1951	13, 513, 690		2,274,784	-	-	15, 788, 474
1952	17, 162, 956	-	3, 556, 337	-	-	20, 719, 293
1953	22, 148, 487	-	6, 139, 447	-	271,168	28, 559, 102
1954	29, 404, 252		7, 331, 484	-	5, 535, 702	42, 271, 438
1955	34, 340, 966	19, 977, 655	12, 166, 253	-	-	66, 484, 874
1956	40, 968, 966	64, 632, 903	23, 697, 994	-	2,994,487	132, 294, 450
1957	45, 104, 979	50, 920, 016	57, 979, 546	-	12, 501, 186	166, 505, 727
1958	58, 513, 855	66, 462, 035	67, 374, 195	23, 763, 992	17, 490, 633	233, 604, 710
1959	62, 572, 411	112,769,663	63, 852, 745	28, 586, 965	19,981,426	287, 763, 210
1960	61, 257, 000	125, 146, 000	54,641,000	44, 799, 000	18,874,000	304, 717, 000
1961	52,245,000	123, 794, 000	51, 376, 000	45, 361, 000	17,001,000	289, 777, 000
1962	43,058,000	110, 373, 000	52, 174, 000	48, 942, 000	13, 458, 000	268,005,000
1963	34, 126, 227	85, 891, 506	49, 347, 568	41,044,867	14, 810, 470	225, 220, 638
1964	28, 803, 035	75, 975, 170	33, 006, 810	35, 461, 210	16, 317, 025	189, 563, 250
1965	20,631,340	73, 463, 593	24, 163, 851	33, 551, 436	15, 258, 413	167,068,633
1966	20, 118, 000	70,285,000	-	31,094,000	30, 276, 000	151, 773, 000
1967	13,442,000	75, 147, 000	-	27, 275, 000	18,921,000	134, 785, 000
1968	12, 514, 000	68,801,000	-	24,699,000	11,012,000	117,026,000
1969	-	-	-	-	-	72, 336, 000

 $\underline{1}$ / Data are listed as "Others" when only one mill is operating in a state.

Note: Uranium recorded as a byproduct from the processing of phosphates, euxenites, etc., is not included.



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Section II - Uranium Resources:

Ore Production, Ore Reserves, and Potential Resources

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GENERAL DESCRIPTION OF AEC RESERVE ESTIMATES

Estimates of United States uranium ore reserves are computed by the Atomic Energy Commission using company confidential basic data provided by private uranium companies. They represent evaluations of current data on numerous individual deposits using engineering and cost criteria developed from actual production experience. Only material demonstrated to exist by sample data and indicated by engineering and cost analysis to be profitably recoverable has been included.

Only forward operating and capital costs have been used to estimate reserves at a given price. Past capital costs are considered "sunk costs" and the individual deposits may or may not return such costs when mined. This procedure approximates decisions made by industry and is believed to provide the best estimate of the quantity of material that would be produced from a deposit at a given price. Ore cut-off grades are based on operating costs only, but the ore at the average grade must have sufficient value to allow recovery of all forward capital costs. If these conditions are met, it is assumed that the deposits could be developed and put into production.

A predetermined profit margin above costs has not been used in the AEC ore reserve calculations because the rate of return and other criteria which individual companies apply would vary considerably. Therefore, the forward costs approach could include some reserves, at a given price, which might not be exploited if the profit margin ceases to be attractive to the operator.

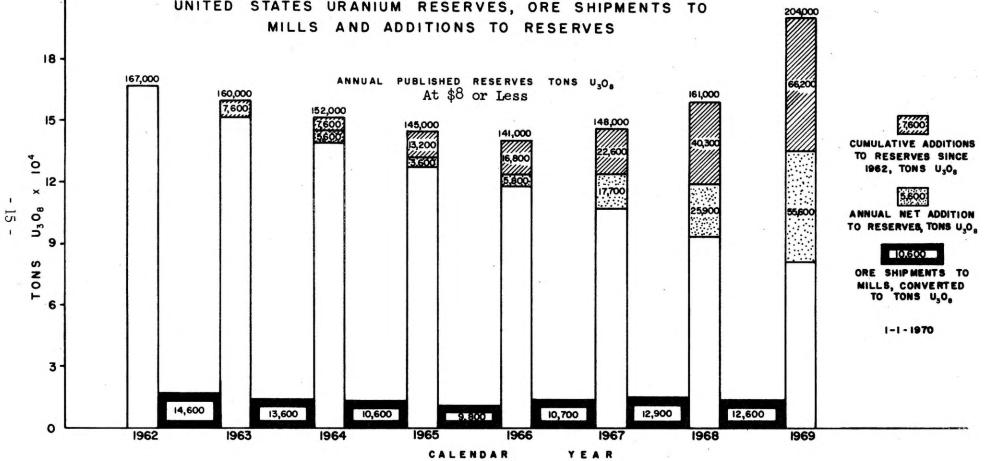
URANIUM ORE RESERVES AND PRODUCTION

1947 Through 1969

	47			
Year End	Shipment to Mills	Cumulative Production	Reserve Estimation ^{2/}	Sum of Cumulative Production & Reserves
1947	-		2,200	2,200
1948	83	83	2,200	2,283
1949	502	585	2,200	2,785
1950	810	1,395	3,000	4,395
1951	1,088	2,483	5,800	8,283
1952	1,288	3,771	7,346	11,117
1953	2,315	6,086	15,203	21,289
1954	3,539	9,625	27,582	37,207
1955	4,425	14,050	67,595	81,645
1956	8,434	22,484	164,055	186,539
1957	9,837	32,321	210,109	242,430
1958	14,003	46,324	225,644	271,968
1959	17,377	63,701	240,996	304,697
1960	18,842	82,543	231,785	314,328
1961	18,513	101,056	178,885	279,941
1962	17,085	118,141	167,738	285,879
1963	14,721	132,862	160,231	293,093
1964	13,888	146,750	150,927	297,677
1965	10,578	157,328	144,702	302,030
1966	10,051	167,379	140,835	308,214
1967	10,866	178,245	147,741	325,986
1968	12,850	191,095	160,819	351,914
1969	12,595	203,690	204,080	407,770

<u>1</u>/ Includes miscellaneous U₃O₈ receipts from mine waters, heap leach, in-situ, and refining residues.

2/ The reserve estimates since 1961 are based on a price of \$8 per pound of U₃O₈ in concentrate. Estimates for the period 1952 to 1961, inclusive, are based on the price of U₃O₈ in ore as set forth in AEC Domestic Uranium Program Circular 5 (Revised). For the period prior to 1952, the basis is arbitrary thickness and grade cut-offs.

