Finding of No Significant Impact
for the
Uranium Leasing Program

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U.S. Department of Energy Office of Legacy Management

U.S. DEPARTMET OF ENERGY OFFICE OF LEGACY MANAGEMENT
FINDING OF NO SIGNIFICANT IMPACT for the URANIUM LEASING PROGRAM PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

Agency: Department of Energy
Action: Finding of No Significant Impact

Summary: In accordance with the National Environmental Policy Act (NEPA) of 1969 (Title 42 *United States Code* [U.S.C.] 4321 et seq.) and the Council on Environmental Quality (CEQ), the U.S. Department of Energy Office of Legacy Management (DOE) prepared the *Uranium Leasing Program Programmatic Environmental Assessment* (PEA) (DOE/EA-1535) to evaluate its management alternatives for the future of DOE's Uranium Leasing Program (ULP). The ULP administers 38 lease tracts that encompass 27,000 acres of DOE–controlled lands located in southwestern Colorado for the exploration, development, and extraction of uranium and vanadium ores. The alternatives evaluated included continuation of the program at existing leasing levels, expanding the program to include all uranium lands under DOE's management, or discontinuing the program.

In finalizing the PEA, DOE reviewed and considered all comments received on the draft document during the public review process. Comments from over 100 individuals and organizations were summarized and responded to in Appendix D of the final PEA. In response to those comments, the final PEA was expanded to include: (1) clarification of the purpose, need, and scope of the PEA; (2) a more realistic ore production and transportation evaluation that depicts the amount of traffic that the public would likely see or encounter from the expanded leasing program; (3) a discussion of the potential effects of an ore haul-truck accident that spills the ore into a surface water course; and (4) additional lease stipulations that will be incorporated into future lease documents to address specific critical issues, including collaboration with other Federal, State, and local agencies to identify, assess, and implement actions to lessen local traffic impacts.

Based on the final PEA and in consideration of all comments, DOE has decided to proceed with the preferred "Expanded Program" alternative. Under this alternative, DOE will continue the Uranium Leasing Program, extending the 13 existing leases for a ten-year period, and offering additional leases (up to 25 lease tracts) to the domestic uranium industry for the same ten-year period. The decision provides comprehensive protection of human health and the environment as all Federal, State, and local requirements must be met and lease restrictions enhance these already established laws and procedures. Additionally, mining royalties will provide revenue to the Federal government.

To put this Expanded Program alternative into perspective in today's world market, production from the DOE lease tracts could approach 2.0 million pounds of uranium annually in a world market that produces approximately 100 million pounds of uranium annually and consumes nearly twice that amount annually.

On the basis of the information and analyses presented in the final PEA, DOE has determined that the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment, as defined by NEPA. Therefore, preparation of an environmental impact statement is not required for the ULP and DOE is issuing this Finding of No Significant Impact (FONSI).

SUPPLEMENTARY INFORMATION:

Background

In the post-World War II era, Congress directed DOE's predecessor agency, the U.S. Atomic Energy Commission (AEC), to develop a supply of domestic uranium that would adequately meet the nation's defense needs. That responsibility was met through the Ore Purchase Program, the Exploration Program, and the Mineral Leasing Program. Provisions of these programs gave AEC the authority to withdraw Federal lands for the exploration and development of a viable domestic uranium source and were carried forward into the Atomic Energy Act of 1954.

In March 1948, the U.S. Department of Interior—Bureau of Land Management (BLM) issued Public Land Order (PLO) 459 that stated "Subject to valid existing rights and existing withdrawals, the public lands and the minerals reserved to the United States in the patented lands in the following areas in Colorado are hereby withdrawn from all forms of appropriation under the public-land laws, including the mining laws but not the mineral-leasing laws, and reserved for the use of the United States Atomic Energy Commission." Subsequently, BLM issued a number of other PLOs (all similar to PLO 459) that increased and/or decreased the total acreages in withdrawn status. In addition, the U.S. Government, through the Unions Mines Development Corporation, acquired a substantial number of patented and unpatented mining claims, millsites, tunnel sites, and agricultural patents in February 1949, until the aggregate acreage managed by AEC totaled approximately 25,000 acres. During this time, AEC's management authority was quite broad.

