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Uranium Leasing Program Programmatic EIS  
Office of Legacy Management  
U.S. Department of Energy  
11025 Dover Street, Suite 1000  
Westminster, CO 80021

Re: Scoping comments on Uranium Leasing Program Programmatic Environmental Impact Statement

Delivered via email: [ulpeis@anl.gov](mailto:ulpeis@anl.gov)

September 9, 2011

Dear Ms. Kilpatrick,

Thank you for the opportunity to comment on your June 21, 2011, published Notice of Intent to Prepare a Programmatic Environmental Impact Statement for the U.S. Department of Energy Leasing Program.

These public scoping comments are submitted on behalf of the following organizations:

- Sheep Mountain Alliance, Telluride, Colo.
- Western Colorado Congress, Grand Junction, Colo.
- Paradox Valley Sustainability Association, Paradox, Colo.
- Uncompahgre Valley Association, Montrose, Colo.
- Grand Valley Peace & Justice, Grand Junction, Colo.
- Colorado Citizens Against ToxicWaste, Cañon City, Colo.
- Rocky Mountain Wild, Denver, Colo.
- San Luis Valley Renewable Communities Alliance, Alamosa, Colo.
- Living Rivers, Moab, Utah
- Center for Biological Diversity, Flagstaff, Ariz.
- San Luis Valley Ecosystem Council, Alamosa, Colo.
- Uranium Watch, Moab, Utah
- Nuclear Information and Resource Service, Takoma Park, Md.

These comments are intended to supplement those made by some of our members during the public scoping meetings the Department of Energy conducted in August. These organizations share missions of conservation, environmental stewardship, and social justice and request that the Department of Energy's Office of Legacy Management (DOE/OLM) develop a full scope of analysis of the impacts of the federal uranium program and adhere to all the requirements of the National Environmental Policy Act.

These organizations and their members are in agreement that the Department of Energy must not only fully determine and evaluate the impacts of its federal 25,000-acre Uranium Leasing Program but also the associated thorough reclamation of mined lands in the Uravan Mineral Belt of western Colorado and eastern Utah.

### **Purpose and Need**

Of the 31 uranium lease tracts managed by the Department of Energy, 29 are currently actively leased and two are inactive, although most have not been mined since the early 1980s, when the United States government stopped purchasing uranium under the authority of the Atomic Energy Act of 1946, effectively ending price supports for the industry and leading to a serious, long-term market decline. Although uranium ore production has continued on a very small scale in the Uravan Mineral Belt since 1980, it has never returned to the historic production levels of previous decades, when the uranium industry was artificially supported by the federal government's atomic energy and nuclear weapons programs.

Unlike the purpose and need for the Uranium Leasing Program as determined by the necessity of national defense and the government's obligation to protect citizens under the Atomic Energy Act, as was the case during the historic uranium boom of the Cold War era, the purpose and need for the current implementation of the leasing program remain undefined by the Department of Energy in scoping notices for the PEIS. The continuing implementation of leases by the government underlies an industry push to produce and process uranium ore in order to meet the demands of a foreign export market rather than to supply the needs of a domestic market, despite the public ownership of the mineral reserves in question and a decades-long pattern of mining dormancy and price deflation. At the same time, the Department of Energy retains a significant enriched uranium stockpile and, in consultation and agreement with the industry, regularly releases and supplies uranium into the general marketplace, eliminating the need for domestic mining and processing.

While the underlying purpose and need of the Department of Energy's Uranium Leasing Program appear to have changed significantly since its inception in 1948, so have the associated issues that must now be considered and studied in the PEIS. Foremost among these are the public health and environmental impacts caused by renewed mining on the lease tracts and the associated stimulation of mining development on adjacent and nearby public lands in Colorado and Utah. The PEIS must analyze the full, cumulative impacts of uranium mining not only within the leasing tract study area, but on all nearby lands in the Uravan Mineral Belt where uranium development occurs. Environmental impacts include but are not limited to ground and surface water contamination and diminution, regional air quality degradation, fragmentation of wildlife habitat and ecosystems, impacts to threatened, endangered and sensitive species, contamination of local soils, compaction of soil horizons and loss of soil fertility, pressure upon wetlands and floodplains, scenic views, and hazardous waste contamination associated with the management and disposal of hazardous and radioactive wastes. These impacts must be considered cumulatively and should be determined in informed consultation with all

federal, state and local agencies that manage lands or resources in the Uravan Mineral Belt and nonprofit organizations and stakeholder groups that represent the public interest in these areas. A nationwide scope of analysis is also necessary, as the Uravan Mineral Belt remains one of the few national uranium reserves of significance available for future production to the United States, and resurgent production now will affect, engage and expand the national infrastructure already established to explore, secure, mine, transport, process and ultimately dispose of associated wastes along multiple points in this national nuclear supply chain. At the end of this supply chain remains the pressing and unsolved national problem of the lack of a facility to properly dispose of spent nuclear fuel and other high-level radioactive wastes, which are the end product of initiating uranium mining on public lands.

Another underlying purpose and need of the PEIS is the review of reclamation and cleanup standards and the subsequent reclamation of current mining and milling sites, sites that are currently leased or permitted but have effectively been in cessation for years, and the abandoned sites that remain contaminated and unreclaimed from the historic uranium boom era, estimated by the EPA to number 4,000, with the vast majority located in the Colorado River Basin. The landscape of the leasing tracts and adjacent public lands remains littered by abandoned uranium sites whose impacts are actively exacerbated by contemporary operations, including ongoing contamination and violations of existing state and federal regulations. The associated environmental and economic benefits of reclamation of mined public lands in the Uravan Mineral Belt should underscore the general scope of the PEIS, as well as establishing and defining the extent and manner in which lands are reclaimed. The full environmental, economic and social legacy of uranium development in the Colorado River Basin must be disclosed in order to accurately define and understand the need for continued reclamation of abandoned sites on public lands as well as sites where corporate owners remain accountable for cleanup and regulatory enforcement of past, present and future impacts. At the same time, the associated economic impacts and job generation stimulated by reclamation activities should be understood as a formative base for defining the scope of the PEIS.

