

CONGRESSIONAL FIELD HEARING ON “*Community Impacts of Proposed Uranium Mining Near Grand Canyon National Park*” – 28 MARCH 2008 – FLAGSTAFF, AZ

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Uranium mining of the type under discussion has had substantial positive community impacts in northern Arizona in the past and is currently having positive impacts. The modern exploration and mining operations of the era from 1980 to present have had no significant negative impacts to the community nor to the environment in or near Grand Canyon National Park. The negative impacts were with the loss of jobs due to the collapse of the uranium market in late 1980s which was due to factors beyond the local industry’s control.

The recent resurgence of the industry is due to two main factors: (1) The world’s uranium production cannot keep up with demand, and (2) The focus on harmful emissions from burning fossil fuels has shifted the emphasis back to nuclear energy as a proven source of clean, large-scale power generating capability that the world, and especially the US, needs which does not produce “greenhouse gases”. This resurgence is not expected to be another boom-bust scenario as demand for natural uranium to fuel existing and planned nuclear power plants is projected to remain strong.

The level of uranium exploration and mining activities in northern Arizona will likely be similar to what was happening from 1980 to 1995. The industry brought over a hundred technical and high-paying jobs to the region and had a substantial economic impact on local contractors and vendors. There were no deaths and few injuries given the industrial nature of the work and there were no lingering health issues to employees. The industry spent well over \$100 million dollars in the area during that time. Since exploration activities resumed in 2004, the companies operating in the area have spent over \$6 million dollars, of which, VANE Minerals (US) LLC has spent over \$1 million. Several families have moved into the area, as well as local residents having gained employment. In addition, local contractors and vendors are benefitting. All these economic improvements are on the increase.

Regarding environmental impacts, a review of the modern period of uranium exploration and mining does not reveal any significant impacts. There are no mines left abandoned. All mines with depleted reserves have been reclaimed. There are no mine openings or pits left. Exploration sites older than a few months have been reclaimed. There are no trails of elevated uranium in streams due to exploration and mining. Mining did not increase the level of uranium entering the environment but, actually caused a decrease because mining removed available uranium from the ecosystem and transported it to a mill. Mines with reserves remaining were left in a condition to be re-opened.

Uranium is ubiquitous on earth, even occurring in water. The average (earth’s) crustal abundance of uranium is 2.8 parts per million (ppm). It is ubiquitous as it is present in all rock, virtually all matter, living and non-living, and is easily transported in water. Uranium emits gamma radiation. Therefore, due to its presence everywhere, all living organisms are continuously subjected to low-level radiation to which they are immune. This low-level (background) radiation has a wide range due to uranium’s wide range of concentration due to geologic variables. Therefore, background radiation can be on the order of

several times difference from locale to locale. There are thousands of locations all over the western US where uranium values are present in or approach economic concentrations. Many of these occurrences are the location of mines which have removed the higher amounts of uranium. Prior to discovery, however, these outcrops have emitted many times background radiation while leaching naturally into the environment, mainly due to water. Today, there are thousands of natural outcrops having elevated uranium content in the western US including around and in the Grand Canyon where this is ongoing.

The easiest way to detect uranium is with a gamma-ray scintillometer, which is the tool of choice for prospecting for uranium. It is a highly-sensitive instrument than can detect a fractional increase in uranium over background. Due to the mobility of uranium, it is easily and constantly diluted and one has to be quite close to a source of elevated uranium to detect it. Erosion of uranium from outcrops having elevated uranium values may carry uranium into drainages adjacent to the outcrop. However, within a short distance, the uranium content is diluted to background. Elevated uranium can be detected for a short distance using geochemical analytical methods on samples. Mining does not change the state or composition of the uranium.

Between the early 1960s and 1995, various mining companies explored, developed, mined and reclaimed uranium mines on state, federal and private lands on both sides of the Canyon. Eleven (11) mines were in production at various times; several were depleted and reclaimed; others were placed on care and maintenance status pending improvement in the price of uranium. One mine (the Orphan Mine) was left intact after it was closed. Some 60,000 truckloads of ore were hauled to mills outside the area, about half of which came from and were hauled through the National Park on the south rim. The reclaimed mines provide an excellent template for future activity. The Orphan Mine, located on a patented mining claim on the south rim of the Canyon near Powell Point, now belongs to the Park Service and has been preserved as an important part of the recent history of the Grand Canyon.

Because of their small footprint, their position high above the water table and relatively short underground mine life, most of the mines were opened on the basis of an Environmental Assessment. The Canyon Mine, the last mine to be permitted, required an Environmental Impact Statement. This extra process was done to satisfy concerns raised locally.

