Uranium Study:

Full Components of
Environmental Impact Analyses

Commonwealth of Virginia

Department of Environmental Quality
Department of Mines, Minerals and Energy

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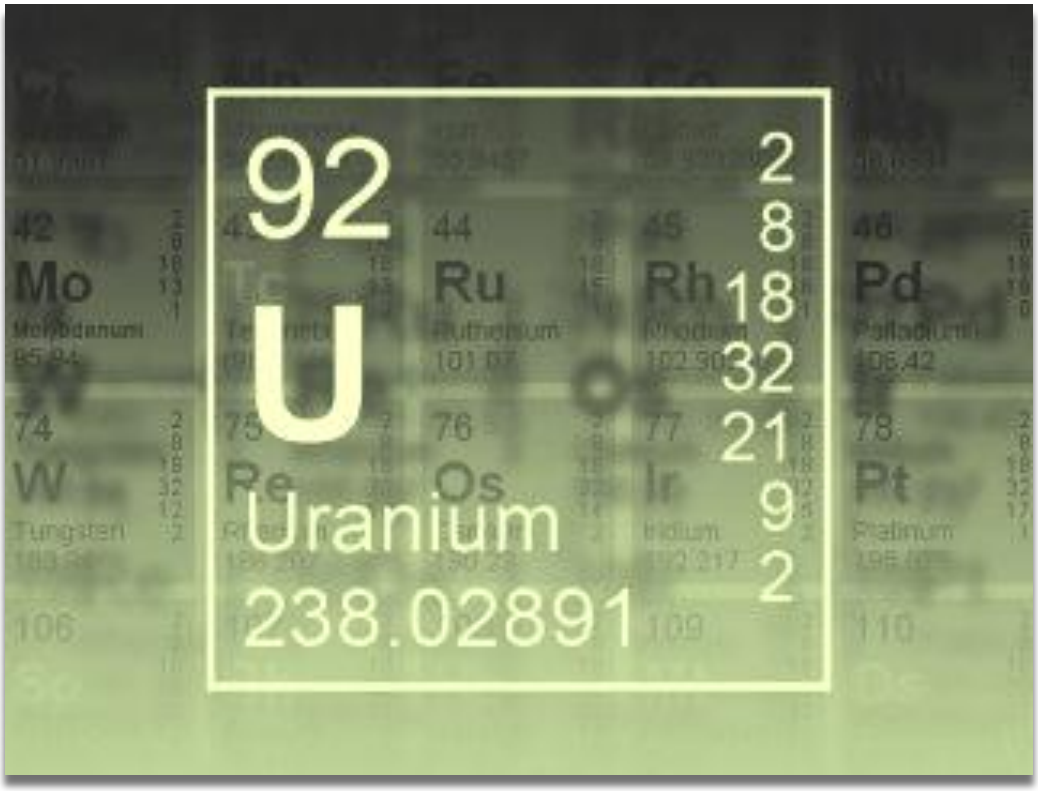

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1.0 INTRODUCTION

The Commonwealth of Virginia (Virginia), Department of Environmental Quality (VDEQ) has contracted with Wright Environmental Services, Inc. to provide Virginia's Uranium Working Group with information addressing the full components of an environmental impact analysis (EIA) for uranium mining and milling. An EIA is a multi-disciplinary investigation to evaluate potential significant environmental effects and impacts of a proposed action (i.e., uranium mining and/or uranium milling). The Environmental Impact Statement (EIS) process required by the National Environmental Policy Act of 1969 (NEPA) as implemented by the Nuclear Regulatory Commission (NRC) is used to illustrate the complete components and the legal context for future EIAs which could be applied to uranium mining and/or milling in Virginia. The purpose of this report is to identify the necessary and relevant EIA components from existing effective regulatory frameworks to aid Virginia in developing a conceptual regulatory framework for the life-cycle of potential uranium mining and milling in Virginia. The objective of this report is to enhance the Working Group's understanding of the required components of a comprehensive EIA as well as the associated legal requirements and the timing of the associated analyses.

1.1 Procurement Summary

On March 2, 2012, the Department of Environmental Quality issued the request for proposal (RFP)# 12-06-PJ (Uranium Study). The purpose of the procurement was to acquire contractor services to provide information and expert analysis of uranium mining and milling issues in Virginia relevant to the statutory jurisdictions of VDEQ and VDMME. Sealed bids were submitted by April 3, 2012 and contract EP8811027 was awarded on May 21, 2012.

The Contract identifies two major work Tasks (A and B). Work Task A involves the development of an initial report based on 1) a review of studies related to uranium mining and milling in Virginia, 2) a comparison of other existing regulatory programs for uranium mining and milling and 3) a review of emerging standards from international organizations. The Initial Report was submitted on July 30, 2012.

Work Task B involves ongoing technical advice and assistance to the UWG. The efforts of Work Task B will result in a series of interim reports, analyzing a range of issues identified in the RFP, as well as other issues identified by the UWG. The efforts of Work Task B will provide additional detail to the issues and recommendations addressed in this initial report. This report is developed in response to Work Task B.2.g and is one of several reports developed as part of the uranium study.

1.2 Purpose and Objective

The purpose of this Report is to respond to Work Task B.2.g in Contract EP881027. Based on a review of existing studies, existing regulatory programs and our collective experience, this report presents an analysis and points for consideration concerning the full components of an environmental impacts assessment that a potential future regulatory framework for uranium mining and milling in Virginia might be expected to encompass.

2.0 REGULATORY FRAMEWORK

Typically states, and federal agencies when federal surface or subsurface interests are involved, require permit/license applicants to conduct studies and investigations for proposed activities that have the potential to cause impacts to the community, environment or public health in some way. Currently, the most robust national assessment of impacts is addressed by NEPA. Under NEPA, procedural requirements have been established by all federal agencies to conduct environmental reviews. These reviews can result in several outcomes, which include a Categorical Exclusion (CATEX) or preparation of Environmental Assessments (EA) or Environmental Impact Statements (EIS). If an EA results in a determination that significant impacts on the environment would not occur from the proposed action then a Finding of No Significant Impact (FONSI) would be produced. NEPA serves to ensure that environmental factors are considered equally with other factors in the decision-making process. This section summarizes the NEPA process and requirements to illustrate the most robust environmental review process currently applied in the US.

2.1 National Environmental Policy Act (NEPA)

NEPA, enacted on January 1, 1970, establishes the national environmental policy and goals for the protection, maintenance, and enhancement of the environment and provides a process for implementing these goals by the federal agencies. The Act also established the Council on Environmental Quality (CEQ), which is responsible for the development and maintenance of the CEQ regulations for NEPA compliance. These regulations are found in 40 Code of Federal Regulations (CFR) Parts 1500-1508. NEPA rules are applied to projects at any level of government in which federal funding is involved, where work will be conducted by the federal government or where a permit or approval from a federal agency is required.