The changing mission of the Department of Energy and currently defined objectives of the State of Colorado form another underlying purpose and need for the PEIS as reflected in increasing demand and desire to develop forms of renewable energy. The potential for renewable energy development in the Uravan Mineral Belt -- while maintaining the national uranium reserve in place in its natural and most secure state -- should underscore a comparative analysis of the socioeconomic benefits of energy development of all kinds, including the cumulative impact analysis of oil and gas drilling, shale production, and mining of precious metals, coal, potash, and other minerals in the same region. The initiatives of the Department of Energy to reduce national dependence on foreign oil imports and to establish U.S. leadership in global efforts to develop renewable energy standards directly correlates with the highly anticipated economic activities of the next century. At the same time, the State of Colorado has created aggressive goals to develop a renewable energy standard of 20 percent by 2020 as well as solidly establishing the state as a national leader in this sector and developing up to 600,000 clean-energy jobs. In addition, public lands within the Uravan Mineral Belt that have previously been mined

and reclaimed provide potential “brownfield” redevelopment opportunities when considered in the context of site-specific renewable energy projects.

### **Proposed Alternatives**

Reclamation is the focus of Alternative 1, and the lease tract areas would remain under the jurisdiction of the DOE Uranium Leasing Program and be managed as withdrawn lands without further activity for the remainder of the 10-year lease period. Among the alternatives, this is the most palatable. Under this alternative, the Department of Energy would terminate the existing leases and require leaseholders to reclaim their operations.

Additional alternatives and concepts should be considered in relation to overall sustainability and ecological health of western Colorado and eastern Utah. The existing five alternatives are rather limited in scope. The DOE should build upon Alternative 1 and include renewable energy generation. The existing conditions affecting the regional economy and the economic benefits of renewable energy development as a generator of local employment should form a basis for developing scoping alternatives and should take into consideration the issues of workforce development and preferential bidding and hiring as a means to stimulate job generation at the community level. The brownfield redevelopment of reclaimed mining areas for the purposes of developing small-scale renewable energy projects and stimulating local employment will allow the PEIS to shed light on the broader purpose and need for this type of development within the region. Reclamation standards must be determined and analyzed on a site-by site basis. For example, the Opera Box site in Paradox Valley provides a likely place where mining has been proven to be marginal in the past and reclamation will be difficult, but could prove suitable for renewable energy development.

In addition, the Department of Energy should develop scoping alternatives to address the ongoing impacts of mining on adjacent and nearby public lands that have not been reserved in the Uranium Leasing Program. These lands are largely controlled by the Bureau of Land Management, which has limited authority to review and permit exploration, mining and milling operations under five acres in size under the General Mining Act of 1872. In contrast, the Department of Energy retains greater authority to control mining operations under the Uranium Leasing Program, including the right to collect royalties of behalf of the American people and a greater ability to hold companies financially accountable for reclamation and cleanup. The potential for increased federal oversight of critical uranium operations as contemplated by a greater withdrawal of public lands under the authority of the Atomic Energy Act and into the Uranium Leasing Program should be carefully considered under the broad scope of the PEIS because such an analysis would help determine the full, cumulative impacts of uranium production on public lands. Many of the leaseholding companies that pay royalties and undergo more substantial reviews through the DOE Uranium Leasing Program enjoy a relatively unfettered permitting process when mining on adjacent areas controlled by the Bureau of Land Management, which does not have sufficient authority to require stringent environmental analysis before exploratory activities are conducted, essentially enabling

de facto approvals of mining without substantive public scrutiny or detailed regulatory review.

Additional alternatives that should be considered in the scope of the PEIS are not currently contemplated by the Department of Energy. These include alternatives that would reduce the number of active leases, such as permanently withdrawing the Slick Rock tracts to prevent impacts to the Dolores River canyon; alternatives that create new requirements for protection of public health and the environment, such as requiring additional impact fees or stipulations limiting uranium product sales to domestic use and prohibiting exports; or alternatives with reduced leasing for the limited purposes of reclamation, among other possible scenarios.

### **Impacts Analysis**

**A. Water Quality and Quantity:** The increase of uranium mining within the Uravan Mineral Belt will impact the Dolores and San Miguel River watersheds and other important tributaries of the Upper Colorado River Basin, and the cumulative impacts must be analyzed and understood from a basin-wide perspective. These impacts include but are not limited to:

- The depletion of groundwater, aquifers, surface bodies, and the streams and tributaries of the Colorado River in order to supply industrial mining and milling operations, reclamation, and waste disposal and management;
- The correlation between water depletions for uranium production and the associated pressures placed on regional compacts and agreements governing the use of the Colorado River in light of overappropriation;
- The potential for conflict with competing municipal, agricultural, industrial, recreational, and conservation uses and demands;
- The cumulative impacts of radioactive and toxic contaminants emitted into water supplies;
- Cumulative impacts to floodplains, wetlands, riparian zones, and intermittent streams.

In addition, the PEIS should fully consider the program-wide actions necessary to comply with all Clean Water Act and state water protection regulations. Clean Water Act and permit violations within the existing lease tract areas should be fully documented and disclosed in order to accurately understand water quality impacts from new development and facilitate enforcement by federal and state regulators.

**B. Air Quality and Climate Change:** To date, air quality impacts have not been adequately or cumulatively analyzed from a regionwide perspective, and cumulative, regional air modeling and baseline studies should be included in the PEIS in order to

fully analyze the impacts of increased uranium production both within the Uranium Leasing Program study area and on neighboring public lands in Colorado and Utah. These studies should include analysis of toxic emissions, radon gas, and radionuclide particles carried by the region's extensive dust and wind activity as well as air emissions generated from hauling and transportation to and from uranium sites. Impacts to be analyzed should include but are not limited to:

- Disclosure and analysis of all emissions and airborne substances released from uranium mining and milling operations and the associated impacts to all downwind communities, municipal watersheds, soil conservation areas, and deposition zones;
- Dust impacts generated by hauling and transport of ore, yellowcake, and supplies to and from mines, and from mining and associated disturbances of land and soils;
- The cumulative and project-specific impacts of mine venting and portals, as well as from ore pads, stockpiles, waste piles, exploration sites, evaporation ponds, and tailing compounds;
- Analysis of the available radon emissions control technology for each leasing tract area;
- Analysis of radon emissions from surface mining and mines that extract less than 100,000 tons of ore, which are not subject to current hazardous air pollutant standards;
- Analysis of offsite radionuclide and hazardous pollutant deposition in regional soils and surface waters.

