Uranium Working Group presentation of findings to

Uranium Mining Subcommittee of the Coal and Energy Commission

December 11, 2012

Cathie France
Deputy Director for Energy Policy, DMME

Virginia Department of Mines Minerals and Energy

DEQ Virginia Department of Environmental Quality

VDH Virginia Department of Health — Protecting You and Your Environment

http://www.uwg.vi.virginia.gov/

Presentation Overview

- Governor's Directive
- UWG Activities
- Framework for Uranium Mining and Milling
- Agreement State Discussion
- General Roles of State Agencies
- General Roles of Federal Agencies
- Policy Considerations
- Socioeconomic Study

Governor's Directive

- January 2012, members of the General Assembly asked the Governor to form a working group to conduct a scientific analysis and answer questions raised by the NAS and other reports.
- January 19, 2012, Governor McDonnell created the UWG consisting of staff from the DMME, DEQ and VDH.
- The UWG's role is fact finding to support informed decision making, ***NOT*** to make a recommendation on the moratorium.
- The Governor provided the UWG with 18 tasks to complete and to report their findings to the Governor by December 1, 2012.

Governor's Directive

- Establish a framework that could be used to govern all aspects of mining/milling uranium in VA
- Determine the measures necessary to proactively protect worker health and safety, including monitoring for occupational impacts.
- Establish the process by which all three agencies would adopt a unified emergency preparedness and response plan.
- Develop a comprehensive financial assurance program for uranium mining and milling.

Governor's Directive

- Assess whether the VA framework needs to be more stringent than existing federal regulation to reflect population density, rainfall and temperate climate, water table, unique geology
- Analyze the expertise and resources needed for DMME, DEQ and VDH to implement and enforce regulatory programs.
- Extensively consider and seek public input regarding economic development impacts and the protection of existing businesses, industry, individuals and property that may be impacted
- Establish a coordinated plan for conducting meaningful public outreach throughout the process

UWG Activities

- DEQ/DMME and VDH, worked with Wright Environmental Services, to provide background, reference studies, research, hazards and best practices, recommendations, etc.
- Public meetings: 6 UWG and 7 VDH meetings to provide information, collect and respond to comments and concerns.
- Researched and reviewed previous studies, other state and federal legislation and regulations, and best practices to prepare report, presentations, etc.
- Consulted with staff from the NRC, other states and Canada.
- Presented report to the Governor and he sent to legislators on November 30.

Framework for Uranium Mining and Milling

- If the ban is lifted, a comprehensive uranium mining statute would be needed.
- Decide whether Virginia will regulate milling or to leave this responsibility with the NRC.
- Agencies draft and promulgate regulations under the Administrative Process Act (APA), which includes public comment and hearings.

Framework for Uranium Mining and Milling

- Applicant prepares an environmental report and applications to the appropriate agencies for review:
  - DMME for a mine permit
  - NRC or VDH for a mill license
  - DEQ for environmental permits
- Permit/License process includes opportunities for public comment:
  - Environmental Impact Statement (EIS)/Environmental Impact Analysis (EIA)
  - Mine permit
  - Mill license

General Roles of State Agencies

- DMME is the lead agency for the health and safety of mine workers and the protection of the environment from activities associated with mining.

- DEQ is the lead agency for the protection of water quality and quantity, and air quality. DEQ has delegation for several federal programs including the Clean Air Act and the Clean Water Act.

- The mission of VDH is to promote and protect the health of all Virginians.

General Role of State Agencies

- The Virginia Department of Agriculture and Consumer Services (VDACS) is responsible for enforcing laws and regulations relating to consumer protection and the promotion of agriculture.
- The Virginia Department of Emergency Management (VDEM) works with local, state and federal agencies and voluntary organizations to provide resources and expertise on emergency preparedness, response, recovery and mitigation.

General Roles of Federal Agencies

- Nuclear Regulatory Commission (NRC) protects the health and safety of the public and the environment.
- Environmental Protection Agency (EPA) is the lead agency for regulating radon; sets health and environmental standards.
- Department of Energy (DOE) may be the long term custodian at decommissioned mill tailings sites.
- Mine Safety and Health Administration (MSHA) enforces occupational health and safety at mines and mills.

Policy Considerations

Public Participation

- All regulatory actions will follow the public participation requirements of the APA.
- VDH and DEQ have citizen boards that have authority to adopt regulations and provide for additional public comment.
- Any statutory framework for mining should include multiple opportunities for public input throughout the complete lifecycle of the operation.

Policy Considerations

Public Participation

- Virginia could require development of a data management system that allows the agencies and the public to have timely access to environmental data.

- Any operation could be required to develop a Community Involvement Plan laying out an ongoing process for public involvement throughout operation of the mining and/or milling activity.