The CEQ regulations require that federal governmental agencies create procedures to implement NEPA. Since each federal agency has a specific mandate and mission, NEPA allows for variability in implementation of these procedures between federal agencies as long as the procedures met the CEQ regulations. As a relevant example, the U.S. NRC NEPA regulations are promulgated in 10 CFR Part 51 "*Environmental Protection Regulations for Domestic Licensing and Regulated Regulatory Functions*". These requirements and associated guidance (see Table 1) describe the components that must be addressed for a comprehensive assessment of potential environmental impacts when applying for an NRC license. Though NRC does not regulate mining, this comprehensive process for assessing potential impacts could be readily applied by the Commonwealth to uranium mining and/or milling.

The NEPA process starts when a federal agency proposes to undertake an action such as approving a license or permit in response to a participant's application (e.g., to develop a mine and/or mill). Assessments under NEPA are tiered, depending on the magnitude of associated impacts. Figure 1 illustrates the general process by which an agency determines the level of environmental impact analysis required. One of three levels of NEPA analysis will result from this process, a Categorical Exclusion, an Environmental Assessment (EA) or and Environmental Impact Statement (EIS).

If an agency determines that, based on previous determinations for similar actions at comparable sites, the proposed action (e.g., the refurbishment of a road surface, replacement of an existing permitted storage tank, etc.), will have no significant environmental impacts then it may exempt the action from environmental impact analyses; this is called a Categorical Exclusion. A number of agencies have developed lists of actions which are normally categorically excluded from environmental evaluation under their NEPA regulations.

Preparation of an EA is required for activities where the potential for significant environmental impact may exist or the activity cannot be excluded since there is no prior basis for exclusion. The EA provides data that aid in the determination of the necessity for an EIS. The EA results in either a Finding of No Significant Impact (FONSI), at which point the activity can be continued with no additional environmental impact analyses required, or a determination that an EIS is necessary for the proposed action. An EIS is required when the potential for significant impact to human health and the environment exists.

The first step in the EIS process begins when the applicant performs project design planning to scope the proposed action and then designs and implements baseline studies that encompass the environment potentially affected (see Section 4 of this report). Appropriate scoping of these studies is paramount to adequate baseline characterization. The project design and baseline studies provide information about the proposed action and are compiled in an Environmental Report (ER) for submittal to the regulatory authority (e.g., the NRC for a uranium mill in a non-agreement state). This will prompt the regulatory authority to publish a Notice of Intent (NOI) in the Federal Register to prepare an EIS. The NOI is a notice to the public that the EIS process will begin and outlines how the public can be involved in that process.

The regulatory authority then holds public scoping meetings in which interested members of the public, other federal and state agencies, tribal representatives and the regulatory authority meet. The regulatory authority presents the proposed action and works with the meeting attendees to determine the environmental issues related to the proposed action that should be included in the EIS.

After public scoping, a draft EIS will be prepared that includes a purpose and need statement, a description of the proposed action, reasonable alternatives to the proposed action including a no action alternative in which the project does not go forward, a description of the baseline environmental conditions that might be affected, potential impacts from the proposed action and possible mitigations to reduce or eliminate those actions, as well as a cost benefit analysis of the proposed action. The draft EIS is made available for a 30-day public review and comment. At the same time the EIS is submitted to the state for a 45-day to 60-day review period. Typically, for controversial projects, additional time is often requested and granted for extended review by other agencies and the public.

After the public comment and review period, responses to the comments are developed and a Final EIS is prepared. A NOI to release the Final EIS will be published in the Federal Register. The EIS process typically results in a Record of Decision (ROD), which outlines the decision, describes alternatives that were considered, and provides information on mitigating and monitoring potential environmental impacts. In the case of the NRC NEPA process, the NRC does not issue a ROD but rather issues the requested license to the applicant. The public has 30 days to appeal the issuance of the ROD and/or license.

2.2 State Environmental Protection Acts and Procedures

The United States CEQ has identified that 15 states (California, Connecticut, Georgia, Hawaii, Indiana, Maryland, Massachusetts, Minnesota, Montana, New York, North Carolina, South Dakota, Virginia, Washington, and Wisconsin), the District of Columbia, the Commonwealth of Puerto Rico, and Guam have environmental policy acts (SEPAs). These SEPAs are not required by federal law and are state specific. Some SEPAs create councils on environmental quality (SCEQs), which provide oversight and review environmental impact evaluations (EIEs). In this report, the term EIE will be used when generally referring to the evaluation of environmental impacts even though specific states may use different names such as Environmental Impact Analysis, Environmental Assessment, Environmental Impact Report, Environmental Effects Report or Environmental Impact Statement.

All 17 above-listed jurisdictions require review of potential environmental impacts for proposed state projects. Eleven (California, District of Columbia, Hawaii, Massachusetts, Minnesota, Montana, New York, Puerto Rico, South Dakota, Washington, and Wisconsin) of the 17 jurisdictions require review of state and local permitting actions regardless of land ownership (see MEPA Review reference in Section 7.0 of this report). Four states (Massachusetts, Montana, South Dakota, and Wisconsin) require review of state permitting actions but not local permitting actions.

In general, the SEPAs require governmental agsencies to review proposed actions to determine if a review under the SEPA is required for a proposed action. The governmental agencies must determine if the proposed action will result in significant impact or no significant impact to the environment. Most of the 17 jurisdictions require this environmental assessment process. This environmental assessment process is used to determine if a detailed EIE is required. If a governmental agency knows or believes that a significant impact to the environment will or could occur from a proposed action an EIE must be prepared. Several states do not have the intermediate environmental assessment step, only the detailed EIE.

Some states identify specific actions that are required to undergo the environmental review process. Other states may identify projects over a certain size or that exceed a certain cost as having to undergo an environmental review such as an EIE. Some states identify tiered categories of actions. For example, proposed actions in the lowest category would require an EA; while the highest category would require an EIS.

Some of the jurisdictions allow recovery from applicants of the costs incurred during the environmental review process of permitting actions. One state, Montana, allows recovery of only the costs incurred during data gathering up to $2,500 for proposed actions for which an EIS is required (see MEPA Review reference in Section 7.0 of this report).

3.0 REQUIRED COMPONENTS

A complete EIE process should require the applicant to provide information on the potential of significant environmental impacts associated with the proposed action. The information is typically provided in the form of an ER (see Section 2.1 of this report). Though these components are assessed in both EAs and EISs, the descriptions, evaluations, and analyses are more robust in an EIS than in an EA, because an EA is intended as a screening step rather than a comprehensive assessment. The detail provided in the ER and EIE should provide sufficient detail to allow reviewers to independently verify estimates of and potential impacts.