In addition to air quality issues, the PEIS should analyze likely and possible impacts to the climate caused by mining and milling development in the Uravan Mineral Belt. These impacts include but are not limited to:

- Cumulative carbon and greenhouse gas emissions from mining, milling, transporting, shipping, and export of ore and yellowcake;
- Analysis of the likelihood and potential impacts from storm events and natural catastrophes;
- Analysis of how increased mining and milling in the region will exacerbate larger climate change trends and impacts to vegetation already at work in sensitive ecosystems present in the study area, such as high desert and canyon ecosystems, submontane and montane forests, and riparian zones;
- Analysis of impacts in the context of changing federal regulation of carbon dioxide and other industrial air pollutants.

**C. Species Protection, Wildlife Habitat, and Healthy Ecosystem Management:** The development of uranium mining across the Uravan Mineral Belt should be fully analyzed in terms of impacts to endangered, threatened and sensitive species, including species protected under the Endangered Species Act or by state conservation efforts. A thorough baseline inventory should be conducted of all flora and fauna that will be affected by exploration, mining and milling, including both resident species and migratory species, regardless of status under the Endangered Species Act.

Species of special interest and concern include but are not limited to: Colorado Hookless Cactus, Uncompahgre Fritillary Butterfly, Bald Eagle, Peregrine Falcon, Southwestern Willow Flycatcher, Western Yellow-Billed Cuckoo, Gunnison Sage Grouse, Mexican Spotted Owl, Burrowing Owl, Spotted Bat, Allen's Big-Eared Bat, Small-Footed Myotis, Big Free-Tailed Bat, Pale Townsend's Big-Eared Bat, River Otter, Bighorn Sheep, Canada Lynx, Wolverine, Swift Fox, Black-Footed Ferret, Gunnison's Prairie Dog, White-Tailed Prairie Dog, Roundtail Chub, Flannelmouth Sucker, Bluehead Sucker, Colorado Pikeminnow, Razorback Sucker, Humpback Chub, and the Bonytail.

The PEIS should consider as an underlying protocol to analysis of wildlife and habitat impacts the interconnectedness and fragility of ecosystems in the Uravan Mineral Belt, and the necessary broad perspective and study that an ecosystem-based analysis requires. Mitigation and management plans should take into account conservation goals of maintaining healthy and diverse ecosystems in order to sustain the web of life upon which human habitation is dependent.

Impacts to be analyzed should include but are not limited to:

- Analysis of impacts, including site-specific data, to critical habitat of candidate and listed species by state or federal governments;
- Impacts to recovery efforts of Colorado River fish species;
- Impacts to reintroduction efforts of threatened and endangered species such as Bighorn Sheep, Canada Lynx, and River Otter;
- Impacts to cryptobiotic soils from uranium mining;
- Analysis of cumulative impacts to wildlife from past and current mining and milling;
- Impacts to migratory bird species protected under the Migratory Bird Treaty Act;
- Exclusion of critical habitat area from leasing tract areas;

- Analysis of impacts from seasonal wildlife closures, such as limits on mining operations in winter range for elk and deer;
- Analysis of impacts to rare and imperiled communities tracked by the Colorado Natural Heritage Program (CNHP) and to CNHP Potential Conservation Areas.

Protection of endangered and threatened species are of special concern. Section 7 of the Endangered Species Act (ESA) requires the DOE/OLM and BLM, in consultation with the U.S. Fish and Wildlife Service (FWS), to insure that any action authorized, funded, or carried out by the agencies are not likely to (1) jeopardize the continued existence of any threatened or endangered species or (2) result in the destruction or adverse modification of the critical habitat of such species. 16 U.S.C. § 1536(a)(2).

“Action” is broadly defined to include all activities or programs of any kind authorized, funded, or carried out by federal agencies, including actions directly or indirectly causing modifications to the land, water, or air; and actions intended to conserve listed species or their habitat. 50 C.F.R. § 402.02. Section 7(a)(2) of the ESA requires all federal agencies to “insure” that any action they undertake or authorize is “not likely to jeopardize the continued existence of any endangered species or threatened species”; this is the duty to “insure no jeopardy.” *Id.* § 1536(a)(2). This duty is one of the ESA’s clearest cornerstones for the conservation of listed species. As the Supreme Court has acknowledged, “[o]ne would be hard pressed to find a statutory provision whose terms were any plainer than those in § 7 of the [ESA].” *TVA*, 437 U.S. at 173.

The ESA’s implementing regulations set forth a specific process, fulfillment of which is the only means by which an action agency ensures that its affirmative duties under Section 7(a)(2) are satisfied. 50 C.F.R. § 402.14(a); *Sierra Club v. Babbitt*, 65 F.3d 1502, 1504-05 (9th Cir. 1995). By this process, each federal agency must review its “actions” at “the earliest possible time” to determine whether any action “may affect” listed species or critical habitat in the “action area.” 50 C.F.R. § 402.14. The definition of agency “action” is broad and includes “actions directly or indirectly causing modifications to the land, water, or air.” 50 C.F.R. § 402.02. The “action area” is defined to mean all areas that would be “affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” *Id.* In the context of the ULP, this includes all areas directly or indirectly affected by uranium exploration, mining, reclamation, transportation, and milling in connection with or resulting from the Program. The term “may affect” is also broadly construed to include “[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character”. 51 Fed. Reg. at 19926. If a “may affect” determination is made, “formal consultation” is required.

In formal consultation, after evaluating all relevant information, FWS prepares a “biological opinion” (BiOp), which considers the current status of the species, the environmental baseline, and the effects of the proposed action, and concludes “whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species... .” *Id.* § 402.14(g)(2)-(4). The BiOp is the heart of the Section 7 consultation process, and results in either a “likely to jeopardize” or a “no

jeopardy” conclusion. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(h)(3). To “jeopardize” to mean “engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 C.F.R. § 402.02. This requires FWS to consider “both recovery and survival impacts.” *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 524 F.3d 917, 931 (9th Cir. 2008).