Policy Considerations

Uranium Mining Progam - DMME

Key components of a uranium mining program are:

- Permit application including:
  - EIA
  - Operations plan including radiation protection for mine workers
  - Groundwater protection plan
  - Surface drainage plan
  - Environmental monitoring plan including long term surveillance plan
  - Reclamation plan
- Compliance and enforcement
- Financial Assurances
- Interagency collaboration
- Public participation

Policy Considerations

Key components of a DEQ regulatory program:

Water Quality Standards

- Establish a Scientific Advisory Committee:
  - to review and make recommendations on the groundwater and surface water criteria for radioactivity would ensure that the standards are protective.
  - to look at the need for a special standard for public water supplies downstream of any uranium mining and/or milling operation.

Policy Considerations

Permitting

- Air Permitting
  - Addition of radionuclides and radon to toxics regulated under the state air toxics program
  - Require baseline information by which to measure changes
- Groundwater Permitting
  - Establishment of a groundwater management area
  - Anti-degradation standard for engineering design requirements
- Surface Water Discharge Permitting
  - all excess water should be stored and released only if it meets both:
    - A new special water quality standard, and
    - Virginia new source technology effluent limits for process wastewater.

Policy Considerations

Monitoring

- Air Quality Monitoring
  - Evaluate the current air-monitoring to determine whether additions are needed to provide an early warning of offsite impacts.
  - Add monitoring for radon, radionuclides and radiation.
- Groundwater Monitoring
  - Comprehensive hydrologic characterization and a groundwater monitoring network installed and operated by the owner
  - operation of an offsite monitoring network using private well sampling and dedicated monitoring wells
- Surface Water Monitoring
  - Add uranium and radionuclides to Trace Element Monitoring Program
  - Routine stream monitoring in the watershed

Policy Considerations

Key components of a public health program are:

Monitoring

- Licensee monitors for contaminants and must make timely notifications of any exceedance of regulatory limits to the licensing agency. The licensing agency will conduct inspections and perform confirmatory surveys.
- VDH would need additional authority to investigate individual human exposures or health outcomes and be prepared to conduct epidemiologic studies.

Policy Considerations

Environmental Monitoring of Commercial Food Sources

- VDH would need additional authority to perform environmental monitoring of commercial food sources surrounding a uranium mine and mill site.
- This information should be made available to the public.

Policy Considerations

Private Water Supplies

- VDH would need the authority to establish water quality standards for the operation of private wells in the groundwater management area for uranium mines and mills.
- VDH would need the authority to require the sampling and analysis of private water supplies on an approved routine basis.
- VDH would need the authority to require permanent abandonment of private wells that exceed regulatory limits to protect public health.
- VDH would need the authority to require the licensee to remediate or provide alternate water supply.

Policy Considerations

Regulations Concerning Recreational Use of Water

- VDH would need the authority to establish water quality standards for swimmable surface water.
- VDH would need the authority to prevent access to waters at summer camps, campgrounds and beaches when levels exceed the developed water quality standards for swimmable surface water.

Policy Considerations

Mine Financial Assurances

- Strong financial assurances are a critical part of any statutory and regulatory framework and should be funded by the operator and established prior to the commencement of operations. These include:
  - Reclamation bonds
  - Liability insurance
  - Emergency response fund for use in case of accidental releases during operations or post-closure
  - Long-term environmental monitoring fund

Policy Considerations

Mill Financial Assurance

- The NRC has a strong financial assurance program for uranium mills.
- Sufficient financial assurance must be established prior to commencement of operations;
- Funds must be sufficient for:
  - Decontamination and decommissioning of the milling site to levels which allow unrestricted use, and
  - The reclamation of tailings and/or waste areas.

Policy Considerations

Mill Financial Assurance

- Under current NRC regulations:
  - a minimum charge of $250,000 (1978 dollars, currently about $900,000) must be paid prior to termination of the mill license to accommodate long-term monitoring costs;
  - A financial assurance plan must be submitted with the environmental report; and
  - The financial assurance plan must be made available for public review.

Agreement State Discussion

- The NRC is the lead regulatory authority for uranium milling.
- Virginia is an Agreement State for radioactive materials licensing and inspections – *but not for uranium milling*.
- The NRC would be the lead agency for regulating uranium mills *unless* Virginia amends our current agreement.
- Virginia would have to follow a very specific process to gain NRC approval to become a uranium milling Agreement State:
  - Outlined in NRC Agreement State Procedure SA-700, "Processing an Agreement."

Agreement State Discussion

- Process begins with submission of Governor's Letter of Intent to NRC.
- State Actions Prior to Submittal of Draft Application:
  - Legislation adopted
  - Compatible Regulations issued
  - Hiring and Training of Staff
  - Funding for Program
  - Program Procedures in place
- NRC will not sign Agreement until all aspects of uranium mill program is in place.