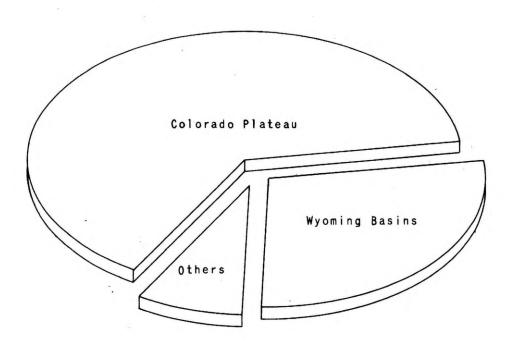


UNITED STATES URANIUM RESERVES, ORE SHIPMENTS TO

ESTIMATES OF RESERVES IN CONVENTIONAL DEPOSITS IN WESTERN U.S. AVAILABLE AT A PRICE OF \$10.00 PER POUND U₃O₈ IN CONCENTRATE

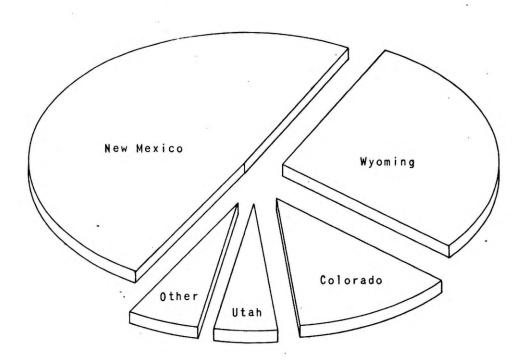
As Of	Tons U ₃ O ₈				
1/1/65	175,000				
1/1/66	195,000				
1/1/67	200,000				
1/1/68	190,000				
1/1/69	200,000				
1/1/70	250,000 <u>1</u> /				

1/ At the end of the year, primarily because of the high rate of drilling, there was a substantial backlog of unevaluated information. Also, the data from some of the 1969 drilling was not yet available to the AEC. The analysis of these data is expected to increase the estimated reserves by about 50,000 tons of U₃O₈, principally in Wyoming, New Mexico, and Texas. Distribution of 1969 U_3O_8 Production in Ore by Resource Region



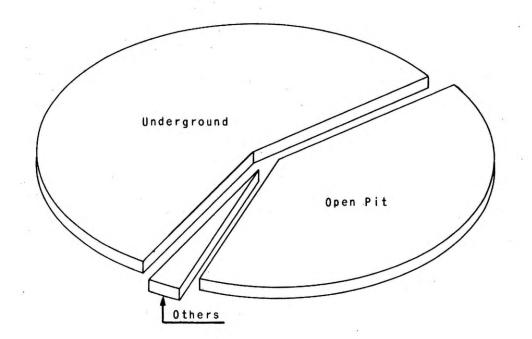
Resource Region	Tons U ₃ O ₈	%. Total Tons U₃0 ₈
Colorado Plateau	8,024	63.71
Wyoming Basins	3,562	28.28
Others: Sierra Nevada Range, Alaska, Coastal U.S., Columbia Plateaus, Northern & Central Basin & Range, Southern Basin & Range, Southeastern Basin & Range, Northern Rockies, Northern Plains, Southern Plains, Gulf Coastal Plains, Colorado & Southern Rockies	1,009	8.01
Totals	12,595	100.00

Distribution of 1969 $U_3 0_8$ Production in Ore by State



State	Pounds U ₃ O ₈	Tons U ₃ O ₈	% Of Total	
New Mexico	12,420,070	6,210	49.31	
Wyoming	7,124,826	3,562	28.28	
Colorado	3,026,977	1,513	12.02	
Utah	1,195,615	598	4.75	
Others: Arizona, South Dakota, North Dakota, and Texas	1,423,573	712	5.64	
Totals	25,191,061	12,595	100.00	

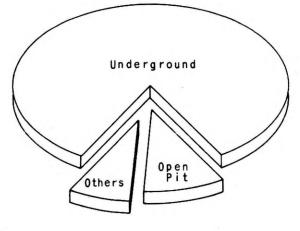
Distribution of 1969 U₃O₈ Production in Ore by Open Pit vs. Underground Mine

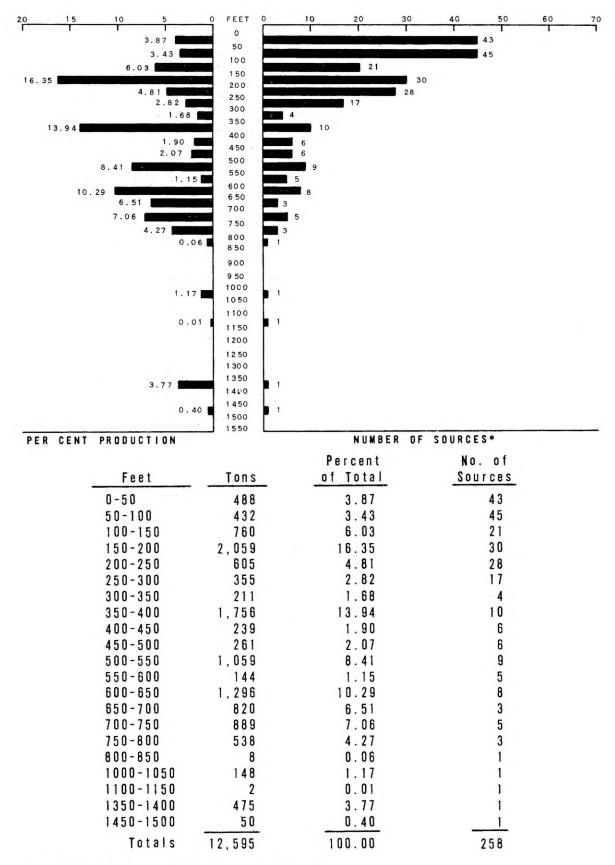


Source	Tons U ₃ O ₈	% of Total
Underground Mines	7,129	56.60
Open Pit Mines	5,152	40.91
Others: Heap Leach, Mine Water In-Situ, St. Louis Airport	314	2.49
Totals	12,595	100.00

Distribution of Production Sources 1969

Source	No.	% Total
Underground	214	82.95
Open Pit	25	9.69
Others	19	7.36
Totals	258	100.00



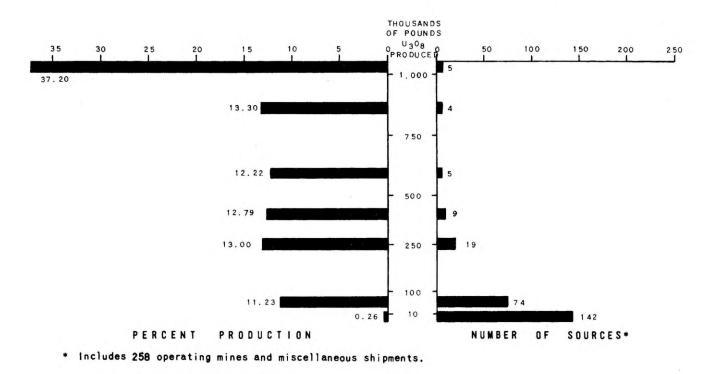


* Includes 258 mines and miscellaneous shipments

Era	Period	Percent	No. of Sources*
Cenozoic	Late Tertiary and Quaternary	2.37	4
	Early Tertiary	30.96	41
Mesozoic	Cretaceous	0.13	3
	Jurassic	60.20	175
	Triassic	3.60	31
Paleozoic	Permian-Pennsylvanian	0.43	1
Precambrian		2.31	3
Tota	als	100.00	258

