WRITTEN TESTIMONY
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OFFICE OF FEDERAL AND STATE MATERIALS AND ENVIRONMENTAL MANAGEMENT PROGRAMS
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
UNITED STATES HOUSE OF REPRESENTATIVES
CONCERNING
THE HEALTH AND ENVIRONMENTAL IMPACT OF URANIUM MINING ON THE NAVAJO NATION

OCTOBER 23, 2007

INTRODUCTION

Mr. Chairman and Members of the Committee, it is a pleasure to appear before you today to discuss the U.S. Nuclear Regulatory Commission's (NRC) regulatory role for uranium recovery facilities. I am also here to address any related concerns you may have regarding the health and environmental impact from these operations on Navajo land.

URANIUM RECOVERY

NRC regulates uranium recovery facilities but does not regulate uranium mining or abandoned uranium mine sites. These operations are the responsibility of State regulators. Mining involves the actual digging and excavating of uranium ore from the earth, whereas uranium recovery involves the processing of uranium following its removal from its original place in nature into a compound commonly referred to as "yellowcake."

There are two primary uranium recovery processes: conventional and in situ leach (ISL). A conventional mill processes uranium ore which has been removed from the earth by either open pit or underground mining. The ore is then crushed and sent through a mill, where extraction processes concentrate the uranium. Waste from this process is primarily mill tailings, a sandy ore residue that poses a potential hazard to public health and safety due to its radium and chemical content. Conventional milling produces a substantial amount of mill tailings. NRC regulates the safe storage of mill tailings.

In the ISL uranium extraction process, wells are drilled into rock formations containing uranium ore. Water, usually fortified with oxygen and sodium bicarbonate, is injected down the wells to leach out and mobilize the uranium in the rock so that it dissolves in the groundwater. The uranium-containing solution is controlled by pumping more water out of the formation than is pumped into it. Containment and water quality are assessed through a network of monitor wells. The uranium-containing solution is pumped to a processing plant, which separates the uranium and concentrates it. Although these ISL facilities are often referred to as "mines", the entire uranium extraction process, below and above ground, is considered as processing and is covered under NRC jurisdiction under the Atomic Energy Act. Waste from this process is specific in nature (i.e., filters, piping), is relatively small and can be disposed in a tailings pile at a conventional mill site

or at a licensed disposal facility. Tailings are not generated at ISL facilities. However, ISL facilities may have settling ponds where sediment containing uranium can accumulate and which must be remediated as part of decommissioning.

NRC'S ROLE UNDER UMTRCA

With the enactment of the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA), mill tailings became subject to NRC regulation. Title I of UMTRCA addresses mill tailings sites that were abandoned by 1978. Title II focuses on uranium recovery facilities and mill tailing sites that were operating in 1978; these sites are specifically licensed by NRC or an Agreement State[1].

Title I – Reclamation Work at Inactive Uranium Tailings Sites

Title I of UMTRCA covers 22 inactive uranium mill tailings sites. Title I established a U.S. Department of Energy (DOE) program to remediate uranium mill sites that were abandoned prior to the enactment of UMTRCA in 1978. Congress directed the U.S. Environmental Protection Agency (EPA) to promulgate the standards for remediation. These standards primarily address stabilization of the tailings pile and the cleanup of on and offsite contamination, including contaminated groundwater. Under Title I, the DOE is responsible for remediation of these abandoned sites. The NRC is required to evaluate the DOE's design and implementation of its remedial action, and, after remediation and NRC evaluation, concur that the sites meet the standards set by the EPA (40 CFR Part 192). The DOE's authority to perform remedial action at these sites expired in 1998, except for the authority to perform groundwater restoration activities.

Title I also requires DOE to remediate vicinity properties. Vicinity properties are land in the surrounding area of mill sites that DOE determined were contaminated with residual radioactive materials from the mill site. Here again, NRC's role is limited to evaluation and concurrence on DOE's remediation design and implementation. However because of the large number of vicinity properties, DOE prepared a document ("Vicinity Properties Management and Implementation Manual" or VPMIM) containing generic procedures for identifying and remediating vicinity properties. NRC concurred on the VPMIM and only separately evaluates and potentially concurs in vicinity property remediations that do not conform to this generic document.

10 CFR §40.27 – General License for DOE Established by Regulation

To implement Title I, the NRC promulgated regulations (10 CFR §40.27) to establish, in the regulation itself, a general license authorizing DOE's custody and long-term care of residual radioactive material disposal sites with conditions imposed by the regulation. These conditions include requirements for the monitoring, maintenance, and emergency measures necessary to protect public health and safety and other actions necessary to comply with the standards promulgated by the EPA (40 CFR Part 192). Although the DOE is not an NRC licensee during site cleanup, NRC must evaluate and potentially

[1] Section 274 of the Atomic Energy Act of 1954, as amended, provides for State assumption of NRC's regulatory authority to license and regulate byproduct materials (radioisotopes); source materials (uranium and thorium); and certain quantities of special nuclear materials. NRC periodically reviews these programs for adequacy and compatibility with NRC regulations.

concur with the DOE that its remedial action has been completed. The NRC general license authorizing the custody and long-term care of a specific site becomes effective after NRC concurs with DOE that its site-specific remedial action has been completed and when the Commission accepts DOE's Long-Term Surveillance Plan (LTSP) for the site that meets NRC requirements as specified in our regulations. After these actions, the DOE is the perpetual custodian of a site under NRC's General License established in this regulation.