The Mineral Leasing Program (circa 1949–1962) produced more than 1.2 million pounds of uranium and 6.8 million pounds of vanadium and generated $5.9 million in royalties to the Federal government. When the program ended in 1962, AEC directed the leaseholders to close the mines, but little was done to reclaim the mine sites.

In 1974, AEC initiated a second leasing program under the Domestic Uranium Program regulations (Title 10 *Code of Federal Regulations* [CFR] Part 760.1) that was markedly different from the previous leasing program. The new program, the Uranium Lease Management Program (ULMP), was designed to address the lack of production capacity of uranium- and vanadium-bearing ores for U.S. Government defense needs and emphasized the need for uranium in the expanding commercial nuclear energy market. Two main goals of the ULMP were to recover the resources that had been developed initially by AEC and to improve the prospects for continued mill operations, thereby encouraging further exploration and development on privately held land. In preparation for the ULMP, AEC prepared the *Environmental Statement, Leasing of AEC Controlled Uranium Bearing Lands* (AEC 1972) that presented assessments of the various environmental and economic aspects of the leasing program. That document recognized the multiple-use aspects of the public lands, including those managed by AEC and deferred the authority for multiple-use activities to BLM. The document also acknowledged that the lands

associated with the lease tracts accounted for less than 5 percent of the acreage within the Uravan Mineral Belt that would likely have exploration and mining activities. The bulk of those activities were expected to occur on other public lands associated with new or existing mining claims (556,000 acres) and other private and state lands (21,000 acres). Accordingly, the level of activities expected to occur on other lands was identified as independent of AEC's leasing program.

AEC and its successor agencies, the U.S. Energy Research and Development Administration and DOE, administered the ULMP. Forty-four lease tracts (38 in Colorado, 5 in Utah, and 1 in New Mexico) were included in the program. In 1974, 43 lease tracts were offered for lease through a competitive bid process; 1 lease tract (located in Utah) was excluded from the leasing process in 1974 and was never leased. The 38 lease tracts in Colorado are located in an area known as the Uravan Mineral Belt, which at that time included a significant, if not dominant, portion of the known domestic uranium ore reserves.

During the ULMP, DOE controlled and administered the 43 lease tracts for the exploration and development of viable uranium and vanadium resources. As part of its administrative duties, DOE incorporated language into each lease agreement that required leaseholders to conduct operations in a manner to minimize adverse environmental effects and to comply with all applicable Federal, State, and local statutes and regulations. DOE was responsible for monitoring lease tract activities and enforcing the lease agreements. Non-compliance could result in lease termination. To ensure that lease sites were adequately reclaimed, DOE required the leaseholders to secure a reclamation performance bond for each lease tract, payable to DOE upon default. These bonds were adjusted periodically to reflect the actual conditions present at the leaseholders' lease tract operations.

Between 1974 and 1994, the ULMP leaseholders produced approximately 6.5 million pounds of uranium and 33.4 million pounds of vanadium. That production generated $53 million in royalties to the Federal government. To put the ULMP in proper perspective, domestic annual uranium production peaked in 1980 at 43.7 million pounds, of which production from the DOE lease tracts (at 1.1 million pounds) represented about 2.5 percent of the total.

Prior to 1994, 13 of the 43 lease tracts were fully reclaimed and relinquished back to DOE. In 1994, the remaining 30 leases were allowed to expire, and DOE prepared a programmatic environmental assessment (EA) to determine if the leasing program should continue. During the EA process, the former leaseholders were allowed to continue maintenance, security, and reclamation activities at the lease tracts to ensure that the mines and associated facilities did not incur damage. Eight of the 30 leaseholders notified DOE that they did not want to continue with the program and subsequently reclaimed their respective lease tracts and relinquished them back to DOE. Accordingly, the 1994 programmatic EA focused on the ultimate disposition of only 22 lease tracts and the 21 reclaimed lease tracts were excluded indefinitely from further leasing activities. DOE's preferred alternative in the EA was the continued leasing of these 22 lease tracts for an additional 10-year period. The *Final Programmatic Environmental Assessment for the Uranium Lease Management Program* (DOE 1995) was approved in July 1995, and DOE issued a Finding of No Significant Impact (FONSI).