Distribution of 1969 U_3O_8 Production in Ore by Host Rock

Distribution of 1969 Production Source by Annual Production Rate



DERIVATION OF AEC POTENTIAL RESOURCES OF URANIUM

Generally speaking, "potential" is an estimate of the quantity of uranium in deposits as yet undiscovered. Although the exact location of the potential deposits may be unknown, potential can be assessed qualitatively if the geology and extent of the unexplored favorable environments are adequately known. Providing this inexact nature of potential is recognized and taken into account, reserves plus potential can provide a more useful base for long-range predictions of domestic supply than reserves alone. Estimates for potential resources are for deposits in sandstones and veins in the western U.S.

The reliability of individual potential estimates varies greatly. It is least in those areas where favorability must be inferred solely from geological reconnaissance of formation outcrops. It is best in well mapped areas where mines have been developed and extensive drilling has defined the ore habits, the detailed nature and lateral and vertical extents of the favorable host rocks.

In general, estimates of potential involve the following factors:

- Considerations of the history and results of past and current exploration and mining, geologic investigations, and the districtby-district analysis of production and ore reserve data as the measure for comparisons.
- 2 Projections of established or inferred trends of mineralization and recognition of geologically favorable conditions, both in explored and unexplored areas.
- Available geological knowledge of the area being appraised and concepts of what constitutes favorable geologic environment; knowledge of ore controls, ore habits, patterns of mineralization, and the significance of radioactivity anomalies.
- 4 Consideration of the extent to which the mining districts and other geologically favorable areas remain insufficiently explored.

AEC POTENTIAL ESTIMATES WESTERN UNITED STATES BY YEARS

	Estimated Potential, Tons U3O8					
Year	@ \$8 or less	@ \$10 or less				
1965		325,000				
1968	245,000	350,000				
1970	385,000	600,000				

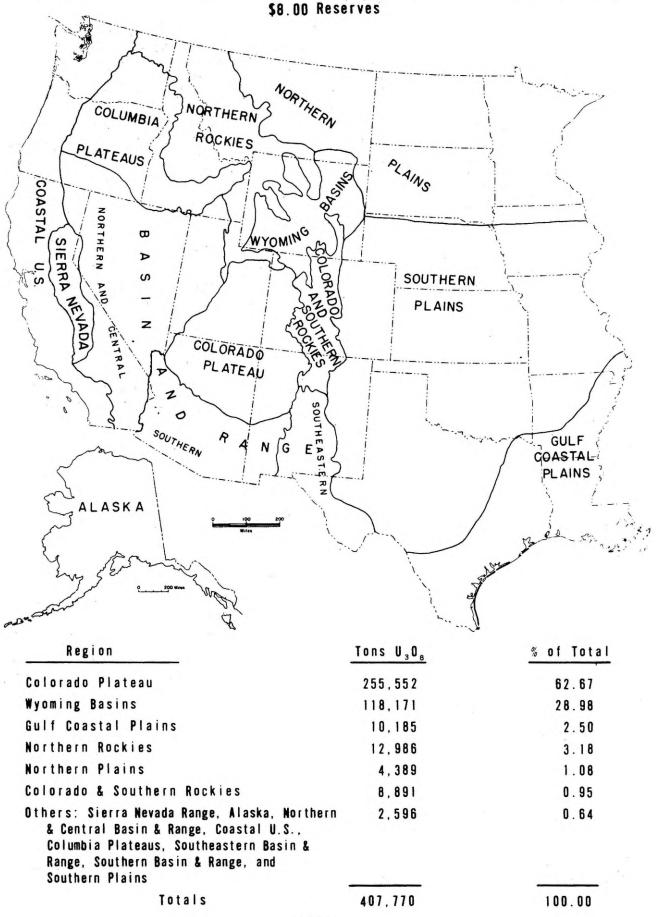
DISTRIBUTION OF 1/1/70 POTENTIAL RESOURCES

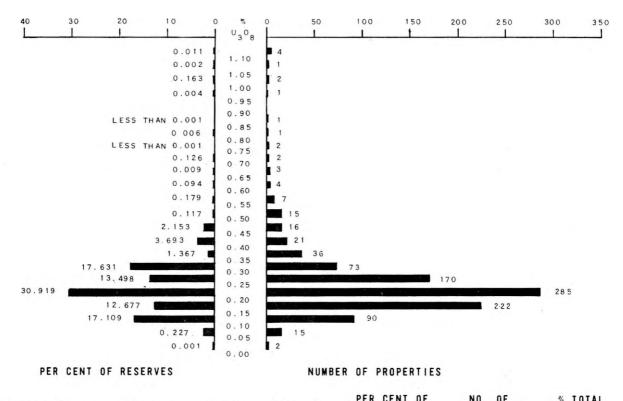
	Estimated Potential, Tons U3O8					
Area	@ \$8 or less	@ \$10 or less				
Colorado Plateau	145,000	190,000				
Wyoming Basins	125,000	250,000				
Others	115,000	160,000				
Total	385,000	600,000				

Section III - Distribution of Deposits

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DISTRIBUTION OF 1948-1969 PRODUCTION & 1/1/70 RESERVES BY RESOURCE REGION