Table 1 outlines the required topics for the NEPA process, the existing Virginia statutes and regulations addressing environmental review requirements for State projects on state lands, and the NRC regulatory guidance for these topics in an EIS. It should be noted that other agencies (e.g., U.S. Bureau of Land Management) also have regulations and guidance for implementing NEPA that are similar but slightly different than NRC's due to different agency mandates. If the Commonwealth of Virginia chooses to allow uranium mining and/or to regulate uranium milling, it should consider including these NEPA components in their environmental review process (see Section 6 of this report).

3.1 Statement of Purpose & Need

The agency responsible for the EIE develops a statement of purpose and need for the proposed action. The "purpose" portion of this statement focuses on the agency's intent to provide the applicant with permission to develop the proposed action (i.e. approve a mine permit). The "need" portion of the statement addresses the agency's need to respond to the application and to fulfill its obligations under NEPA.

3.2 Description of Ownership and Proponent

The ownership of the project, including land and lease agreements, and the proponent of the proposed action must be identified. The inclusion of this information allows a complete understanding of the entities proposing the action. This typically includes identification of significant foreign interest or ownership in the controlling entities.

3.3 Description of Proposed Action

The description of the proposed action outlines in general terms the nature and type of activities to be conducted under the proposed action. The description outlines and quantifies the activities,

disturbances, and produced materials as well as the wastes managed and effluents that will occur under the proposed action.

3.3.1 Location and Setting

A description of the proposed site characteristics is required to adequately understand the potentially affected environment. This section should include coordinates of the project, a legal description, and a map of the area. Additionally, the location and setting should include a general description of the area in which the proposed action would occur including topography, elevation, adjacent property owners and general physical setting.

3.3.2 Principal Permits and Approvals Needed

In the majority of cases proposed actions require a variety of federal, state, and local permits, licenses and approvals. This section of the ER and associated EIE describe the permits and approvals already acquired or those still needed and the agencies responsible for regulating and approving. This aids in ensuring the full scope of the proposed action and the relevant stakeholders are identified.

3.3.3 Facilities

The temporary and permanent facilities and structures (roads, utilities, buildings etc.) to be built under the proposed action must be described in adequate detail to allow an understanding of the proposed action and the potential impacts associated with their construction, use and decommissioning. Since projects such as mines and mills typically evolve over time, these facilities are frequently addressed with respect to the phase of project life cycle.

3.3.4 Design

A description of the design of the proposed action is provided in sufficient detail that allows an independent assessment of the facility and potential impacts. Buildings and facilities should be included on figures and building and plant layouts included. The entire process including flow diagrams should be described in sufficient depth to allow an understanding of the quantities and constituents of the process streams, effluents and wastes managed and generated by the processes. Equipment to be used during the proposed action should be identified.

Specific attention is focused on effluent and waste management, since these materials have the highest potential for impact. This includes sufficient detail of the design of chemical, waste and product storage facilities to allow independent verification that the facilities will meet the appropriate standards for capacity, integrity, durability and quality control.

In addition, a detailed environmental monitoring program is presented for monitoring the potentially affected environment (i.e., air, ground water, surface water, soils, ecologic and human receptors). The level of precision, accuracy and quality control of the monitoring program must be detailed to allow independent verifications that it adequately monitors the full scope of the proposed activities and potential impacts. Typically, the baseline environmental monitoring systems are incorporated into the operation, reclamation and post-reclamation monitoring programs. Therefore, the baseline study can be very beneficial to all parties if designed with pre- and post-operational design criteria.

3.3.5 Construction

The anticipated types and quantities of equipment and personnel planned for project preparation and construction needs to be fully characterized to support assessment of potential socioeconomic and transportation impacts. In addition, the size, extent and locations of disturbance and quantities of material disturbed and handled must be described to support assessment of potential air quality impacts during construction. The effect the proposed construction may have on land use, land cover, water resources, and wildlife habitats must be described. Both adverse and beneficial effects of site preparation and construction on the site and the region should be included in the discussion. Resources utilized during construction should be identified as either a permanent (irreversible or irretrievable commitment) or temporary.

3.3.6 Operations

A generalized plan of operations of the proposed action including a schedule should be discussed. The operations should include the manner in which material is utilized as well as quantities and types of material generated, the chemical and physical characteristics of these materials, the consumption rates of materials and the handling and management of such materials. Additionally, any effluents and other wastes should be adequately characterized and waste minimization or disposal methods described.

A description of the procedures, equipment, technology, and processes used for operations of the proposed action need to be sufficient enough in detail to allow an understanding of the potential impact of these operations on the physical, biological and socio-economic environment. The water management, sediment control, and runoff quantities, mitigation, and containment measures should be adequately explained. The quantity, type and source of energy supplied to the facilities should be identified. Additionally, a discussion of the impacts of transportation on the environment, types (heavy vehicle vs. light vehicle) and rates (i.e., trips per day, miles traveled) of vehicular traffic associated with the proposed action such as material shipments to and from each facility and transportation associated with the work force required for the

proposed action will be required. Human health and public exposure rates need adequate characterization and monitoring and reporting requirements outlined.

3.3.7 Reclamation and Closure

The description of the proposed reclamation and closure should include methods to minimize lasting environmental effects of the proposed action to the extent allowable (i.e., waste isolation, stabilization, mitigation of surface impacts). Figures outlining the post disturbance topography, areas temporarily and permanently excluded from public use, land cover and any facilities or buildings anticipated to remain should be included. The size, extent and locations of disturbance and quantities of earth disturbed and handled during reclamation must be described to support assessment of potential air quality impacts during construction. The effect the proposed reclamation may have on land use, land cover, water resources, and wildlife habitats must also be addressed. Both adverse and beneficial effects of site reclamation on the site and the region should be included in the discussion. Resources utilized during reclamation should be identified as either a permanent (irreversible or irretrievable commitment) or temporary. The timing and methods employed during reclamation should also be discussed as well as long-term monitoring and planned end-state land use.

3.4 Analysis of Alternatives

Alternatives to the proposed action that reduce or mitigate potential impacts must be proposed and assessed. Alternatives are different activities, locations, or techniques that could be employed to meet the project need and achieve the purpose of the proposed action. A range of reasonable alternatives should be analyzed and compared. These alternatives could include for example, alternative locations for the proposed action, alternative methods of development, alternative ways to implement the project and alternative methods to mitigate or monitor potential environmental effects of the proposed action. The environmental effects of each reasonable alternative must be analyzed, though some alternatives may be dismissed from detailed analysis due to lack of feasibility or clear absence of benefit.