If “jeopardy” is likely, FWS must prescribe in the BiOp “reasonable and prudent alternatives” to avoid that result. 50 C.F.R. § 402.14(i)(1)(ii). If FWS concludes that the project is not likely to jeopardize listed species, it must provide an “incidental take statement” (ITS) with the BiOp that specifies the amount or extent of such incidental take, the “reasonable and prudent measures” that FWS considers necessary or appropriate to minimize such take, and the “terms and conditions” that must be complied with by the action agency or any applicant to implement any reasonable and prudent measures, as well as other details. *Nat’l Wildlife Fed’n v. Nat’l Marine Fish. Serv.*, 481 F.3d 1224, 1230 (9th Cir. 2007); 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i).

Section 7(a)(1) of the ESA directs all federal agencies to consult with the Secretary and “utilize” their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species . . . .” T16 U.S.C. § 1536(a)(1). Thus, pursuant to Section 7(a)(1) of the ESA, the Forest Service must undertake formal consultations with the U.S. Fish and Wildlife Service to ensure that the proposed action “insure” that the project is “not likely to jeopardize the continued existence of any endangered species or threatened species”; this is the duty to “insure no jeopardy.”

DOE/OLM and BLM must consult with FWS, under section 7, 16 U.S.C. § 1536(a)(2); 50 C.F.R. Part 400, to consider the effects of continuing, expanding, and implementing the ULP to listed species and/or their critical habitat. Additionally, the agencies must confer with the FWS regarding the effects of the ULP on species that are proposed for listing under the ESA. It is clear that the uranium leasing can affect plants and wildlife species, as recognized by DOE/OLM in the Programmatic EA. There are threatened and endangered species that are known to, or may, occur on lease tracts, and whose survival and long-term recovery may be impacted by mining activities.

All four of the endangered Colorado River fish species may be present in the Colorado River just downstream from the confluence with the Dolores. Colorado pikeminnow occurred historically in the Dolores River and still persist in the Colorado River downstream from the confluence with the Dolores River.<sup>1</sup> The razorback sucker may occur in the Colorado River downstream from the confluence with the Dolores River and

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<sup>1</sup> U.S. Fish and Wildlife Service. 2007. Recovery implementation program recovery action plan: recovery implementation program for endangered fish species in the upper Colorado River Basin in Region 6, ed: Denver, CO. *See also* Valdez RA, Masslich WJ, Wasowicz A. 1992. Dolores River native fish habitat suitability study in Utah Division of Wildlife Resources, ed: Salt Lake City, UT.

is stocked in the Colorado River upstream of the confluence with the Dolores River.<sup>2</sup> There are relatively large and healthy populations of humpback chub in the Colorado River near the confluence with the Dolores River.<sup>3</sup> One of the very few remaining wild populations of bonytail occurs in the Colorado River upstream from the confluence with the Dolores River; since 1996 bonytail have been stocked in the Colorado River in Utah near the confluence with the Dolores River.<sup>4</sup> In addition, critical habitat for all four of the endangered Colorado River fish has been designated in portions of the Colorado River downstream from the confluence of the Dolores River.

Uranium Leasing Program activities may affect these fish species in two primary ways. First, mining operations on the lease tracts will result in consumptive use of water from the Dolores and Colorado River Basins, while past, present and reasonably foreseeable other actions on DOE lease tracts and BLM lands in the region have depleted water from the Dolores and Colorado Rivers. The direct, indirect, and cumulative effect of these depletions to the fish must be considered.

In addition, uranium mining and milling operations pursuant to the ULP may result in discharges of pollutants that may be toxic to the fish, including uranium, selenium, ammonia, arsenic, molybdenum, aluminum, barium, copper, iron, lead, manganese, vanadium and zinc. Selenium is an element of particular concern, as elevated selenium can be taken up directly from water by aquatic organisms, resulting in acute toxicity at relatively high concentrations, and accumulate in the aquatic food chain.<sup>5</sup> This can result in myriad adverse effects on fish and waterfowl populations, including impaired reproduction, deformities, reduced survival and other problems.<sup>6</sup> Selenium contamination in the Colorado River basin has been implicated in the decline of the four endangered Colorado River fish species, and may be impeding their recovery. There is evidence that high selenium levels may adversely affect reproduction and recruitment in these fishes.<sup>7</sup>

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<sup>2</sup> U.S. Fish and Wildlife Service. 2008. Programmatic biological opinion for water depletions associated with Bureau of Land Management's fluid mineral program within the Upper Colorado River Basin in Colorado in Ecological Services Office, ed: Grand Junction, CO.

<sup>3</sup> U.S. Fish and Wildlife Service (2008), *supra* note 21.

<sup>4</sup> U.S. Fish and Wildlife Service (2007), *supra* note 20.

<sup>5</sup> Hamilton, SJ. 2004. Review of selenium toxicity in the aquatic food chain. *Science of the Total Environment* 326: 1-31. *See also* Lemly AD. 1999. Selenium impacts on fish: an insidious time bomb. *Human and Ecological Risk Assessment* 5: 1139-1151.

<sup>6</sup> *Id.*

<sup>7</sup> Such effects may not be limited to the four endangered Colorado River fish species. Runoff or discharge of water with very low concentrations of selenium can result in adverse impacts on many species of fish and fish-eating waterfowl and mammals. One study in waters downstream from uranium mining and milling operations in Canada found that in areas where water concentrations of selenium are very low, selenium has been incorporated into the food chain via primary producers, gradually built up in sediments and benthic biota, and reached levels that have the potential to cause reproductive impairment in fish. In addition, a short pulse event can quickly load an aquatic environment with selenium, and that selenium could then be conserved in the ecosystem for long periods of time. Muscatello JR, Belknap AM, Janz DM. 2008. Accumulation of selenium in aquatic systems downstream of a uranium mining operation in northern Saskatchewan, Canada. *Environmental Pollution* xx: 1-7.