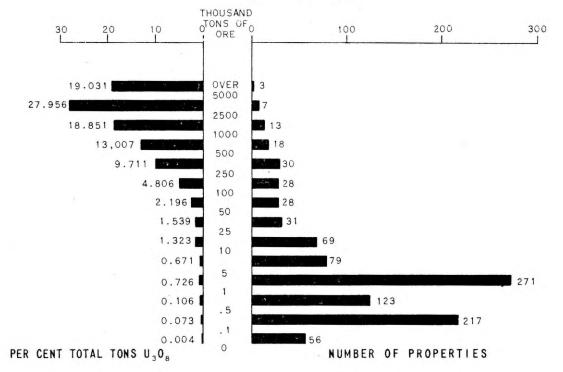




Distribution of 1/1/70 Ore Reserves by Average Grade \$8.00 Reserve

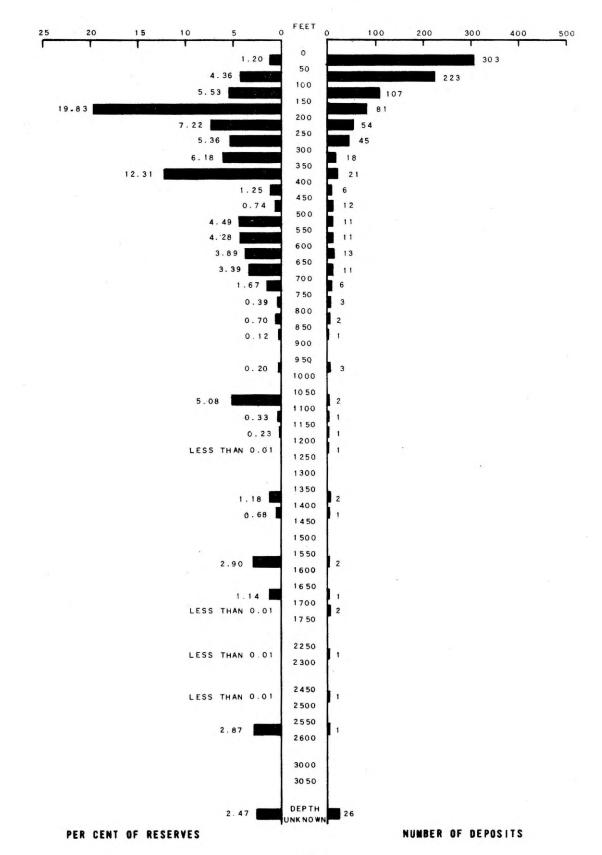
AVERAGE GRADE	TONS ORE	GRADE	TONS U308	PER CENT OF RESERVES	NO. OF PROPERTIES	% TOTAL PROPERTIE
0.00 - 0.05	8.577	0.04	3	0.001	2	0.21
0.05 - 0.10	510,633	0.09	465	0.227	15	1.54
0.10 - 0.15	26,465,749	0.13	34,918	17.109	90	9.25
0,15 - 0.20	15,002,934	0.17	25,873	12.677	222	22.82
0.20 - 0.25	29,216,252	0.22	63,101	30.919	285	29.29
0.25 - 0.30	10,327,964	0.28	27,548	13.498	170	17.47
0.30 - 0.35	11,425,186	0.32	35,982	17.631	73	7.50
0.35 - 0.40	763,450	0.37	2,790	1.367	36	3.70
0.40 - 0.45	1,750,342	0.43	7,538	3.693	21	2.16
0.45 - 0.50	916,648	0.48	4,395	2.153	16	1.64
0.50 - 0.55	47,246	0.51	240	0.117	15	1.54
0.55 - 0.60	63,899	0.57	367	0.179	7	0.72
0.60 - 0.65	30,479	0.64	194	0.094	4	0.41
0.65 - 0.70	2,930	0.69	20	0.009	3	0.31
0.70 - 0.75	34,906	0.74	258	0.126	2	0.21
0.75 - 0.80	249	0.77	2	LESS THAN 0.001	2	0 2 1
0.80 - 0.85	1,587	0.82	13	0.006	1	0.10
0.85 - 0.90 0.90 - 0.95	170	0.89	2	LESS THAN 0.001	1	0.10
0.95 - 1.00	952	0.98	9	0.004	1	0.10
1.00 - 1.05	33,050	1.01	334	0.163	2	0.21
1.05 - 1.10	466	1.06	5	0.002	1	0.10
1.10 +	675	3.532	24	0.011	4	0.41
TOTAL	96,604,345	0.21	204.080	100.000	973	100.00

Distribution of 1/1/70 Ore Reserves by Size of Deposits \$8.00 Reserves

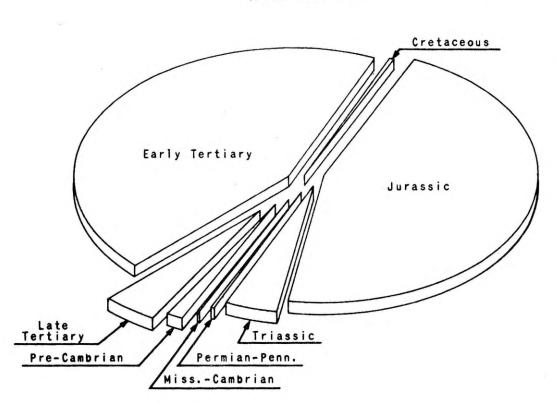


TONS RANGE	TONS ORE	TONS U ₃ 0 ₈	GRADE	% TOTAL Tons U ₃ 0 ₈	NO. PROPERTIES	% TOTAL PROPERTIES
Less Than 100	2,524	9	0.35%	0.004	56	5.76
100 - 500	50,197	148	0.29%	0.073	217	22.30
500 - 1, 00 0	85,795	216	0.25%	0.106	123	12.64
1,000 - 5,000	608,121	1,481	0.24%	0.726	271	27.85
5,000 - 10,000	566,799	1,368	0.24%	0.671	79	8.12
10,000 - 25,000	1,103,843	2,699	0.24%	1.323	69	7.09
25,000 - 50,000	1,091,999	3,141	0.29%	1.539	31	3.19
50,000 - 100,000	2,022,331	4,480	0.22%	2.196	28	2.88
100,000 - 250,000	4,611,396	9,809	0.21%	4.806	28	2.88
250,000 - 500,000	9,928,423	19,818	0.20%	9.711	30	3.08
500,000 - 1,000,000	13,867,394	26,545	0.19%	13.007	18	1.85
1,000,000 - 2,500,000	17,764,438	38,473	0.22%	18.851	13	1.34
2,500,000 - 5,000,000	24,024,085	57,054	0.24%	27.956	7	0.72
5,000,000 - or more	20,877,000	38,839	0.19%	19.031	3	0.30
Totals	96,604,345	204,080	0.21%	100.000	973	100.00