One alternative always considered is the no action alternative. This alternative outlines environmental effects from the proposed project not occurring and is represented by the existing baseline conditions. This is the baseline (no impact from the proposed action) against which the proposed action and reasonable alternatives are compared.

3.5 Description of Affected Environment

The applicant must describe in sufficient detail the environment that would be affected by the proposed action to allow comparison of the potential impacts to the environment with respect to

the existing baseline conditions. This environmental baseline should address the seasonal variability of the environmental media and topics considered. The establishment of biological, physical, and socioeconomic baseline conditions prior to the proposed action allows an assessment of potential future impacts and provides a basis for the monitoring of future changes in these conditions. Table 1 outlines the main components for description of the affected environment. In general, baseline conditions should be identified for land use, transportation, soils and geology, water resources, ecological resources, meteorology, climatology, air quality, noise levels, historic and cultural resources, visual and scenic resources, socioeconomics and social demographics (i.e., minority and/or disadvantaged populations) to support assessment of environmental justice issues.

When designing baseline studies, attention must be given to the level of precision and accuracy and the quality control of baseline studies. The appropriate level of detail is critical to ensure that the studies sufficiently address the full scope (area of potential impact) and range of media, constituents, and parameters to the appropriate levels (i.e., detection levels for constituents in water, air and soil). The appropriate level of precision and accuracy and the quality control of baseline studies will afford meaningful comparison to regulatory requirements and future conditions.

3.6 Assessment of Environmental Impacts, Mitigation of Potential Impacts and Monitoring

Once the proposed action and the baseline environmental conditions have been described, the proponent must adequately assess the potential impacts, positive and negative, from the proposed action on the potentially affected environment. These impacts include changes to air, water, soil concentrations, changes to human (public and occupational worker) exposures, disturbance to plant and animal species and habitats, as well as social and socioeconomic impacts. After estimating the impacts, the proponent must discuss best management practices and reasonable efforts to mitigate or lessen the potential impacts. The proponent must propose a systematic program of observation, measurement and reporting that will determine to what extent impacts are occurring to the public and the environment as a result of the proposed action. This is an integral part of the baseline monitoring and compliance monitoring programs developed during the design of the proposed action (see Section 3.3.3.1 Facilities\Design).

3.7 Cumulative Impacts

Cumulative impacts can be defined as the sum of the incremental impacts on the environment that could result from the proposed action, as well as other current projects in the area, past projects in the area and reasonably likely future actions. The components of the proposed action, when viewed individually, may not appear as likely to cause significant impacts. However,

when viewed together with other actions (i.e., other resource development and/or infrastructure projects in the area) may cause significant overall impacts to the physical, biological and socioeconomic environment. A proponent must adequately describe past, present and likely future actions of others in the area of the proposed action and the cumulative environmental effects that all these actions combined may have.

The impacts of any connected actions should also be considered. A connected action is an activity that would not likely occur without the proposed action but if the proposed action occurs, the additive impact, if any, of the connected action must be considered. One example of a connected action would be uranium mining associated with the uranium milling. From the NRC perspective, the uranium milling operation would be the proposed action, which it regulates, with a connected action of the associated uranium mine, which it does not regulate.

If a uranium mine and mill were proposed near or adjacent to each other and the mine or mill would not reasonably be operated without the other, then they would be considered connected actions. In the case where NRC has jurisdiction over uranium milling, the scope of the NRC EIS would include all the impacts from the connected action from the associated uranium mining. The state or Commonwealth in which the mining and milling was proposed has the option of being cooperating agency with the NRC, wherein they participate in the scoping and development of the EIS, and subsequently adopt all or parts of the NRC EIS in lieu of their own environmental review process. However, this in no way precludes the state of Commonwealth from conducting its own EIE. If a state or Commonwealth has assumed jurisdiction over uranium milling from the NRC, it too can develop a single EIE.

3.8 Cost-Benefit Analysis

A cost-benefit analysis is a systematic process for calculating and comparing benefits and potential costs of a proposed action. The cost-benefit analysis evaluates monetary impacts (i.e., local tax revenues, land value impacts, agricultural products prices, etc.) and non-monetary costs and benefits (i.e., aesthetic impacts, impacts to local housing, schools and municipal infrastructure). Fundamentally, the cost-benefit analysis allows assessment of whether the benefits outweigh the costs and the magnitude and areas of the differences. The cost-benefit analysis can reveal how to maximize benefits or minimize adverse socioeconomic impacts.

4.0 TIMING OF ENVIRONMENTAL STUDIES, IMPACT ANALYSES AND SUBMITTALS

The EIE process begins with a proposed action and includes document development and public input milestones before completion. Adequate planning and design should be conducted before the baseline studies are scoped to ensure that all aspects of the potentially affected environment are addressed.

4.1 Planning: Description of Proposed Action

In order to understand the scope of the impacts, the activities likely to occur under the proposed action must be understood. Adequate planning and initial design of the proposed facilities, including location, size, type and construction, operation and reclamation activities will allow the proper scoping of the baseline studies. Adequate planning of the proposed action will aid in ensuring the correct areas and media of the environment are included in baseline studies and analysis.

4.2 Scoping of baseline studies

The intent of the baseline studies is to ensure that the physical, biological, and socio-economic environments are sufficiently characterized to allow an understanding of the relative impacts of the proposed action. The baseline studies must encompass the full scope of potential impacts and all media must be identified, (e.g., air, ground water, surface water, soil, terrestrial ecology, aquatic ecology, etc.). The aerial extent of any particular study varies by EIE topic. For example, population distribution should be assessed for 50 miles around the site (NRC Reg Guide 3.8, Reg Guide 3.46), and groundwater and surface water location, nature and use would be assessed within and adjacent to the site (NRC Reg Guide 3.8, Reg Guide 3.46).

The baseline study must address all regulatory requirements for each type of media sampled. The analytical method and reporting limits must be sufficient to demonstrate compliance with the regulatory standards as well as appropriate accuracy, precision, and quality requirements.

4.3 Design of Sampling and Analysis Plans, QA/QC Plans, and Data Management Plans

Once the full scope of the proposed action is understood and the necessary baseline studies identified, a sampling and analysis plan (SAP), a quality assurance/quality control (QA/QC)

plan, and a data management plan (DMP) should be drafted. The development and use of these documents will ensure that all baseline studies meet the objectives for which the studies were intended.

The SAP for each sampled media should incorporate documentation of all analytes to be tested, the analytical methods used to test those analytes, the laboratory detection limits and quantification limits.