It is therefore imperative that the agencies consider the effects of degraded water quality that will result or is already resulting from ULP activities – particularly when the effects of other past, present, and reasonably foreseeable water degrading activities are considered as well. Past uranium mining and processing on ULP lease tracts and in the surrounding region, oil and gas development, coal mining and combustion and irrigation in areas with soils high in selenium have already caused water quality problems in the Dolores and Colorado Rivers. For example, uranium mill tailings on DOE lease tracts near the Dolores River have contaminated the alluvial aquifer with uranium, selenium, manganese, molybdenum, nitrate, radium 226, radium 228, benzene, and toluene during the last uranium boom in the Dolores River watershed.<sup>8</sup> According to FWS, “[u]ranium processing facilities operated during the late 1940s through the 1960s severely impacted the river and may have contributed to the decline of Colorado pikeminnow in the Dolores River drainage.”<sup>9</sup> Another study found that “[n]ative fish composition and abundance were found to be poor downstream of the San Miguel confluence, a river reach heavily impacted by poor water quality due to uranium tailings.”<sup>10</sup>

Proposed uranium exploration, mines and mills in the area (including the Whirlwind mine, the Paradox uranium mill and other facilities) may also result in runoff and discharge of contaminants into the Dolores River Basin.<sup>11</sup> As FWS recently reiterated in a biological opinion for oil and gas development on BLM lands: An increase in contaminant concentrations in the river would likely result in an increase in the bioaccumulation of these contaminants in the food chain, which could adversely affect the endangered fishes, particularly the predatory Colorado pikeminnow. Selenium may be of particular concern due to its effects on fish reproduction and its tendency to concentrate in low velocity areas that are important habitats for the Colorado pikeminnow and razorback suckers.<sup>12</sup>

Despite the susceptibility of the four endangered Colorado River fish species to the effects of water depletions and water degradation, as well as the presence in the “action area” of many other listed species, DOE/OLM has not in past conducted consultation with FWS pursuant to section 7 of the ESA and its implementing regulations to consider the effects to *all* endangered and threatened species that may result from continued and expanded uranium development in the Uravan Mineral Belt, even despite being warned

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<sup>8</sup> Department of Energy. 1995. Finding of no significant impact proposed remedial action at two uranium processing sites near Slick Rock, CO in Uranium Mill Tailings Remedial Action Project Office, ed: Albuquerque, NM. *See also* Department of Energy. 2007. Uranium leasing program final programmatic environmental assessment in Office of Legacy Management, ed: Grand Junction, CO.

<sup>9</sup> U.S. Fish and Wildlife Service (2007), *supra* note 20.

<sup>10</sup> Valdez et al. (1992), *supra* note 20.

<sup>11</sup> In fact, discharge of treated water from dewatering activities at the Whirlwind Mine has exceeded state water quality standards for uranium and selenium on several occasions.

<sup>12</sup> U.S. Fish and Wildlife Service. 2008. Programmatic Biological Opinion for Water Depletions Associated With Bureau of Land Management’s Fluid Mineral Program within the Upper Colorado River Basin in Colorado.

by BLM, *e.g.*, that “water depletion and/or toxic discharges [resulting from uranium mining] may affect 4 species of Colorado River fish downstream . . . .” DOE/OLM has in the past suggested that it will consider these effects before “site disturbance activities” are allowed. *See* Programmatic EA at D-4. However, this position cannot be squared with section 7’s implementing regulations, which make clear that federal agencies must “review [their] actions at the *earliest time possible* to determine whether” their actions “may affect” a listed species or its critical habitat. Doing so can better insure that to the extent necessary, conservation and mitigation measures can be implemented to extinguish or quell adverse impacts to threatened and endangered species and their habitats. This is especially important at the programmatic level. Waiting until site disturbance activities are imminent does not further the purpose of the ESA even if section 7 consultation occurs at that stage; for example, consultation at the programmatic level might have resulted in the DOE/OLM limiting the number of acres leased or excluding areas altogether due to their special environmental sensitivity. DOE’s past suggestion that it forestall review until “site disturbance activities” also fails to account for the fact that some of the lease tracts that DOE has issued lease extensions pursuant to the PEA have previously authorized mining plans. Under the ESA’s implementing regulations, section 7 consultation at *both* the programmatic level *and* site specific level is still necessary in order to direct the agency in establishing a course of action at the outset that does not jeopardize threatened or endangered species.<sup>13</sup>

#### **D. Unique Characteristics of the Area, Recreation, and Land Management**

**Concerns:** The Uravan Mineral Belt is home to the spectacular Colorado Plateau canyonlands formed by the San Miguel and Dolores Rivers and is defined by its predominantly agricultural and rural character. The region includes sweeping rangelands and sagebrush habitat, pinyon-juniper and pine forests, and dramatic geological formations that attract multitudes of visitors and extensive use of public lands. The region includes federally designated wilderness areas and roadless areas suitable for wilderness designation. Adjacent public lands include state parks and wildlife areas; national parks, monuments and recreation areas; and the presumptive designation of national Wild & Scenic River status to substantial portions of the San Miguel and Dolores Rivers. Multiple public uses of these lands co-exist, including conservation,

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<sup>13</sup> To the extent that DOE or BLM have conducted any section 7 consultation activities at all in connection with the Programmatic EA in the past, they seem to have limited themselves to a very cursory analysis that considered only those species that might be located within the direct footprint of the lease areas. The agencies did not identify any listed species that are located outside of lease tracts but still occur within the “action area” of the ULP, and certainly did not consider the effects of ULP activities to such species. *See*, 50 C.F.R. § 402.02 (“action area” means “all areas to be affected directly or indirectly by the Federal action and *not merely the immediate area involved in the action*”) (emphasis added). Indeed, no official memoranda or correspondence appear to have been generated as a result of this very truncated “consultation.” The agencies failure to properly comply with ESA section 7(a)(2) and its implementing regulations at the programmatic level, moreover, appears to have undermined their ability to carry out adequate consultation at the site-specific level, since such consultations would essentially tier to the “consultation” for the Programmatic EA and consider, if at all, only those effects of ULP activities that affect listed species or critical habitat that are located in the direct footprint of lease tracts. This is woefully inadequate under the ESA, its implementing regulations, and case law, and must not be repeated again in the context of the PEIS.

concentrated and dispersed recreation, hunting, and grazing; however, an increase in mining activities causes the reduction of multiple uses in specific areas and essentially imposes a single use of the land for the decades it takes to actively mine and then reclaim a site.