Subsequent to the FONSI, DOE prepared new lease agreements and entered into negotiations with the previous leaseholders. Seven of the 22 leaseholders ultimately declined these negotiations, reclaimed their respective operations and relinquished their lease tracts back to DOE. Following negotiations, new ten-year lease agreements were executed for 15 lease tracts. This current leasing program is identified as the DOE ULP. Ore production on the active lease tracts resumed in May 2003 and continued into early November 2005, when production operations at the four mines were suspended. During that time, approximately 65,500 tons of ore was produced from these lease tract mines, generating $4.0 million in royalties to the Federal government. Similar mining operations were being developed on three other lease tracts and, pending the resumption of operations, they could be in production within 6 months. If such levels of production continue into the foreseeable future, and the market prices for uranium and vanadium continue at or near current levels, it is anticipated that royalties generated from the existing program could total $10 million annually. Two of the 15 lease tracts have been reclaimed and relinquished back to DOE. Currently, 13 lease tracts are still active and 25 lease tracts are inactive; all are located in southwestern Colorado.

In October 1994, DOE initiated a legacy mine-site reclamation program. Each lease tract was thoroughly inspected to identify all the abandoned mine sites that resulted from pre-1974 leasing activities. All mining-related features associated with each site were quantified and assessed for their historic importance. In 1995, in the absence of specific guidance pursuant to the reclamation of abandoned uranium mine sites, DOE initiated discussions with BLM officials (state and local) that culminated in the establishment of a guidance document, *United States Department of Interior, Colorado Bureau of Land Management, Closure/Reclamation Guidelines for Abandoned Uranium Mine Sites*. DOE's objective in establishing this guidance document was to ensure that DOE's lease tracts were reclaimed in a manner that was acceptable to BLM so that the lands could ultimately be restored to the public domain under BLM's jurisdictional authority. Subsequently, DOE systematically reclaimed its legacy mine sites, consistently applying, and in many cases exceeding, the objective set forth in the aforementioned guidance document. In May 2001, DOE reclaimed its final legacy mine site. In summary, DOE reclaimed a total of 161 separate mine sites on 22 lease tracts at a total cost of $1.25 million.

Purpose and Need

In support of the Energy Policy Act of 2005 (Public Law 109-58), which emphasizes the reestablishment of nuclear power (Sections 601 through 657), DOE-LM evaluated the ULP to determine whether to continue leasing some or all of DOE's withdrawn lands and government-owned patented claims (referred to as DOE-managed lands) for the exploration and production of uranium and vanadium ores for up to 10 more years. Current leases are scheduled to expire later this year.

Proposed Actions

The final PEA addressed the potential environmental concerns related to a policy decision that DOE is considering for the ULP. The three alternatives considered in the final PEA are the Expanded Program alternative, the Existing Program alternative, and the No Action alternative.

Under the Expanded Program alternative, the existing leasing program will be expanded to include the leasing of all DOE-managed lands. This alternative is DOE's preferred alternative in the final PEA and will be implemented based on this FONSI. Operations on the 13 active lease tracts will continue as they are presently authorized, and DOE will offer up to 25 inactive lease tracts to the domestic uranium industry through a competitive bid process. Also, individual lease tracts could be expanded to include all withdrawn lands. The new lease agreements will require the leaseholders to comply with all applicable statutes and regulations and will allow the leaseholders to (1) conduct operations consistent with the exploration, development, and extraction (mining/production) of uranium and associated minerals; (2) transport ores from the lease tracts to ore-processing facilities; and (3) perform all activities required to satisfactorily reclaim the environmental disturbances on the lease tracts resulting from their operations.

Under the Existing Program alternative, the existing 13 leases would be extended, and future lease activities would be limited to operations that are presently authorized on those lease tracts and their subsequent reclamation. In addition, DOE would retain the 25 inactive lease tracts in their current status until all DOE managed lands could be restored to the public domain with the concurrence of and under BLM's administrative control.