Uranium in the region occurs in narrow vertical columns of recemented broken rock called breccia pipes. There are uranium-bearing pipes, as well as other uranium-bearing rocks exposed throughout the Grand Canyon district including the National Park. These rocks are naturally eroding and the contained uranium is being released into the environment. Mining tends to remove the highest grade mineralization from the ecosystem, thereby reducing the amount of uranium available to be mobilized. In the case of accidental spillage on the surface, cleanup is relatively easy and effective compared, for example, to petrochemical materials. One ore truck, of the 60,000 mentioned, overturned enroute from a mine to a mill and the ore was recovered without further incident.

The breccia pipes are host to the known highest-grade uranium deposits remaining in the United States. They are underground mines having the smallest footprint of any other uranium mine of comparable value, and possibly any mine in the United States, and have a mine life of 3-5 years using current mining

technology. Exploration requires a very small area typically of 1-3 acres and 10-20 acres for a mine site. Exploration sites are reclaimed in many cases, to no visible remains. Mines are reclaimed to near the original conditions and, in some cases, almost no evidence of mining activity remains.

The historic activity provides an excellent record of both management and reclamation – examples include the Hermit, Pigeon, and Hack 1-3 mines. We believe that VANE's operational guidelines exceed current standards. We have encouraged meetings with the Native American people and environmental groups, including site visits to operating drill sites. Where possible, we have incorporated their recommendations into our program to an extent greater than that required by regulations. VANE has also incorporated additional measures requested by the Forest Service following issuance of the Decision Memo, again, beyond requirements stipulated by regulations. In conducting archaeological surveys in the project areas, VANE's archaeologists have discovered and documented previously unknown archaeological sites that add to the history of the area.

VANE and its employees are committed to this business; we are already part of the northern Arizona community and have been for the past three years. The economic benefits of the uranium activity are already being felt and will be substantial. To impose closures or suspensions of these activities will negatively impact people employed by the industry and the area's economy far more than the impact the operations will have on the Grand Canyon or the groups who claim to be affected. Considering our country's current energy concerns and the concerns with consuming fossil fuels, it would be short-sighted to impose actions that would stall the development of such an ideal resource and threaten us with more dependence on foreign energy sources. The grade of these resources, as well as the technical expertise required in their exploration and mining, make them critical for national security.

My university degree is in geology. I have spent 30 years in exploration and mining, of which 12 years were spent in uranium activities around the Grand Canyon where I supervised dozens of drilling projects. I lived in Flagstaff from 1982 to 1988, during which time I built a home and started a family. My oldest daughter graduated from Northern Arizona University in 2007. Others, like myself, as well as the representatives in the BLM, Forest Service, and State, are well-trained and experienced regarding the operations being undertaken. While I do not officially represent the other companies active in the region, I am certain that this reflects their position. Representatives from the Forest Service and the BLM in northern Arizona and Utah (and within the State agencies of Arizona and Utah), our contractors, and ranchers with whom we come in contact, can attest to VANE's efforts to comply with regulations, make operational improvements, and to be a good neighbor.

The uranium industry has examples, like many industries unfortunately, of past misguided managing that resulted in serious environmental and health issues. Most of the examples however, were due to unknown or unrecognized hazards. Lead and mercury are similar elements in that health issues were not understood early on. The past uranium issues were studied and corrected and provide an excellent example of "how not to do things". These past examples have not happened in the Grand Canyon area during the modern uranium activities, and will not happen.

Recently, there have been many misleading and false statements put out by special-interest groups that have been propagated by the news media and embraced by political figures. This has resulted in calls for immediate and far-reaching changes prior to verifying these statements through gathering factual information.

The present call for immediate and far-reaching changes by politicians and environmental groups is without merit. Mining activity ceased in 1995, giving all parties 13 years in which to demonstrate harmful effects. There was no comment by these groups during the 30-day public notice and comment period in the approval process of VANE's exploration Plan of Operations that culminated in the Decision Memo issued by the Forest Service in February, over which they are now being sued.

Based on the information provided above, VANE does not believe that current or future activities constitute the actions requested by Governor Napolitano and Congressman Grijalva. Most of the prospective ground has already been claimed, as it was in the past. And the historic activity presented in this testimony essentially represents an environmental impact analysis over a 40-year study period beginning in the 1960s that has resulted in no significant impact.

VANE hopes that moving forward, the industry will be judged on its current performance than on past unrelated events. We further hope that anyone with concerns or questions will make a thorough assessment of the facts. Please contact VANE, the other companies, or the various governmental agencies having jurisdiction should you have questions.

**Reference:**

Supply of Uranium - UIC Nuclear Issues Briefing Paper # 75 - March 2007