Impacts to the unique characteristics of the region and current uses of the land that should be fully analyzed in the PEIS include but are not limited to:

- Protection of the character of the San Miguel and Dolores Rivers and potential degradation caused by increased mining, especially activities that could imperil Wild & Scenic River designation;
- Compatibility with the existing federal land management plans and ongoing revisions to Bureau of Land Management and U.S. Forest Service resource, forest and travel plans;
- Compatibility with existing county master plans;
- Impact to scenic quality and viewsheds from mining and milling;
- Permanent visual impacts caused by post-mining status and reclamation;
- Impacts to existing and future ranching and farming activities and the loss of grazing acreage;
- Impacts to designated Scenic Byways, roads and other tourist attractions;
- Impacts to the development of the Paradox Trail and bicycle recreation;
- Impacts to hunters in terms of lost habitat and changes to wildlife areas and the introduction of hazardous and radioactive materials into the local food web;
- Impacts to hanggliders, paragliders and gliders from air emissions and visual disturbances;
- Impacts to boaters, paddlers, anglers and other river-based recreational users;
- Impacts to hikers, climbers, birders, artists, and other non-mechanized and non-motorized recreational users;
- Impacts to motorized and off-road vehicle recreational users.

**E. Historic and Cultural Resources:** The Uravan Mineral Belt is rich in archeological, cultural, historical, paleontological, and geological resources and protection and research of these resources is essential to developing a full body of scientific knowledge of the entire Colorado Plateau. Because of the geology of the Uravan Mineral Belt, the region

shows an abundance of paleontological resources, including previous excavations of vertebrate fossils. The Uravan Mineral Belt is an intersecting location for the development of multiple cultures, including the Archaic Stage, Fremont Culture, Desert Culture, Ancestral Puebloan, and historic and contemporary Native American cultures. Archeological resources have been identified in the Uravan Mineral Belt dating to 5500 B.C.E. Historical resources are present in the study area and continue to attract visitors, including sites and artifacts from Native American cultures, Spanish and Anglo settlement, pioneering and mining of the 19th century, and sites important to understanding the history of the Second World War and Cold War.

The PEIS must include analysis of the impacts to these resources, including but not limited to:

- Analysis and inventory of fossil resources and fossil overlay mapping, including potential study and mitigation of these resources;
- Analysis, inventory and protection of archeological and Native American resources, including pictographs and petroglyphs, dwelling sites and structures, and burial sites;
- Analysis of impacts to areas of the Colorado Plateau that are sacred to Native Americans;
- Analysis, inventory and protection of historic mining and settlement sites, such as the Hanging Flume.

**F. Hazardous and Radioactive Waste and Tailings:** Uranium mining and milling are associated with the generation of massive amounts of radioactive and toxic wastes; over 90 percent of mined rock becomes waste material in a typical uranium mining operation, and additional radioactive and toxic wastes are generated at milling operations that require extensive treatment techniques at tailing compounds. The PEIS must analyze and provide an accurate picture of the amount and character of hazardous and radioactive wastes associated with uranium mining on public lands. This must include a full analysis of the waste generated throughout the entire nuclear fuel cycle, from the waste rock piles at mining sites, to the tailing compounds at mill sites, to the waste generated at enrichment and fuel fabrication facilities, to the waste generated at nuclear power plants and national laboratories that require technologically advanced disposal techniques and permanent storage facilities that must withstand the test of time. The final destination for each type of waste should be analyzed in order to understand and mitigate the site-specific impacts of waste transportation, storage, and disposal.

The PEIS must also thoroughly analyze and understand the possibility that milling facilities in the Uravan Mineral Belt will process alternate feeds in addition to the ore generated by increased mining under the Uranium Leasing Program. Because of the low ore concentration of uranium bodies located in the Uravan Mineral Belt and the long-term low market prices that yellowcake demands, milling facilities convert into alt-feed

waste reprocessing facilities out of economic necessity. In order to fully understand this likelihood, the PEIS should include an analysis of the history of employment at the existing Cañon City and Blanding mills, including the number of employees, length of employment periods, attrition rates and lay-offs; sources of ore and alternate feeds and sources of mill revenue; and the duration and frequency of shutdowns, temporary cessations, standby periods, reduced operations, and regular operations. Additionally, the PEIS must analyze the additional processing chemicals, energy and water requirements, and waste disposal issues associated with the addition of a rare earths processing circuit at one or more uranium mills.

**G. Mill Development and Processing:** The PEIS must include a full and thorough analysis of the site-specific and programmatic impacts of the proposed Piñon Ridge mill in Paradox Valley and the likelihood that it will become the major processing facility for ore produced in the DOE leasing tracts and adjacent lands. The development of the Piñon Ridge mill must be analyzed for its impacts on the operations of the Blanding mill and the likelihood of a re-opening of the Cañon City mill, as well as the likelihood of a permanent mill closure or bankruptcy in the region.

Additionally, the PEIS must document and analyze the ongoing federal and state funds being used to remediate current and previous milling sites, including but not limited to the Superfund cleanups of Uravan and Cañon City and the reclamation sites of Grand Junction, Durango, Gunnison, Monticello, Rifle, Blanding, Naturita, Cheney, Slick Rock and Moab.

**H. Exploration and Prospecting:** Active leasing under the auspices of the DOE Uranium Leasing Program will stimulate further exploration and prospecting activities on adjacent public lands and further stress the Bureau of Land Management's ability to review and approve permits for mining operations and conduct any associated environmental assessments. The PEIS must thoroughly evaluate the related environmental and socioeconomic concerns over extensive proliferation of unpatented mining claims in western Colorado and eastern Utah. The past, present, and future degradation of these lands due to prospecting activities must be considered as well as the ability of federal land management agencies to manage and mitigate those impacts. A baseline inventory of all abandoned, reclaimed, and current mining sites should be conducted in order to facilitate monitoring of public lands and their eventual cleanup.