Under the No Action alternative, the current leases would expire, and the existing lease operations would be reclaimed. Following reclamation, DOE could choose to continue (indefinitely) its management of the withdrawn lands without leasing, or all 38 lease tracts would be restored to the public domain with the concurrence of and under BLM's administrative control, and DOE's leasing program would end.

Environmental Impacts

Socioeconomics

All alternatives would create additional jobs in areas affected by lease tract operations; however, due to the distribution of the lease tracts across three counties, and the population distribution in numerous towns and cities in these and adjoining counties, no community would incur significant positive or negative socioeconomic impacts. The Expanded Program alternative would create the most jobs (up to 570) and would increase local wages. The Existing Program alternative would create fewer jobs (up to 186) and would also produce an increase in local wages. Both alternatives would bring a secondary economic benefit from local spending for goods and services. Up to 60 short-term (1 to 2 year) jobs would result from the No Action alternative, primarily from hauling stockpiled ore to the processing mills and reclaiming disturbed land.

Transportation

Ore could be hauled to two currently licensed ore-processing mills; Cotter Corporation's Mill in Cañon City, Colorado or International Uranium Corporation's White Mesa Mill near Blanding, Utah. The final PEA analyzed a highly improbable but "worst case" scenario which conservatively assumed that all mines on all lease tracts were operating at capacity and concurrently. DOE also evaluated the potential impacts associated with the haul-truck traffic that can reasonably be expected to occur. This realistic evaluation is based on historic operating conditions that occurred during the last upturn in the uranium market; during which mines

opened and closed but under no circumstance did all mines operate simultaneously and at capacity. As summarized below and detailed in the final PEA, there would be no significant impacts on traffic or the health of workers or the public.

Based on the worst-case transportation scenarios analyzed in the final PEA, an increase in truck traffic (up to 150 haul trucks per day, one way, under the Expanded Program alternative and up to 50 haul trucks per day, one way, under the Existing Program alternative) hauling ore to the mills would result in only a slight increased risk of traffic fatalities. Under worst-case scenarios for all three alternatives, the number of fatal accidents and injury accidents were each estimated to be less than 1 per year. For the realistic transportation evaluation, the haul truck traffic would decrease to 45 trucks per day for the Expanded Program alternative and 31 trucks per day for the Existing Program alternative. Annual traffic-related fatal accidents and injury accidents would decrease accordingly, from those mentioned above. There would be no notable additional congestion on highway road segments related to this additional truck traffic; all road segments are well below road capacity (expressed as a volume to capacity ratio) and would experience either no traffic increases or only minor traffic increases under all three alternatives.

Based on the worst-case transportation scenario that was analyzed in the final PEA, under the Expanded Program alternative, the annual dose to haul-truck drivers and members of the public from exposure to radioactive ore would result in an increase in cancer risk of less than 8 in 1 million and 1 in 10 million, respectively. Under the Existing Program alternative, the annual dose and associated cancer risk to haul-truck drivers would remain the same as that for the Expanded Program alternative described above, but because of the reduced number of total shipments, the public risk would be reduced to 1 in 100 million.

The increase in haul-truck traffic under the Expanded and Existing Program alternatives would also increase the frequency of noise along the haul routes; however, the noise from haul trucks would be similar to that of other commercial trucks using the same routes and would attenuate within the same short distances. On some routes that are designated as scenic byways, vehicle/animal accidents could increase commensurate with the increased number of haul trucks, but the increases on these routes would not be significant. In addition, the residents living near the lease tracts or along the collector routes would likely see an increase in the amount of dust generated by the increased haul-truck traffic.

Mining

Under the Expanded and Existing Program alternatives, uranium and vanadium ores would be immediately available, and new reserves might be discovered. Under the No Action alternative, uranium and vanadium ores would continue to be available over the long term but would not originate from DOE leases.

Noise, Dust, and Air Quality

The Expanded and Existing Program alternatives would produce a limited increase in localized noise and dust near mine sites and along dirt haul roads, which could affect recreational users, especially near the Dolores River Canyon. An increase in visible dust and surface disturbances would also affect visual resources. Local fugitive dust could decrease air quality slightly near the source areas, but regional air quality would not be affected under either alternative.