The QA/QC Plan should outline the purpose for which the data are being collected and procedures to validate and measure the accuracy, precision and representativeness of the data. A QA/QC Plan serves to aid in determining if the data can be utilized for the purpose intended. If the data do not meet necessary standards for accuracy, additional samples can be collected.

The DMP outlines procedures to track and manage all data collected. The DAP should include procedures for tracking the quality of the data to allow them to be utilized appropriately. Additionally, the DMP identifies the manner in which data will be tracked, categorized, and stored, ensuring their quality and integrity.

4.4 Baseline study implementation

All EIA/EIS processes require baseline analyses; however, some parameters and baseline studies are specific to uranium mining or to the NRC implementation of NEPA for licensed uranium recovery activities. For example, baseline gamma radiation, radon and radioparticulate studies are necessary to understand the natural radiation conditions in the area of a proposed action. In addition, the parameters Radium-226, Radium-228, Thorium-230, Polonium-210 and Lead-210 are radionuclides that NRC requires which are not typically assessed for other proposed actions but which are relevant for assessing some uranium related projects.

The frequency and duration of baseline sampling of each media type are variable. Studies for some media (i.e., radon, soils, and geology) are conducted either once or enough times to statistically calculate background values at the site as they are not likely to vary with season. However, other media (i.e., groundwater, surface water and wildlife studies) need to be conducted during different seasons to ensure that seasonal changes are identified. Flowing surface water (e.g., streams) is typically sampled more frequently (e.g., monthly) than non-flowing surface water bodies (i.e., lakes and ponds) to capture the variability that may exist in this media.

5.0 TIMING OF ENVIRONMENTAL IMPACT ANALYSES

Baseline studies are typically performed over a one year period to encompass seasonal variability in the environment. Most of these monitoring programs are continued throughout operational periods and provide the basis for compliance monitoring. Frequently, the proponent of an action compiles the data necessary for the EIE process into an ER. The ER documents are typically structured in a manner consistent with the EIE documents they are intended to support (e.g., EA, EIS) to facilitate agency review and checks for completeness. After receipt of this report the regulatory authority, determines if the document is complete. The regulatory authority either accepts the document as essentially complete or prepares requests for additional information (RAIs) that need to be provided before the application can be considered complete. Once all RAIs are addressed, the regulatory authority publishes a NOI to complete a Draft Environmental Impact Statement (DEIS).

The regulatory agency then begins a public scoping process to solicit input on the application and simultaneously continues the technical review of the application and ER. At least one public scoping meeting is usually held and public comments are typically accepted for at least 30 days after the publication of NOI. The lead agency conducting the EIE will often identify affected communities, key regulatory stakeholders or other agencies with EIE obligations related to the application and request their participation in scoping and developing the EIE document (i.e., EA or EIS) as cooperating agencies. Cooperating agencies contribute technical expertise and assist the lead agency in preparation of environmental analyses. If the cooperating agency has some overlapping jurisdiction over a portion or all of a proposed action, they can adopt the final decision document of the lead agency rather than being required to conduct a separate EIE. The regulatory authorities can opt out of cooperating agency status, if they do not have jurisdiction by law over the proposed action, but can review and comment during public scoping and draft document reviews.

The preparation of the DEIS frequently takes longer than nine months to complete, depending on the size and complexity of the proposed action. After publication of the DEIS, comment is received from the public and other governmental and tribal entities. The public comment period lasts at least 30 days. The regulatory authority summarizes the comments, prepares responses to these comments and modifies the document to address the issues identified in the comments.

This modified document is the Final EIS (FEIS). Preparation of the FEIS takes at least 30 days and can take many months, depending on the scope of the changes developed from the public comment and cooperating agency review process. Responses to comments generated during the public comment period are included in a separate appendix to present to the public the full range of comments and how the comments were addressed. A NOI for the FEIS is then published.

The public comment period on the FEIS lasts at least 30 days. Unless the comments received on the FEIS identify a significant flaw, which could require a revision to the FEIS and potentially to the application itself, comments are incorporated into the ROD or, in the case of the NRC, into the license they issue to the applicant. After publication of the ROD or issuance of the license, the public has 30 days to appeal the decision. If appealed, the permit or license typically remains active during the appeal process unless an issue of imminent public safety is identified. The regulatory authority will review the appeal, hold appropriate hearings and then either approve or deny the appeal. If the appeal is upheld, the issuing agency takes appropriate action, which may include suspension of the license or may include revision to the license to rectify any deficiencies. If the appeal is denied, the license remains in force as issued. The timeline for typical EIE, not including baseline studies, depends on the scope and complexity of the EIE. EAs can take less than one year or as long as two years while EIS can be completed in between one year and 2.5 years, depending on the complexity and potential significance of the proposed action.

6.0 POINTS FOR CONSIDERATION

Virginia has statutes, administered by DEQ, that require review of potential environmental impacts related to major Commonwealth projects. The Code of Virginia § 10.1-1188 requires that each State agency, board, authority, commission or branch of state government submit environmental impact reports on major projects that cost $500,000 or more. "Major state project" means the acquisition of an interest in land for any state facility construction, or the construction of any facility or expansion of an existing facility. This process is similar to the federal NEPA process in that environmental impacts from a proposed project are reviewed to ensure that the impacts to natural resources are adequately understood. Additionally, DEQ requests input from other agencies in the Commonwealth, regional planning district commissions and localities. However, Virginia's process does not require environmental review of uranium mining or milling projects on private land. Should Virginia decide to implement a SEPA or incorporate the commensurate requirements of a SEPA into specific statutes that apply to uranium mining and/or milling several points of consideration are proposed.

- The DEQ and DMME (Departments) should consider a framework using a tiered or categorization process for environmental reviews that would allow the state to have different levels of environmental review for different proposed actions. A tiered process from CATEX to EIS would benefit the state in that it would have varying levels of review for proposed actions. This categorization could identify certain actions that would be categorically excluded from the EIE process as well as actions that would automatically trigger an EIS, if they met appropriate criteria. Additionally, should Virginia identify actions for which the potential for significant environmental impact is unknown an EA could be prepared to determine if significant impacts could occur.
- The Departments should consider the creation of a Citizens Advisory Board or a CEQ, which would allow Virginia to have centralized authority for oversight, review, and public comment. A CEQ could provide comprehensive review and oversight of EIEs and ensure that public input is adequately included in the process. A centralized authority for EIEs would minimize confusion for the public by allowing the public to access the public scoping and comment process through one governmental authority.
- The Departments should consider incorporation of public involvement in the scoping process and in the environmental reviews to ensure an open and transparent process. Multiple opportunities for public comment in easily accessible locations can serve to improve the environmental review process. Public scoping meetings could be held in various locations to allow ready access for the public. Additionally, accepting public comment on proposed actions through an online portal or through e-mail, would ensure that the public can easily comment.
- The Departments should consider means to systematically catalog and document public input, comment review and development of comment responses. These comments and

responses can be compiled in a database. Database reports can be generated and included in an appendix to the final EIE. Since some comments may fall along similar lines, the Departments should consider specifically allowing grouping of such comments and associated responses. Grouping of these comments would require only one response which would allow the public to have a response to the comment without unnecessarily increasing the bulk of the final document.