FOR 1/1/70



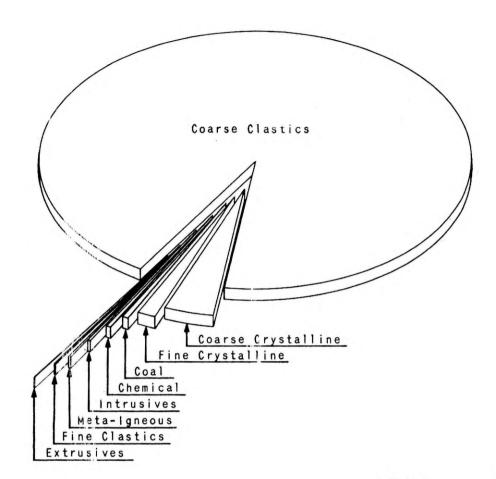
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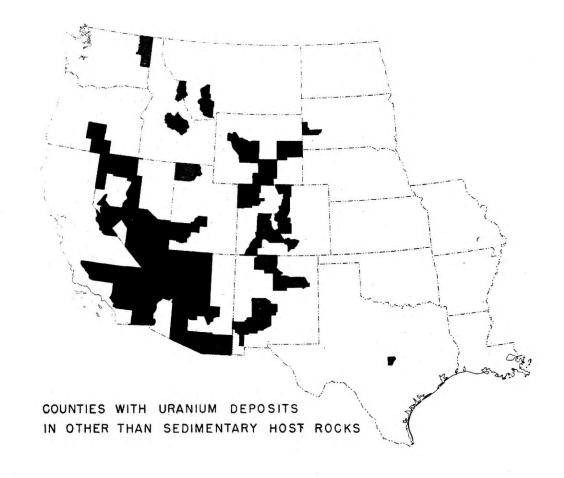
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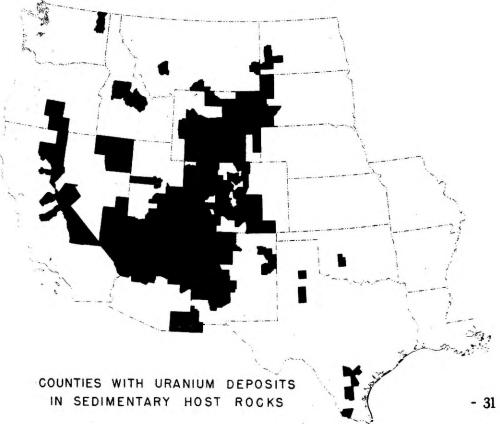
Geologic Age	Tons Ore	Grade	Tons U ₃ 0 ₈	% Total Tons U ₃ 0 ₈	No. Properties
Late Tertiary	7,223,821	0.11%	8,740	4.28	34
Early Tertiary	47,736,093	0.19%	89,587	43.90	203
Cretaceous	87,422	0.48%	423	0.21	35
Jurassic	37,810,013	0.25%	93,335	45.73	605
Triassic	2,404,345	0.35%	8,451	4.14	72
Permian-Penn.	162,110	0.28%	454	0.22	5
MissCambrian	23,281	0.44%	103	0.06	10
Pre-Cambrian	1,157,260	0.26%	2,989	1.46	9
Totals	96,604,345	0.21%	204,080	100.00	973

Distribution of 1/1/70 Ore Reserves by Type of Host \$8.00 Reserves

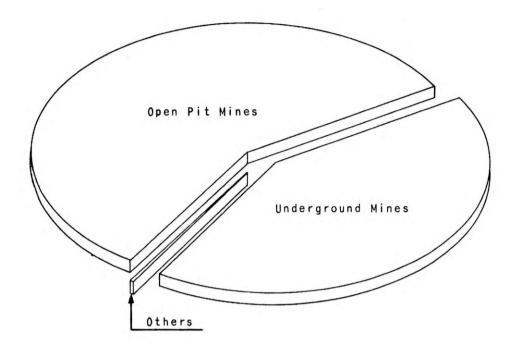


Host Type	Tons Ore	Grade	Tons U ₃ 0 ₈	% Total Tons U ₃ 0 ₈	No. Properties
Coarse Clastics	88,019,857	0.22%	190,723	93.46	844
Fine Clastics	48,354	0.21%	102	0.05	14
Coals	388,209	0.31%	1,213	0.59	65
Chemical	195,205	0.32%	625	0.32	22
Coarse Crystalline	6,571,805	0.11%	7,511	3.68	5
Fine Crystalline	1,164,865	0.26%	3,008	1.47	6
Intrusives	133,404	0.39%	518	0.25	10
Extrusives	9,925	0.24%	24	0.01	6
Meta-Igneous	72,721	0.49%	356	0.17	1
Totals	96,604,345	0.21%	204,080	100.00	973



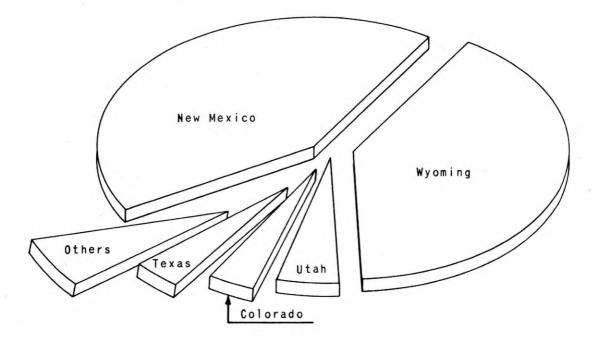


Distribution of 1/1/70 Ore Reserves by Mining Method \$8.00 Reserve

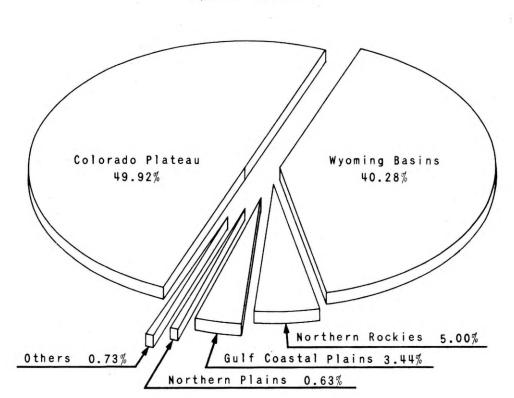


Mining Method	Tons Ore	Tons U ₃ 0 ₈	Grade	% Total Tons U ₃ 0 ₈
Open Pit Mines	61,343,974	117,630	0.19%	57.64
Underground Mines	35,232,200	86,418	0.25%	42.35
Others	28,171	32	0.11%	0.01
Totals	96,604,345	204,080	0.21%	100.00

Distribution of 1/1/70 Ore Reserves by State \$8.00 Reserves



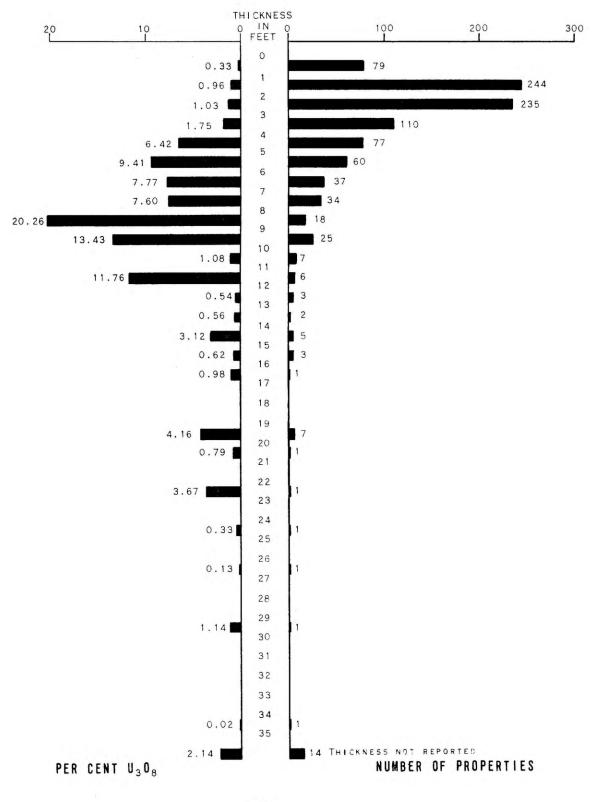
State	Tons Ore	Grade	Tons U ₃ 0 ₈	% Total Tons U ₃ O ₈	No. Properties
New Mexico	34,905,227	0.25%	86,042	42.16	74
Wyoming	44,020,039	0.19%	82,275	40.31	138
Utah	2,952,856	0.32%	9,483	4.65	205
Colorado	2,550,689	0.28%	7,089	3.47	405
Texas	3,812,529	0.18%	7,015	3.44	18
Others	8,363,004	0.15%	12,180	5.97	133
Totals	96,604,345	0.21%	204,080	100.00	973