Under the No Action alternative, noise, dust, and human activity at all lease tracts would decrease because all lease-tract operations would be reclaimed.

Agriculture and Grazing

The Expanded Program alternative would result in surface disturbance of no more than 450 additional acres (in addition to the 300 acres of existing disturbance), and, if all leases were in active operation under the Existing Program alternative, an additional 110 acres would be disturbed. This acreage represents less than 2 percent of the total area (27,000 acres) under DOE lease tracts. These small, discontinuous losses in acreage would not significantly affect the volume of forage in grazing allotments that include the lease tracts. Because most mining activities occur in lands not suitable for crops, there would be no impacts to agriculture. Impacts to range management, such as increased traffic through allotments to mine sites that could include animal/vehicle accidents, disruption of normal livestock trailing/movement from mine development, and damage to or increased maintenance requirements for access roads would be minimal. After successful reclamation, as many as 300 additional acres would become available for multiple use.

Soils

Surface disturbance under the Expanded Program and Existing Program alternatives could produce an increase in soil erosion, but storm water runoff management during operations and reclamation of disturbed areas after mining operations ceased would minimize these impacts. Reclamation of the existing 300 acres of disturbed areas under the No Action alternative would decrease the potential for soil erosion. New surface-disturbing activities on the lease tracts would require review and approval of DOE and affected agencies, such as the Colorado Division of Wildlife (CDOW), U.S. Fish and Wildlife Service (USFWS), the State Historic Preservation Officer (SHPO), BLM, and the Colorado Division of Reclamation, Mining, and Safety.

Vegetation

Mining operations under the Expanded Program and Existing Program alternatives would disturb no more than an additional 450 acres and 110 acres, respectively, of land containing various amounts of upland vegetation and cryptobiotic soils. All impacts would be to small (5 to 25 acres) isolated acreages, representing less than 2 percent of the total acreage in DOE's lease program. The remainder would be undisturbed by mining activities. The degree of impact would depend on the areas disturbed. Beneficial impacts may result from successful reclamation of previously degraded or species-poor areas. Minimal impacts that may occur in previously diverse, healthy areas or in areas containing sensitive species would be offset by successful reclamation. All disturbed areas would be reclaimed with the concurrence of BLM before being restored to the public domain. After successful reclamation, as many as 300 additional acres would become available for multiple use.

Wildlife

Of the three alternatives, the Expanded Program alternative would have the most effect on wildlife that inhabits the lease tracts, as up to 450 additional acres of land would be disturbed. The Existing Program alternative would result in less effect (up to 110 additional acres). In

disturbed areas, short-term habitat would be lost as a result of vegetation removal, surface disturbance, and blasting on 5 to 25 acres per lease. The remaining lands, several thousand acres, would remain undisturbed, although mining activities would be expected to impact wildlife (e.g., noise, light, traffic, road kill, and disruption of migration routes). Reopening of abandoned mine entrances and other structures could potentially result in disturbance to populations of sensitive species of bats and reptiles but would be conducted in a manner, as directed by DOE in consultation with BLM, USFWS, and CDOW, that would avoid or minimize such impacts.

Under the No Action alternative, most area wildlife species would benefit over the long and short terms because cessation of operations would reduce or eliminate noise, traffic, and human activity from the lease tracts. Under all three alternatives, permanent mine closures could destroy potential bat habitats; conversely, however, the fabrication and installation of bat gates and grates in mine openings could greatly increase the availability of such habitats.

Cultural Resources

Under the Expanded Program alternative, approximately 22 cultural resource sites could be expected to occur within areas of new disturbance. Under the Existing Program alternative, approximately five to six sites could occur within areas of new disturbance. DOE would consult with tribal representatives to determine if any of the inventoried cultural sites were traditional cultural properties. Impacts to historic or cultural resources would be avoided or appropriate actions would be taken in consultation with the SHPO or the Tribal Historic Preservation Officer to assure that impacts would not be significant. The No Action alternative would benefit cultural resources, as cultural sites would not be disturbed.