- The Departments should consider establishing a structured administrative appeals process. This would afford the public an additional chance to challenge the approval of a proposed action.
- The Departments should consider requirements to make publically available, in electronic and hard copy format, all draft and final EIEs through a central authority. The availability of documents in a centralized location would ensure that the public can adequately review, comment, and locate documents generated as part of the environmental review process. If a CEQ is created, this authority could be tasked to ensure the creation of a publically accessible database and repository of all documents generated during the environmental review process. This would mitigate the concern that the public does not have ready access to EIEs.
- The Departments should consider adopting specific allowances in the environmental review process for adoption of all or parts of other Commonwealth agency environmental review determinations and/or federal NEPA determinations, as long as the process meets the Commonwealth's minimum requirements. This would allow the Commonwealth to avoid duplication of environmental review processes already addressed by other agencies.
- The Departments should consider establishing a mechanism for cost recovery for the EIE process from applicants. The costs associated not only with the environmental review of a proposed action but also for potential Commonwealth split analyses of selected baseline study samples, public scoping processes and document preparation are not insignificant. Frequently, governmental agencies do not have adequate staffing to collect data, conduct public scoping, respond to comments and prepare draft and final environmental review documents. These tasks can be contracted by the agencies to a third-party with such experience at costs lower than those to maintain comparable internal staffing.

7.0 REFERENCES

References included in the section are either directly including in the text and Table 1 or provided here to provide a thorough listing of appropriate regulations and guidance.

Environmental protection regulations for domestic licensing and related regulatory functions (10 CFR Part 51)
http://www.nrc.gov/reading-rm/doc-collections/cfr/part051/

Domestic licensing of source material (10 CFR Part 40)
http://www.nrc.gov/reading-rm/doc-collections/cfr/part040/

Rules of practice for domestic licensing proceedings and issuance of orders (10 CFR Part 2)
http://www.nrc.gov/reading-rm/doc-collections/cfr/part002/

Generic Environmental Impact Statement on Uranium Milling (NUREG-0706)
http://pbadupws.nrc.gov/docs/ML0327/ML032751661.html

Standard Review Plan for In Situ Leach Uranium Extraction License Applications (NUREG-1569)
http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1569/sr1569.pdf

Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act of 1978 **(**NUREG-1620)
http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1620/sr1620r1.pdf

Environmental Review Guidance for Licensing Actions associated with NMSS Programs (NUREG-1748)
http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1748/sr1748.pdf

Preparation of Environmental Reports For Uranium Mills (NRC RG-3.8)
http://www.nrc.gov/reading-rm/doc-collections/reg-guides/fuels-materials/rg/division-3/division-3-1.html

Standard Format and Content of License Applications, Including Environmental Reports, for In Situ Uranium Solution Mining (NRC RG-3.46)
http://pbadupws.nrc.gov/docs/ML0037/ML003739441.pdf

Improving the Montana Environmental Policy Act (MEPA) Process, Senate Joint Resolution No. 18: Report to the 57th Legislature of the State of Montana, Chapter 5 (MEPA Review)

http://leg.mt.gov/css/Publications/Environmental/2000mepa_report/mepa_tofc.asp

Whitehouse Council on Environmental Quality list of State Environmental Planning Information
http://ceq.hss.doe.gov/nepa/regs/states/states.cfm

TABLE

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Purpose and Need	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6 Part B Sec. 1	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 1; NRC RG-3.8, Ch.1; NUREG-1748 Ch. 5.1.1
Applicable Regulatory Requirements, Permits, and Required Conditions	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 3 and Appendix 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.1.4
Public Participation			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.1.3
Public Meetings and Information			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.1.3
Summary of Issues	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 3, Chapter 6 Parts A & B	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch.1
Alternatives	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6 Part B Sec. 4	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 8; NRC RG-3.8, Ch.10; NUREG-1748 Ch. 5.2
No Action Alternative	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6 Part B Sec. 4	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.3
Proposed Action Alternatives	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6 Part B Sec. 4	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Alterative Sites	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6 Part B Sec. 4	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Mine Locations and Hauling	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Ore Stockpile Pad	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Mill	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Waste Management Facilities	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Ancillary Facilities	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Alternative Designs on Proposed Site	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6 Part B Sec. 4	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Alternative Methods of Operation on Proposed Site	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6 Part B Sec. 4	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Schedule	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Workforce	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Traffic	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.2
Comparison of Predicted Environmental Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.6
Preliminary Recommendations			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.7
Closure	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 6; NRC RG-3.8, Ch.;

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Detailed Decommissioning Plan	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 6; NRC RG-3.8, Ch.9;
Uncontaminated Systems, Equipment, and Structures	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 6.3; NRC RG-3.8, Ch.9;
Contaminated Systems, Equipment, and Structures	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 6.3; NRC RG-3.8, Ch.9;
Sequence of Removal of Systems, Equipment, and Structures	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 6.3; NRC RG-3.8, Ch.9;
Soil Remediation	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 6.2; NRC RG-3.8, Ch.9;
Tailings Cells	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 6; NRC RG-3.8, Ch.9;
Surface Restoration	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.6.2; NRC RG-3.8, Ch.9;
Alternatives Considered but Not Analyzed in Detail	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.4
Site Location Alternatives	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.4
Technical Alternatives	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.2.4
Conventional Alkaline-Leach Milling	-		-	
Heap Leaching	-		-	
In-Situ Leaching	-		-	

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Affected Environment	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3
Land Use	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.1; NRC RG-3.8, Ch.2.1; NUREG-1748 Ch. 5.3.1
Site Location	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.1; NRC RG-3.8, Ch.2.1; NUREG-1748 Ch. 5.3.1
Regional Land Use Patterns	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.1; NRC RG-3.8, Ch.2.1; NUREG-1748 Ch. 5.3.1
Local Land Use Patterns	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.1; NRC RG-3.8, Ch.2.1; NUREG-1748 Ch. 5.3.1
Surrounding Land Uses	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.2; NRC RG-3.8, Ch.2.2; NUREG-1748 Ch. 5.3.1
Agriculture	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3; Appendix 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch.2.2; NUREG-1748 Ch. 5.3.1
Mineral Resources and Mining	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch.2.2; NUREG-1748 Ch. 5.3.1
Recreation	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch.2.2; NUREG-1748 Ch. 5.3.1
Land Use Planning Issues	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch.2.2; NUREG-1748 Ch. 5.3.1
Transportation	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch.	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.2