Distribution	Of	1/1/70	Ore	Reserves	By	Resource	Region
		\$8	. 00	Reserves			

Resource Region	Tons Ore	Grade	Tons V ₃ O ₈	% Total Tons U308	No. Properties
Colorado Plateau	40,303,518	0.25%	101,883	49.92	679
Wyoming Basins	43,999,609	0.19%	82,206	40.28	127
Northern Rockies	7,684,431	0.13%	10,199	5.00	- 11
Gulf Coastal Plains	3,812,529	0.18%	7,015	3.44	18
Northern Plains	435,229	0.30%	1,287	0.63	93
Others					
Sierra Range	33,361	0.22%	74		2
Alaska	33,000	1.01%	334		1
Northern & Centra Basin & Range	l 158,430	0.22	336		16
Colorado & Southe Rockies	rn 144,238	0.52	745	0.73	26
Totals	96,604,345	0.21%	204,080	100.00	973

Distribution of 1/1/70 Ore Reserves by Thickness of Ore \$8.00 Reserves



Section IV - Drilling Statistics

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Private Drilling Summary by Resource Regions Calendar Year 1969	42

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SURFACE DRILLING ACTIVITIES DURING 1969

Surface exploration and development drilling in the western United States by the uranium mining industry during 1969 totaled 29,900,000 feet. The 1969 drilling figure was 25% greater than the footage drilled by the industry in 1968, the previous high year and almost triple the amount drilled in 1967. The 1969 record represents 21% of the total 140,000,000 feet of surface drilling for uranium since 1948, when the AEC began to record industry drilling figures.

The surface drilling figures for 1969 are:

Calendar Quarter	Drilling				
	Exploration	Development	Total Surface		
First	3,400,000	2,400,000	5,800,000		
Second	6,200,000	2,500,000	8,700,000		
Third	6,700,000	2,300,000	9,000,000		
Fourth	4,200,000	2,200,000	6,400,000		
Total	20,500,000	9,400,000	29,900,000		

The total drilling figure does not include mining claim validation drilling for claims staked in 1969 or underground longhole and diamond drilling. Underground drilling in 1969 totaled 2,200,000 feet.

Of the 29,900,000 feet drilled in 1969, 11,500,000 feet or 38% were drilled in areas more than fifty miles from existing production centers, compared with 14% in 1968. Exploratory drilling in search of new uranium deposits in 1969 was 20,500,000 feet or 69% while 9,400,000 feet or 31% was development drilling to define size, shape and grade of deposits, and to provide information needed for mine planning.

Distribution of the 1969 drilling by states is:

State	Drilling - Feet	Percent of Total
Wyoming	13,800,000	46.2
Texas	6,440,000	21.6
New Mexico	5,650,000	18.9
Colorado	1,530,000	5.1
Utah	1,380,000	4.6
South Dakota	670,000	2.2
California	180,000	0.6
Washington	80,000	0.3
Montana	60,000	0.2
Arizona	40,000	0.1
Others (Alaska, Idaho, Nevada, & Oregon)	70,000	0.2
Total	29,900,000	100.0

Surface drilling in 1948 was 210,000 feet and increased steadily until 1957 when over 9,000,000 feet were reported. At this point the drilling effort diminished to approximately 2,000,000 feet per year in the mid 1960's. From 1966 through 1968 the annual drilling rate more than doubled each year.

Although the average depth of holes almost doubled between 1966 and 1968, in 1969 the average was slightly less than that for 1968. This can be attributed to the increased effort in Texas where the depth of ore is generally less than in New Mexico and Wyoming. The footage drilled in Texas in 1969 was nearly double that in 1968 while the increases in New Mexico and Wyoming were 25% and 15% respectively.

A comparison of the number and average depth of holes drilled in the last four years is given in the following table:

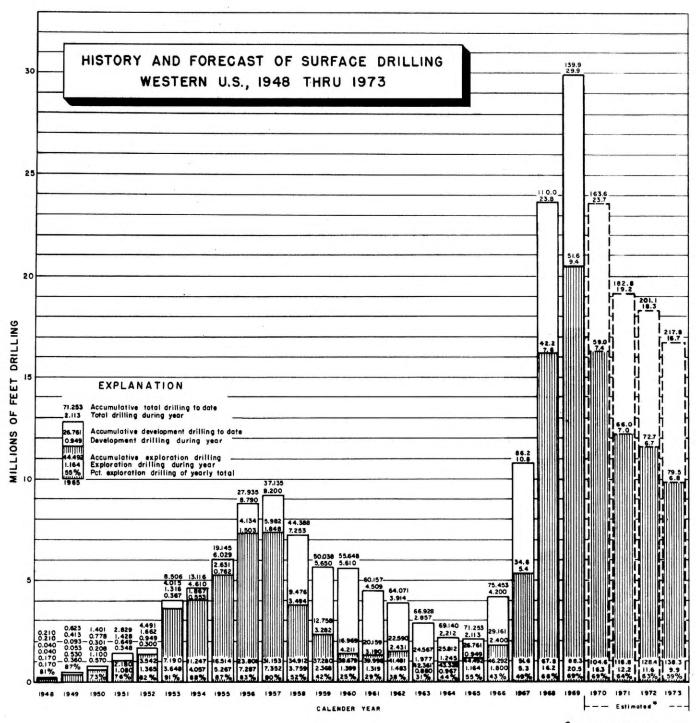
Year Number of Holes Average Depth - H	
1966 18,900 220	
1967 29,700 360	
1968 50,000 410	
1969 75,900 390	

The 75,900 surface holes completed in 1969 were bored by approximately 300 drill rigs. The monthly average of rigs in operation was about 240.