**I. Emergency Preparedness:** The PEIS must thoroughly consider the human and environmental risks and perils associated with accidents, catastrophes, sabotage and terrorism, calamitous system failures, and natural disasters at uranium mines, mills, storage sites, and tailing compounds. These issues and impacts include but are not limited to:

- The capacity and availability of emergency responders and local volunteer fire departments and EMT agencies;

- The health risks and impacts to emergency responders who attend dangerous or emergency situations at mining and milling sites;

- Analysis of the natural conditions and drought cycles that affect the frequency and intensity of wildfires in the Uravan Mineral Belt, and the associated fire management plans and techniques of federal land agencies and local sheriff's departments that respond to wildfires;

- The service levels and response times of emergency responders to remote mine locations and mill sites;

- The adequacy and thoroughness of site-specific emergency response plans for mine and mill sites;

- Security concerns, facility management plans, anti-terrorism protocols, and preventive measures at specific sites;

- The likelihood and number of future failures specific to uranium operations, such as the breach of tailings, flood events at mine sites, or cave-ins;

- The likelihood and number of future road and transportation accidents and associated deaths and injuries, as well as the future environmental impacts of accidents involving vehicles transporting hazardous or radioactive materials;

- The impacts to the environment and riparian areas when accidents next to the rivers or other water sources occur;

- Adequacy, reliability, and redundancy of power supplies to maintain essential systems during regular operations and emergency periods.

**J. Transportation:** A resurgent uranium industry in the Uravan Mineral Belt contemplates a significant increase in traffic on regional highways and roads under the jurisdiction of multiple entities, creating environmental and fiscal concerns. Impacts to be analyzed include but are not limited to:

- Potential impacts and land disturbances from new road development to accommodate exploration and mining activities, including run-off pollution;

- Specific impacts to Montrose County Road Y11 (the "River Road"), which closely follows the San Miguel and Dolores River corridors, poses special problems for protecting the rivers during accidents that involve hazardous or radioactive releases, and is likely to see a significant increase in truck trips as the lease tracts are mined and the proposed Piñon Ridge Mill is constructed and becomes operational;

- Impacts of truck traffic and hauling through populated areas and communities;

- Impacts of closing some backcountry roads and reducing road inventories to enhance habitat protection and environmental qualities rather than allowing access for mining;
- Impacts of truck traffic carrying finished uranium products out of the region;
- Impacts to low-quality, county-maintained roads that would be subject to use by trucks accessing mines throughout the region and the associated increase in costs to local governments to maintain the roads;
- Analysis of easements, approvals, and permits necessary to authorize hauling on regional roads;
- Analysis and mapping of main and alternate routes to each site depicting the status and quality of access routes.

**K. Occupational Safety and Health:** The uranium industry has a decades-long history of human devastation that has sickened or killed thousands of miners and millers and has created the need for a government compensation program that has paid out over \$1.6 billion to date to former uranium workers and “downwinders.” Despite the enactment of workplace safety measures to protect miners and millers in 1971, the industry continued to operate without fully implementing workplace regulations for decades. Safety violations at mine sites continue to plague the industry, underscoring the dangerous nature of uranium jobs and the continuing risks faced by workers in a climate where regulatory enforcement has been and continues to be unreliable. Occupational safety and health regulations must be fully enforced and held to the highest standards in order to safeguard the health of workers at uranium facilities in the future. The PEIS should include the following analysis, information and stipulations:

- Complete documentation and history of workplace safety and health violations by lease-holders and mining companies with current permits in the Uravan Mineral Belt;
- Complete documentation and history of all workplace accidents that resulted in a lost-time injury or death, including the safety violations that contribute to these accidents, the experience level and training of workers involved in accidents, and the conclusions of related inspections and investigations;
- Termination of leases held by companies with current safety, health, or environmental violations;
- Prohibition against locating mine vents in areas where workers are frequently present or in close proximity to portals;
- Analysis of health impacts to workers from exposure to contaminated water used in mining or milling or which is present in mines, exposure to arsenic and other

harmful particles in waste rock and ore piles, and exposure to hazardous chemicals used during work activity.

**L. Regulatory Compliance and NEPA Reviews:** The Department of Energy should require all lease-holders to strictly adhere to all local, state, and federal regulations of mining, milling, and reclamation operations, and to obtain all relevant local, state, and federal agency approvals, including county road and special use permits. Public access to records and inspection reports and participation in permitting reviews must be guaranteed.

The PEIS should document and disclose the records of regulatory violations of all leaseholders and terminate the leases of companies that have current violations, a history of violations, or violations that have remained unmitigated or unaddressed despite reasonable opportunities for such violations to be corrected. For example, the JD7, JD8, and JD9 mines and the Slick Rock tracts within the Uranium Leasing Program should be analyzed for ongoing and recurrent water-quality violations; adjacent to the leasing tract area on unpatented mining claims examples can be found in the Energy Queen, the Whirlwind and the Sunday Mines complex. The PEIS should also analyze whether increased monitoring, inspections, and enforcement actions will improve uranium industry performance and reduce violations.

The PEIS must include information about all current mine operations and leaseholders, including lease agreements, reclamation and bonding requirements, operation plans, reclamation plans, and site status. Information about the quantity of ore stockpiles, the length of time ore will be stockpiled at specific sites, and plans for eventual removal must be included.

Before mining operations resume within the leasing tract areas, the Department of Energy should require compliance with applicable Colorado state regulations, including the submission and approval of an Environmental Protection Plan. Currently, no leaseholder has received approval for an EPP from the State of Colorado.

The decision to conduct the PEIS implies the invalidity of the Department of Energy's 2007 Finding of No Significant Impact for the implementation of the current Uranium Leasing Program; the 2007 FONSI should be withdrawn.

In addition to the programmatic nature of the PEIS review, all future mining and milling operations in the Uranium Leasing Program should be subject to site-specific reviews in accordance with the National Environmental Policy Act, including a site-specific Environmental Analysis for all current and future mining and reclamation operations. This required NEPA analysis must determine all environmental and socioeconomic impacts and develop site-specific mitigation and controls. This analysis must provide adequate public notice and comment opportunities.

**M. Socioeconomic Issues:** For the past three decades, the interconnected regional economies of western Colorado and eastern Utah have become dependent upon the chief

economic drivers of agriculture, tourism, recreation, real estate, and the outside investment of retirees and part-time residents who cherish the natural landscape. Since the uranium bust of the early 1980s, the region has experienced steady declines in most natural resource industries, including mineral extraction. Uranium mining and milling is likely to create only short-term job creation for the life of the 10-year leasing term while creating significant and negative environmental and socioeconomic impacts.

Please consider the attached report, “A Socioeconomic Analysis of the Impact of the Proposed Piñon Ridge Uranium Project on Western Mesa, Montrose and San Miguel Counties, Colorado,” conducted by Power Consulting, Missoula, Mont., in December, 2010, as a basis and model for determining the potential scope of a more expansive socioeconomic study that analyzes the impacts of expanded uranium operations in the Uravan Mineral Belt, including an underlying emphasis on the positive economic benefits of reclamation.