Human Health

Risk estimates of latent cancer fatalities were calculated for the Expanded Program and Existing Program alternatives for a member of the public living near an underground uranium mine, a member of the public living near an open pit uranium mine, and workers receiving an occupational dose. Risk under the No Action alternative was calculated for a member of the public visiting a lease tract and camping for 14 days on a mine-waste-rock pile. For all risk scenarios, estimated latent cancer fatalities were less than one for members of the public. For workers at the lease tracts, estimates of latent cancer fatalities were less than one for the Existing Program and No Action alternatives. Under the Expanded Program alternative, the risk estimate is one latent cancer fatality for workers, based on 570 workers each receiving an annual radiation dose of 350 millirems during a 10-year period.

Cumulative

DOE assessed cumulative impacts in the context of other existing actions, or reasonably foreseeable future actions that are occurring or might occur within the region of impact during the 10-year duration of DOE's proposed actions. Because the geographic region is remote and sparsely populated, mineral (mining, oil and gas) exploration, development, and production activities are the most likely actions that would continue (or be undertaken) in the region, in the reasonably foreseeable future, that would result in cumulative effects when combined with DOE's proposed ULP alternatives.

BLM data indicate that the three counties encompassing DOE's lease tracts currently have over 4,800 valid uranium claims; most of them recently staked in the last year or two. However, quantitative information on the operational status of these claims is not currently available and would likely be changing as favorable market conditions continue. Based on the past history of mining claims versus actual production (i.e., there are far more valid mining claims than mines in production) the number of these claims that might ultimately be put into production is too uncertain to estimate. Any future mining operations would result in increased numbers of employees, which would increase spending within the region but would also put an increased demand on housing and infrastructure of the small communities in the region. Such operations would also increase in the number of workers commuting to work and the number of haul trucks transporting ore to processing facilities. Future uranium mine production within the region could outpace the capacity of the two existing mills and ultimately result in the construction of new milling facilities.

In addition to mining activities, there is also ongoing development of oil and gas reserves in the region. The extent of future development is unknown; however, currently six to ten drill rigs are often operating at one time in the region of DOE's uranium lease tracts. Because (1) oil and gas exploration and development does not require large numbers of workers (less than 20 per drill rig); (2) the duration of their actions at an individual site is typically a matter of weeks and not years; and (3) pipeline transport is favored over truck; the increase in the workforce and the subsequent cumulative impacts on the regional infrastructure, socioeconomics, and truck traffic resulting from mining and oil and gas development would not be appreciably greater than those assessed under the Expanded Program alternative in the final PEA. Oil and gas development would result in additional land use and biological impacts in the region; however, as with uranium mining, oil and gas drill rig impacts are limited to the localized area of a drill pad (5−10 acres), which would be dispersed throughout the region. Additional linear impacts to land use might occur if additional access roads and transmission pipelines are developed. The cumulative effects on land use and biota in the region would be an increase in the acreage of public lands that would be affected by mineral exploration. However, based on the relatively small footprint of oil and gas development operations, such an increase would likely be in the hundreds and not thousands of acres scattered across the region.

DOE would monitor future minerals development activities (uranium exploration and mining and oil and gas development) within the region that could lead to increased traffic impacts. DOE would work with the appropriate Federal, State, county, and local agencies to develop traffic studies as required and implement site-specific measures, such as acceleration/deceleration lanes, intersection controls, passing lanes, and other measures, that would reduce or minimize traffic impacts within the region.

Determination: Based on the analyses in the final PEA, I have determined that the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, preparation of an environmental impact statement is not required.

Information: Copies of the final PEA and FONSI are available at the DOE–LM website at: http://www.lm.doe.gov/land/sites/uranium_leasing/uranium_leasing.htm.

Hard copies (paper or CD) of the document(s) can be requested by calling 1–800–399–5618, by sending an email to ulcomments@gjo.doe.gov, or writing Ms. Tracy Plessinger, DOE–LM, U.S. Department of Energy, Office of Legacy Management, 2597 B¾ Road, Grand Junction, CO, 81503.

Issued at Washington, D.C. on this 5th day of July 2007.

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Office of Legacy Management
U.S. Department of Energy