Agreement State Discussion

- The NRC and Virginia may impose additional restrictions by using licensing conditions, if needed.
- Agreement State regulations *may* be more stringent than NRC's, where permissible and approved by the NRC.
- Some restrictive milling regulations that may be considered:
  - Environmental monitoring frequency, distances, reporting
  - Water treatment;
  - Laboratory analysis;
  - Emergency response actions.
- Public participation will be essential at every stage of the process
- Timeframe for amending the agreement (minimum 3 years).

Agreement State Discussion

- Factors to consider on whether or not to amend the agreement:
  - State control vs. federal control;
  - Institution of additional or more restrictive regulations beyond the NRC;
  - Start-up costs;
  - Staffing;
  - Training requirements; and
  - Equipment.

Agreement State Discussion

- Other cost considerations include but are not limited to:
  - Radiological monitoring, sampling and analysis;
  - Responsibility to review designs, operation plans and procedures for proposed facilities;
  - Inspecting the operating facility;
  - Approving a facility closure plan & decommissioning.

Resources Needed

DMME

- DMME anticipates needing 5 FTEs in the areas of mine inspection, mine engineering, hydrogeology and other technical specialists.
- DMME would also need additional equipment, vehicles, laboratory services and field supplies
- Total cost for these additional resources would be approximately $1.12 million annually
- Although funding will be required initially to fully develop and support the permitting program, these costs would eventually be covered through permit and license fees

Resources Needed

DEQ

- DEQ anticipates utilizing existing staff such as hydrologists, engineers and biologists to review and issue various environmental permitting, compliance and monitoring.
- DEQ anticipates needing 4 FTEs in the areas of environmental permitting, compliance and monitoring.
- DEQ would also need additional equipment and lab analysis services.
- Total cost for these additional resources would be approximately $800,000 annually
- The source of funds would need to be determined.

Resources Needed

VDH

PROGRAM	CURRENT STAFFING	IF MORATORIUM LIFTED (mining)	IF AGREEMENT AMENDED (milling)
DRH: Radon	0	1.5 FTE and $100,000 per year	___
DRH: Environmental Monitoring	1.5 FTE and 3 Wage	1 Wage and $45,000 per year	___
DRH: Emergency Preparedness	1.5 FTE	Additional $10,000 per year	___
DRH: Radioactive Materials Program	6 FTEs and 2 Wage	0 additional	About 8 FTEs and $1 million per year (licensee fee based)

Policy Considerations

PROGRAM	CURRENT STAFFING	IF MORATORIUM LIFTED	IF AGREEMENT AMENDED
Office of Epidemiology	No uranium specific staff. Several Epis and one FTE toxicologist on staff.	2 FTE epidemiologists ($90K each, one local, one central) ;1 FTE environmental health educator ($65K); 1 FTE Data manager ($75K); $10K per year each for computer, travel, supplies ; Lab analysis ($75K/year)	—
Office of Drinking Water	No uranium specific staff.	½ FTE ($40K)	—
Office of Family Health Services	No uranium specific staff. Several Epis on staff. Virginia Cancer Registry staff.	•$10K per year for Cancer Registry training; Surveillance efforts coordinated with OEpi staff	—
Office of Environmental Health Services & Community Health Services	No uranium specific staff.	6 FTEs plus sampling and analytical costs =$1,858K	—
Office of Minority Health and Health Equity	No uranium specific staff.	0 FTE	—
Total VDH Staff		12 FTES, 1 Wage Employee and an additional $250,000 per year	About 8 FTEs and $1 million per year (licensee fee based)

Policy Considerations

Possible Funding Sources

- Mine permitting fees (initial and annual).
- Mill licensing fees (if Virginia becomes an Agreement State).
- Severance taxes.
- General Funds.
- Funds generated should be held in a dedicated non-general fund account in each agency.

Socioeconomic Study

- UWG is engaging in a socioeconomic study to:
  - Assist in understanding potential business impacts created by uranium mining and milling.
  - Gauge perception regarding a positive or a negative influence on economic development opportunities.
- The study is comprised of three components:
  - A survey of Virginia Business Leaders.
  - A related survey of Site Location Consultants.
  - An Economic Impact Analysis incorporating the results of the two surveys.

Socioeconomic Study

- Survey questions address:
  - Awareness of uranium deposits and the existing moratorium.
  - Perceptions of Virginia as a place to conduct business.
  - Perceptions of client attitudes to use Virginia businesses and products.
  - Positive or negative impacts on agriculture, tourism, education, businesses relocation, the housing market, etc.

Socioeconomic Study

- The report will include the tabulation and analysis of each survey question, demographics, geographic distribution and any other appropriate parameters.

- The report will include key findings and recommendations and will be delivered to the Governor by January 15th.

Questions?