The PEIS should conduct analysis of impacts that include but are not limited to:

- Impacts to the agriculture, ranch and farm sector, including the burgeoning growth of sustainable and organic farming in the region;
- Impacts to the existing growth sectors of tourism, recreation, and outside investment;
- Impacts to renewable and alternative energy development, including hydro and solar power;
- Evaluation of hiring preferences and preferential bidding for local employees and employers;
- Analysis of fair wage and labor practices;
- Analysis of the need for housing development in proximity to uranium mines and mills;
- Analysis of impacts to median wages and other prosperity indicators;
- Analysis of impacts from the volatility and instability of the uranium industry, including effects of intermittent employment and lay-offs;
- Analysis of impacts from exporting uranium and depleting domestic supplies;
- Analysis of the potential for uranium produced in the Uravan Mineral Belt to supply hostile foreign governments or terrorist groups with material for non-peaceful nuclear applications;

- Impacts of the socioeconomic stigma associated with uranium development and nuclear waste;
- Analysis of the socioeconomic stigma associated with industrial development;
- Analysis of the socioeconomic impacts of light, noise and dust pollution created by uranium mining and milling;

**N. Fiscal Issues:** Determining the true fiscal impacts of uranium production and identifying the long tail of subsequent effects that is inherent to any major economic development is an essential analysis that must be included in the PEIS. This analysis should include but is not limited to the following:

- The effectiveness of existing mechanisms for fiscal oversight and guarantees for reclamation;
- The potential burden to state and federal taxpayers should that oversight prove insufficient;
- Future costs to government to perpetually monitor uranium sites, enforce regulations, and prosecute violators;
- Public revenues expected from royalties, impact fees, and other moneys paid by uranium producers;
- Taxes paid by uranium producers to local, state, and federal treasuries;
- Costs of compensation and liabilities to workers and residents who suffer health or other injuries from uranium development;
- Costs and impacts to governments to build and maintain additional infrastructure to support mining and milling operations;
- Documentation of all previous and ongoing costs to local, state, and federal governments to reclaim and clean up uranium sites;
- Documentation of costs to develop and oversee radioactive waste storage facilities.

**O. Agency Referrals:** The Department of Energy should consult with all local, state, and federal agencies that have jurisdiction in the Uranium Mineral Belt region, or that regulate resources or services, or that make policy on issues that impact the uranium industry. These agencies should be consulted and engaged in the PEIS review process to address their concerns as well as to inform the analysis. These agencies include but are not limited to:

Bureau of Land Management  
US Forest Service  
US Geological Service  
US Fish & Wildlife Service  
Environmental Protection Agency  
US Army Corps of Engineers  
Bureau of Reclamation  
Mining Safety and Health Administration  
National Park Service  
Federal Emergency Management Agency  
US Department of Transportation  
US Department of Labor  
Nuclear Regulatory Commission  
International Atomic Energy Agency  
San Miguel County  
Colorado Department of Public Health & Environment  
Colorado Mined Land Reclamation Board  
Colorado Division of Wildlife  
Colorado Department of Natural Resources  
Colorado Division of Reclamation Mining & Safety  
Colorado Division of Minerals & Geology  
Colorado Department of Transportation  
Colorado Scenic & Historic Byways  
Utah Division of Wildlife  
Utah Department of Transportation  
Colorado Office of Archeology & Historic Preservation  
National Historic Trust  
Metropolitan Water District of Southern California  
Southern Nevada Water Authority  
Central Arizona Project  
Colorado River Water Conservation District  
Colorado Water Conservation Board  
Dolores Water Conservancy District  
Colorado Air Quality Control Commission  
Colorado Public Utilities Commission  
Colorado Governor's Energy Office  
Colorado Bottom-Up/Office of Economic Development and International Trade  
Colorado State Parks  
Utah State Parks  
Utah Governor's Office of Economic Development  
Utah Department of Environment & Natural Resources  
Utah Water Quality Division  
Utah Natural Resources Department  
Navajo Nation  
Southern Ute Indian Tribe  
Ute Mountain Tribe

Hopi Tribal Council  
Nineteen Pueblos of New Mexico  
Anasazi Heritage Center

### **Conclusion**

Thank you again for consideration of these public scoping comments. We are commenting to alert you to our shared concerns about the cumulative impacts of uranium development in the Colorado River Basin and to the growing numbers of people, including members of our organizations, who are concerned that the federal government is inopportunistically stimulating a long-dormant industry with a nearly universal record of creating serious and even catastrophic public health and environmental problems since its inception.

The PEIS provides an ideal opportunity to pause and look at these issues from a comprehensive vantage point and develop an understanding of how current actions are deeply interwoven with the legacy of the past and the possibilities of the future. This is an ideal opportunity to halt current government actions that stir the slumbering uranium industry and to take the hard look that the National Environmental Policy Act and common sense require. We expect the PEIS to result in a more informed and engaged public discussion about the future of our region.

We look forward to participating in the ongoing review process and management of our public lands.

Sincerely,

/s/ Hilary White, Executive Director, Sheep Mountain Alliance  
/s/ Gretchen Nicholoff, President, Western Colorado Congress  
/s/ Craig Pirazzi, Chair, Paradox Valley Sustainability Association  
/s/ Stu Krebs, President, Uncompahgre Valley Association  
/s/ Janet Johnson, Board of Directors, Grand Valley Peace & Justice  
/s/ Sharyn Cunningham, Co-Chair, Colorado Citizens Against ToxicWaste  
/s/ Matthew Sandler, Staff Attorney, Rocky Mountain Wild  
/s/ Ceal Smith, Chair, San Luis Valley Renewable Communities Alliance  
/s/ John Weisheit, Colorado Riverkeeper and Conservation Director, Living Rivers  
/s/ Taylor McKinnon, Public Lands Campaigns Director, Center for Biological Diversity  
/s/ Christine Canaly, Director, San Luis Valley Ecosystem Council  
/s/ Sarah M. Fields, Program Director, Uranium Watch  
/s/ Michael Mariotte, Executive Director, Nuclear Information and Resource Service