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
		6. Part B Sec. 2		
Transportation Routes	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.2
Roadway System in Vicinity of the Site	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.2
Traffic Patterns	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.2
Traffic Crashes	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch. 7.2; NRC RG-3.46, Ch. 7.5.2; NUREG-1748 Ch. 5.3.2
Geology and Soils	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.6; NRC RG-3.8, Ch. 2.5; NUREG-1748 Ch. 5.3.3
Geology	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.6; NRC RG-3.46, Ch.2.6; NRC RG-3.8, Ch. 2.5; NUREG-1748 Ch. 5.3.3
Regional Geology	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch. 2.5; NUREG-1748 Ch. 5.3.3
Site Geology	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch. 2.5; NUREG-1748 Ch. 5.3.3
Seismicity	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.6; NRC RG-3.8, Ch. 2.6; NUREG-1748 Ch. 5.3.3
Geologic Hazards	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch. 2.5; NUREG-1748 Ch. 5.3.3

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Soils	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch. 2.5; NUREG-1748 Ch. 5.3.3
USDA Web Soils Data	-			
Field Observations	-			
Hydric Soil Field Investigations	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.3
Water Resources	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.7; NRC RG-3.8, Ch. 2.7.2; NUREG-1748 Ch. 5.3.4
Surface Hydrology	-	Code says: "Locally-developed watershed management plans"	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.7.2; NRC RG-3.8, Ch. 2.7.2; NUREG-1748 Ch. 5.3.4
Surface Waterbodies	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.4
Surface Water Quality	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.4
Groundwater	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.7.1; NRC RG-3.8, Ch. 2.7.1; NUREG-1748 Ch. 5.3.4
Regional Hydrogeology	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.4
Site Groundwater	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.4
Existing Wells and Springs	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.4

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Groundwater Quality	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.4
Water Usage	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 2	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.4
Ecological Resources	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.8; NRC RG-3.8, Ch. 2.9; NUREG-1748 Ch. 5.3.5
Vegetation	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
Baseline Data	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
On-Site Survey Methodology	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
Vegetation Cover Types	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
Wetlands	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
Invasive, Non-Native Species	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
Species of Special Status	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
Federally Listed Threatened and Endangered Species	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Candidate Species	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
Wildlife	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
Terrestrial Wildlife Species	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
Aquatic Species	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.5
Meteorology, Climatology, and Air Quality	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.5; NRC RG-3.8, Ch. 2.8; NUREG-1748 Ch. 5.3.6
Meteorology	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.5; NRC RG-3.8, Ch. 2.8; NUREG-1748 Ch. 5.3.6
Climatology	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.6
Regional Climate Data Sources	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.6
Long Term Statistics and 30-year Normal Values	-			
Air Quality	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.6
Fugitive Dust	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	-	

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Burning Activities	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	-	
Nonattainment area for criteria pollutants	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	-	
State Designated Volatile Organic Compound and/or Nitrogen Oxides Emissions Control Area	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	-	
10 km from Class 1 Pristine Area	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	-	
Noise	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.7
Historic and Cultural Resources	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 2.4; NRC RG-3.8, Ch. 2.4; NUREG-1748 Ch. 5.3.8
Visual/Scenic Resources	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.9
Socioeconomics	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.7.6; NRC RG-3.8, Ch. 8; NUREG-1748 Ch. 5.3.10
Regional Population	-		10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 2.3; NRC RG-3.8, Ch. 2.4; NUREG-1748 Ch. 5.3.10
Age Distribution of the Regional Population	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Minority and Low Income Populations within the Regional Population	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Local Population	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Resident Tenure	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Transient Populations	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Surrounding Population	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Economic Trends	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Income	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Employment	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Housing	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Permanent Housing	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Short-term Housing	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Community Services	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Schools	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Medical Services	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Public Safety	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Water and Wastewater Services	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Fiscal Conditions	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
County Revenues	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Property Taxes	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Town Revenues	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Severance Taxes	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.10
Public and Occupational Health	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.11
Background Exposure to Ionizing Radiation	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.11

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Occupational Injuries	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.11
Summary of Health Effects Studies	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.11
Baseline Radiological Status	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.11
Background Air Quality Radionuclides	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.11
Background Radionuclides in Animal Tissue	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.3.11
Environmental Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.7.0; NRC RG-3.8, Ch. 4&5, NUREG-1748 Ch. 5.4
Land Use	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.7.1; NRC RG-3.8, Ch. 4.1; NUREG-1748 Ch. 5.4.1
Long-Term Restrictions			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.1
Short-Term Restrictions			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.1
Modifications of Land Classification			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.1
Mitigation Measures			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.1

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Environmental Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.1
Transportation Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.2
Transportation Mode, Routs and Risk Estimates			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.2
Mitigation Measures			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.2
Environmental Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.2
General Impacts	Va § 10.1-1188		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.2
Construction, Operations, and Closure Impacts	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.2
Protective/Mitigation Measures	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.2
Geology and Soils	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 2.6; NRC RG-3.8, Ch. 2.5; NUREG-1748 Ch. 5.4.3
Soil Comparison			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.3
Soil Erosion			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.3

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Subsidence			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.3
Landslides			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.3
Disruption of natural drainage patterns			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.3
Environmental Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch. 2.5; NUREG-1748 Ch. 5.4.3
General Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch. 2.5; NUREG-1748 Ch. 5.4.3
Construction, Operations, and Closure Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.3
Protective/Mitigation Measures	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.3
Water Resources	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.7; NRC RG-3.8, Ch. 2.7; NUREG-1748 Ch. 5.4.4
Water Quality			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.2.7; NRC RG-3.8, Ch. 2.7; NUREG-1748 Ch. 5.4.4
Groundwater			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 2.7.1; NRC RG-3.8, Ch. 2.7.1; NUREG-1748 Ch. 5.4.4
Surface Water			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 2.7.2; NRC RG-3.8, Ch. 2.7.2; NUREG-1748 Ch. 5.4.4