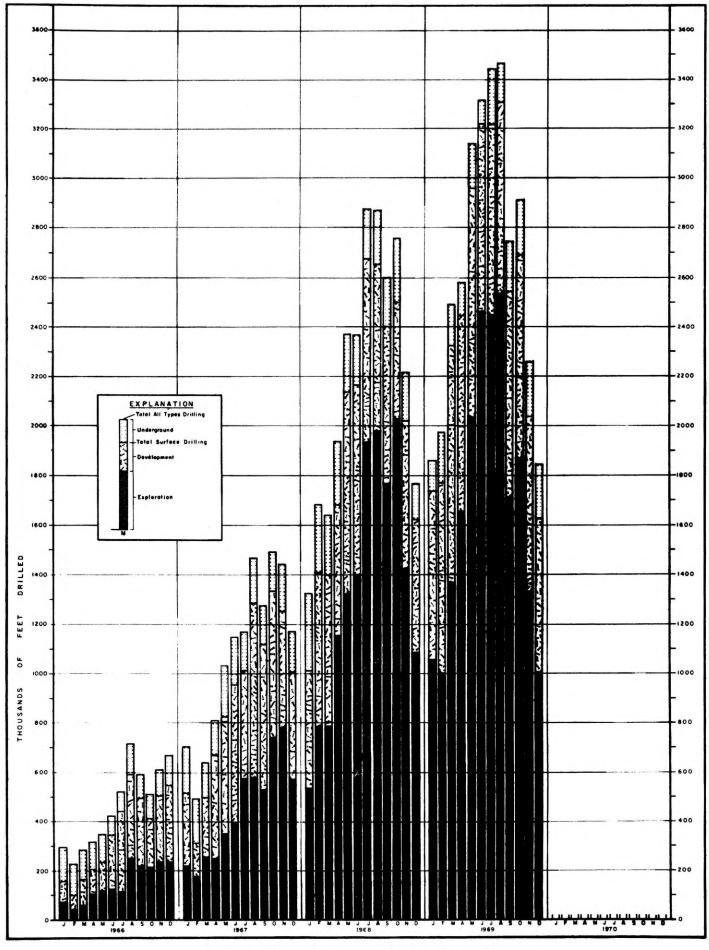
Surface Drilling - Millions of Feet Surface Drilling Exploration Total Surface Drilling Number of Holes Average Depth - Feet Development Cumulative Total Surface Year Annual Annual Cumulative Annual Cumulative Exploration Development Exploration Development Total Surface 1948 .170 .170 .040 .040 .210 .210 -1949 .360 .530 .053 .093 .413 .623 .208 .301 .778 1.401 1950 .570 1,100 . 1.080 .348 1.428 1951 2.180 .649 2.829 -1.362 3.542 .949 1.662 4.491 .300 1952 3.648 .367 4.015 8.506 1.316 1953 7.190 -1.869 4.610 13.116 1954 4.057 11.247 .553 -19.145 1955 5.267 16.514 .762 2.631 6.029 ---4.134 8.790 27.935 7.287 23.801 1.503 1956 ---1.848 5.982 9.200 37.135 --1957 7.352 31.153 ----9.476 7.253 44.388 25,321 22,932 48,253 148 152 150 1958 3.759 34.912 3.494 50.038 19,585 35,838 146 168 158 2.368 37.280 3.282 12.758 5.650 16,253 1959 5.610 55.648 7,335 24,395 31,730 191 173 177 38.679 4.211 16.969 1960 1.399 164 19,314 27,570 160 165 4.509 60.157 8,256 1961 1.319 39.998 3.190 20.159 189 203 . 2.431 22.590 3.914 64.071 6,439 12,870 19,309 230 1962 1.483 41.481 104 146 130 2.857 66.928 8,472 13,534 22,006 1963 .880 42.361 1.977 24.567 15,881 162 126 139 69.140 1964 .967 43.328 1.245 25.812 2.212 5,972 9,909 187 129 156 13,562 44.492 .949 26.761 2.113 71.253 6,231 7,331 1965 1.164 182 222 4.200 75.453 5,751 13,179 18,930 313 2.400 29.161 1966 1.800 46.292 314 362 10.764 86.217 12,788 16,947 29,735 425 5.435 5.329 34.490 1967 51.727 58,001 422 385 410 38,470 7.527 42.017 23.754 109.971 19,531 1968 16,227 67.954 394 75,862 428 335 28,012 9.385 51.402 29.855 139.826 47.850 1969 20.470 88.424

DRILLING STATISTICS FOR WESTERN UNITED STATES

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Based on Survey in early 1970



Drilling for Uranium — Western United States

PRIVATE DRILLING SUMMARY BY RESOURCE REGIONS

Calendar Year 1969

		Footage	
Area	Exploration	Development	Total Surface
Alaska, Sierra Nevada, Coastal U.S. & Columbia Plateaus	14 ¹ + , 118	50,000	194,118
Northern & Central Basin & Range	77,708	-	77,708
Southern & Southeastern Basin & Range	26,605	-	26,605
Colorado Plateau	4,438,818	3,057,052	7,495,870
Wyoming Basins	8,147,327	5,342,502	13,489,829
Colorado & Southern Rockies	455,231	1,400	456,631
Northern Rockies	114,464	34,156	148,620
Northern Plains	748,813	251,369	1,000,182
Southern Plains	551,421	2,190	553,611
Gulf Coastal Plains	5,765,505	646,203	6,411,708
Grand Total	20,470,010	9,384,872	29,854,882

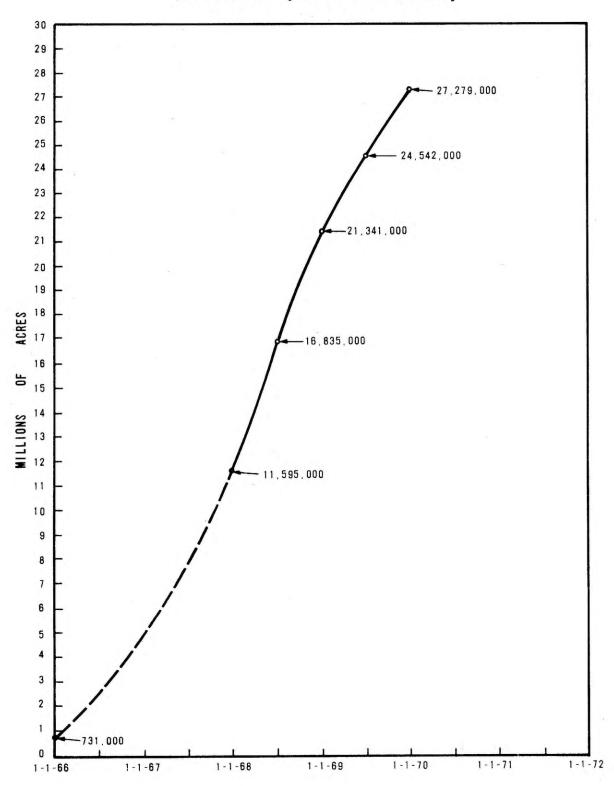
Section V - Land Acquisition for Uranium Mining and Exploration