An LTSP must include an executed waiver under which any person – including an Indian Tribe – holding any interest in the Title I disposal site, releases the United States from any liability or claim arising from the DOE's remedial action. A two-step process with respect to NRC concurrence was used at sites where groundwater contamination exists. At such sites, the NRC concurred on surface remediation; once the NRC accepted the LTSP, each site was then included in the general license in 10 CFR §40.27. NRC concurrence in groundwater remediation was addressed separately and, in some cases, has not yet occurred. Ongoing groundwater monitoring is addressed in the LTSP to assess performance of the tailings disposal units. When the NRC concurs that groundwater restoration has been completed, the LTSP may be modified as necessary to reflect completion.

Once an LTSP has been approved, the DOE has the primary responsibility to ensure public health and safety at the site. However, the NRC continues to have an oversight role. The NRC receives annual updates on the results of the DOE's Title I inspection program and under 10 CFR §40.27, the NRC maintains permanent right-of-entry to Title I Sites. NRC staff periodically accompany the DOE during Title I site inspections. If, for any reason, (e.g., DOE report, NRC inspection, allegation), the NRC determines the site is not safe, it can require DOE to correct the condition.

Title II – Licensed Uranium Recovery Facilities and Mill Tailings Sites

Title II of UMTRCA established the framework for NRC and Agreement States to regulate mill tailings and other wastes at uranium and thorium mills licensed by the NRC at the time of UMTRCA's passage in 1978. The statute created a second category of byproduct material, referred to as 11e.(2) byproduct material, defined as the tailings or wastes produced under any license by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content. Under Title II of UMTRCA, NRC regulates this byproduct material during mill operation and requires that the site be properly closed prior to terminating the license. The NRC standards for site closure, contained in Appendix A of 10 CFR Part 40, conform to standards promulgated by EPA (40 CFR Part 192) and are similar to EPA standards for the remediation of Title I sites. After license termination, the site is governed by another general license, established in NRC regulations (10 CFR §40.28) which imposes conditions for custody and long-term care of uranium or thorium byproduct materials disposal sites. A State can become the perpetual custodian. However if a State chooses not to do so, DOE must assume custody. To date, no State has become a perpetual custodian.

NRC'S ROLE WITH SITES ON OR NEAR NAVAJO LAND

Four Title I sites are on Navajo lands: Mexican Hat, Utah; Monument Valley, Arizona; Shiprock, New Mexico; and Tuba City, Arizona. For these sites, the NRC has concurred

on DOE's completed surface remediation of residual radioactive material. Currently, groundwater cleanup is ongoing at the Shiprock and Tuba City sites. NRC has not yet received the final groundwater cleanup plan at Monument Valley. Following several years of monitoring and in consultation with the Navajo Nation, groundwater monitoring has been discontinued at the Mexican Hat site. The LTSPs have been approved by NRC for the Mexican Hat, Shiprock, and Tuba City sites; therefore, the NRC now oversees the DOE's custody and long-term care of these two sites under the General License established by 10 CFR §40.27. An LTSP for Monument Valley, Arizona is pending from the DOE.

UMTRCA authorized DOE to enter into a Cooperative Agreement with the Navajo Nation. The purpose of the agreement was to perform remedial actions at the four Title I sites identified above. The agreement contained a waiver releasing the U.S. Government of any liability or claim by the Navajo arising from the remedial action and holds the U.S. Government harmless against any claim arising out of the performance of the remedial action. The NRC required such an agreement prior to bringing the sites under the general license in 10 CFR §40.27.

Currently, there are no Title II sites on Navajo land. However, two Title II sites are adjacent to Navajo lands: Crown Point, New Mexico (Hydro Resources Inc. is the licensee) and Churchrock, New Mexico (United Nuclear Corporation is the licensee). NRC issued a license to Hydro Resources in 1998 for an ISL uranium recovery facility at Crown Point. However, the construction has not been initiated. United Nuclear Corporation is conducting groundwater cleanup from a conventional uranium milling site at Churchrock. Under a Memorandum of Understanding with EPA, the NRC has responsibility to regulate the onsite groundwater cleanup. EPA also has regulatory responsibility for this site because Churchrock is a Superfund site.

With regard to future license applications for uranium recovery facilities, the NRC is preparing a Generic Environmental Impact Statement (GEIS) to assist in evaluating the potential environmental impacts of site-specific facility operations. Recently, the NRC held several public meetings to solicit comments from the public on the scope of the GEIS. The last of these meetings was in Gallup, New Mexico, on September 27, 2007. The draft GEIS will be issued for public comment, scheduled for Spring 2008. NRC staff have also met with representatives of the Navajo EPA and the Navajo Dine Policy Institute about future uranium recovery activities. The GEIS does not end opportunities for public involvement. Public participation will be part of the process for each proposed site. NRC intends to consult and interact with the Navajo Nation on any applications that may have implications for the Navajo. We would also encourage the Navajo EPA and Dine Policy Institute to monitor the licensing process for the first new ISL license application that was recently filed by the Oklahoma-based Energy Metal Corporation to gain additional insights into the NRC licensing program.

CONCLUSION

Mr. Chairman and Members of the Committee, I hope my testimony provides you with an understanding of NRC's role with regard to these sites. I would be pleased to respond to your questions.