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Land Acquired By States

State	Acres 1/1/66	Acres 7/1/69	Acres 1/1/70
Arizona	2,000	293,000	272,000
California	6,000	597,000	615,000
Colorado	213,000	2,091,000	2,127,000
Idaho	-	75,000	75,000
Montana	-	196,000	226,000
Nevada	-	228,000	268,000
New Mexico	137,000	7,559,000	8,065,000
Oregon	(, ,)	57,000	57,000
South & North Dakota	-	91,000	244,000
Texas	34,000	1,015,000	1,104,000
Utah	113,000	3,509,000	3,672,000
Washington	-	224,000	388,000
Wyoming	226,000	8,607,000	10,166,000
	731,000	24,542,000	27,279,000
	7/1/69	1/1/70	
Fee	4,788,000	5,576,000	
Claims	9,045,000	9,924,000	
State	9,472,000	10,323,000	
Indian	682,000	846,000	
Fed. Acquired	440,000	471,000	
R.R.	,000	139,000	
	24,542,000	27,279,000	



Acres Held by Uranium Industry

Section VI - Employment

Employment in the Uranium Mining Industry

Page

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EMPLOYMENT IN THE URANIUM MINING INDUSTRY 1/1/70

		Mining U	Inderground	Mining O	pen Pit					
	Mining	Miners	Service & Support		ervice & Support	Technical	l Off	ice Superv		Total
	Colorado	706	171	2	2	42	4	9 89		1,061
	New Mexico	995	573	107	58	120	6	0 199		2,112
	Wyoming	109	34	359	310	91	3	6 100		1,039
	Utah	187	86	-	-	8	1	0 48		339
	Others	4		79		11		5 _13		151
	Totals	2,001	864	547	409	272	16	0 449	*	4,702
	Milling	Operation Hourly	ns & Maintena Superviso		Warehouse Laborator		Office			
ı.	Colorado	386	62		82		106			636
47	Wyoming	201	48		44		40			333
	New Mexico	441	55		38		56			590
	Others	110	17		24		15			166
	Totals	1,138	182		188		217			1,725
	Exploration		Geologists & Engrs.	Drill Crew & Support	s Logging <u>& Supp</u>		lerial	Others: Surveyors, Landmen, etc.	Non-Tech. Prospectors	
	Colorado & Eastern Uta	h	155	267	37		3	123	47	632
	Wyoming & S. Dakota		180	356	70		19	259	20	904
	New Mexico & Arizona		72	283	38		6	85	10	494
								and the second second		

1,110

Texas & Oklahoma

Totals

Far West, Northwest, & Alaska

2,632 9,059

Grand Total

.7

Section VII - Domestic U₃O₈ Sales and Projected Requirements

	Page
Commercial Delivery Commitments	49
1969 Forecast of U.S. Commercial Requirements	50

COMMERCIAL DELIVERY COMMITMENTS

As of February 1970, U. S. uranium producers had made commercial sales commitments to domestic buyers totalling about 85,000 tons of U3O8 in concentrates to be delivered on the following schedule:

Year of Delivery	Tons U3O8 Annual	Tons U3O8 Cumulative
1966-69 total		9,900
1970	8,900	18,800
1971	12,100	30,900
1972	10,900	41,800
1973	10,900	52,700
1974	8,600	61,300
1975	9,200	70, 500
1976	3,300	73, 800
1977	3,000	76,800
1978	2,100	78,900
1979-1984	6,100	85,000

This represents an increase of 7, 400 tons from the figures available in September 1969. In addition to the above, about 5, 800 tons have been committed to foreign buyers, 3, 400 tons of which are scheduled for delivery in 1970 or later.

During 1969, the domestic nuclear power industry leased enriched uranium equivalent to 1,640 tons U₃O₈, from the AEC. At the end of 1969, the natural uranium components of the enriched material on lease was 4,600 tons U₃O₈. No new distribution of commercial uranium for commercial power reactor fuel will be made after 1970.

	Tons U3O8	in Concentrate
Year	Annual	Cumulative
1970	7,500	7,500
1971	7,500	15,000
1972	11,000	26,000
1973	13,500	39,500
1974	15,200	54,700
1975	17,200	71,900
1976	20,400	92,300
1977	23, 700	116,000
1978	27,300	143,300
1979	30,700	174,000
1980	34,200	208,200
1981	38,000	246,200
1982	42,300	288,500
1983	46,600	335,100
1984	51,700	386,800
1985	56,900	443,700

1969	FORECAST	OF	U.S.	COMMERCIAL	REQUIREMENTS

Requirements each year include initial fuel for reactors under construction and makeup fuel for reactors constructed in prior years, the latter varying from about 15% of total annual requirements in 1966 to 60% in 1980. The computations involve assumptions about fuel-processing times and utilize reactor characteristics supplied by reactor manufacturers. The tails assay in the uranium enrichment plants is taken as 0.2% U-235. Plutonium recycle in thermal reactors is assumed to start in 1974, resulting in a reduction in annual requirements for U₃O₈ ranging from about 2% in 1974 to 12% in 1980. Estimates for 1979-85 and later are subject to uncertainties such as the timing of introduction of commercial fast breeders and other advanced reactor types.

VIII - Processing Mills

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U.S. Uranium Ore Processing Mills, Operating or Under Construction	52

U. S. URANIUM ORE PROCESSING MILLS

Operating or Under Construction

		Nominal Capacity
Company	Location	(tons ore _per day)
Anaconda Company	Grants, New Mexico	3,000
Atlas Corporation	Moab, Utah	1,500
Cotter Corporation	Canon City, Colorado	450
Dawn Mining Company	Ford, Washington	500
Federal-American Partners	Gas Hills, Wyoming	950
United Nuclear-Homestake Partners	Grants, New Mexico	3, 500
Kerr-McGee Corporation	Grants, New Mexico	7,000
Mines Development, Inc.	Edgemont, South Dakota	650
Petrotomics Company	Shirley Basin, Wyoming	1,500
Susquehanna-Western, Inc.	Falls City, Texas	1,000
Susquehanna-Western, Inc.	Ray Point, Texas	$1,000 \frac{1}{2}$
Union Carbide Corporation Union Carbide Corporation	Rifle, Colorado) Uravan, Colorado)	1,500
Union Carbide Corporation	Natrona County, Wyoming	1,000
Utah Construction & Mining Co.	Gas Hills, Wyoming	1,200
Utah Construction & Mining Co.	Shirley Basin, Wyoming	1,200 <u>1</u> /
Western Nuclear, Inc.	Jeffrey City, Wyoming	1,200
Total		27, 150

1/ Under construction.