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Changes to the Hydrologic System			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Reduced Water Availability Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Direct, Indirect and Cumulative Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Short Term Affects			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Long Term Affects			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Dose Assessment of Radiological Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Environmental Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
General Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Tidal and Non-Tidal Wetland	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Streams, Rivers, Lakes	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
100-year Flood Plain	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Groundwater Characteristics	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Construction, Operations, and Closure Impacts	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Protective/Mitigation Measures	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.4
Ecological Resources	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch. 2.8; NRC RG-3.8, Ch. 2.9; NUREG-1748 Ch. 5.4.5
Dewatering Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Surface Run-Off Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Dredge and Spoils Placement Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Loss of Habitat			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Loss of Species			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Secondary Impacts (construction noise)			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Environmental Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
General Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Significant Habitat	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Anadromous Fish Use Areas	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3		
Trout Streams	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3		
Colonial Waterbird Nesting Colonies	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3		
Chesapeake Bay Prevention Areas	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3		
Virginia Coastal Resources Management Area (Tidewater)	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3		
Vegetation	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3		NRC RG-3.8, Ch. 2.9; NUREG-1748 Ch. 5.4.5
Baseline Data				NUREG-1748 Ch. 5.4.5
On-Site Survey Methodology				NUREG-1748 Ch. 5.4.5
Vegetation Cover Types				NUREG-1748 Ch. 5.4.5
Wetlands	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3		NUREG-1748 Ch. 5.4.5

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Submerged Aquatic Vegetation	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3		
Invasive, Non-Native Species	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3		
Unique or Important Terrestrial Veg.	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Species of Special Status	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3 http://bewildvirginia.org;	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Federally Listed Threatened and Endangered Species	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Candidate Species	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
BLM Sensitive Species and State of Virginia Species of Special Concern	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	
Wildlife	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Terrestrial Wildlife Species	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Aquatic Species	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RGNUREG-1748 Ch. 5.4.5

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Construction, Operations, and Closure Impacts	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Protective/Mitigation Measures	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.5
Air Quality	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Environmental Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
General Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Direct, Indirect and Cumulative Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Short Term Affects			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Long Term Affects			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Comparison of Standards to Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Air Permits			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Atmospheric Transport Models			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Dose Assessment of Radiological Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Visibility Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Construction, Operations, and Closure Impacts	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Protective/Mitigation Measures	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.6
Noise	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.7
Environmental Impacts	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.7
General Impacts	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.7
Construction, Operations, and Closure Impacts	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.7
Sources of Noise			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.7
Cumulative Effects			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.7
Protective/Mitigation Measures	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.7

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Historic and Cultural Resources	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3, Appendix 6	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.8
Environmental Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.8
General Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.8
Construction, Operations, and Closure Impacts	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.8
Protective/Mitigation Measures	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.8
Visual/Scenic Resources	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.9
Environmental Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.9
General Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.9
Construction, Operations, and Closure Impacts	-		10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.9
Protective/Mitigation Measures	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.9
Hazardous Materials	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch.	10 CFR 51, Sub. A § 51.10, § 51.20	

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
		6. Part B Sec. 3		
Socioeconomic Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.10
Impacts to Population Characteristics			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.10
Impacts to Economic Trends			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.10
Impacts to Housing			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.10
Impacts to Area's Tax Structure			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.10
Transient Populations			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.10
Permanent Populations			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.10
Environmental Justice			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.11
Adverse Health Impacts to Minority and Low-income Populations			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.11
Mitigation Measures			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.11

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Pathways of Impact			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.11
Public and Occupational Health			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.12
Nonradiological Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.12.1
Radiological Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.12.2
Pathway Assessment			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.12.2.1
Public and Occupational Health Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.12.2.2
Waste Management Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.13
Sources, Types, Quantities of Solid, Hazardous and Radioactive Wastes			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.13
Proposed Waste Management Systems			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.13
Disposal Plans			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.13
Waste Minimization Plan			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.4.13

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Mitigation	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.5
Commonwealth Pollution Prevention Plan Va §10.1-1425.11.	§10.1-1425.11.	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5		
Pollution Prevention	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.5
Construction	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.5
Equipment	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.5
Recycling Efforts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.5
Stormwater Management	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.5
Pest and Weed Control	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.5
Water Conservation	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.5
Energy Conservation	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.5
Monitoring Programs			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.5.7; NRC RG-3.8, Ch. 6.2; NUREG-1748 Ch. 5.6

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Radiological Monitoring			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.5.7; NRC RG-3.8, Ch.6.2.1; NUREG-1748 Ch. 5.6.1
Physiochemical Monitoring			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.5.7.1; NRC RG-3.8, Ch.6.2.2; NUREG-1748 Ch. 5.6.2
Baseline Monitoring			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch.6.2.2; NUREG-1748 Ch. 5.6.2
Operational Monitoring			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.5.7.2; NRC RG-3.8, Ch.6.2.2; NUREG-1748 Ch. 5.6.2
Ecological Monitoring			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.5.7.5; NRC RG-3.8, Ch.6.2.4; NUREG-1748 Ch. 5.6.3
Baseline Monitoring			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch.6.2.4; NUREG-1748 Ch. 5.6.3
Operational Monitoring			10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch.6.2.4; NUREG-1748 Ch. 5.6.3
Irreversible Environmental Changes	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 6		
Protective/Mitigation Measures	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5		
Monitoring	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 6		
Cost Benefit Analysis	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.9; NRC RG-3.8, Ch. 8.0; NUREG-1748 Ch. 5.7

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Economic and Social Effects	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.9; NRC RG-3.8, Ch. 8.0;NUREG-1748 Ch. 5.7
Benefits	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.7.6; NRC RG-3.8, Ch. 8.1; NUREG-1748 Ch. 5.7
Costs	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.46, Ch.9; NRC RG-3.8, Ch. 8.2; NUREG-1748 Ch. 5.7
Cost Benefit Analysis	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 3	10 CFR 51, Sub. A § 51.10, § 51.20	NRC RG-3.8, Ch. 9; NUREG-1748 Ch. 5.7
Summary of Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 6	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.8
Irreversible Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 6	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.8
Unavoidable Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.8
Mitigation Procedures	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 5	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.8
Remaining Impacts			10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.8
Cumulative Impacts	Va § 10.1-1188	Procedure for EIR of Major State Facilities Ch. 6. Part B Sec. 6	10 CFR 51, Sub. A § 51.10, § 51.20	NUREG-1748 Ch. 5.8
Past Actions	-			
Present and Reasonably Foreseeable Actions	-			

Table 1 Components of EIA/EIS with Virginia and NRC Guidance References

	Virginia DEQ		NRC	
Topic	**Statute/ Regulation**	**Guidance**	**Statute/ Regulation**	**Guidance**
Uranium Mining Projects	-			
Uranium Exploration Projects	-			
Oil and Gas Development Projects	-			
Other Projects	-			
Potential Cumulative Impacts Associated with Increased Uranium Mining	-			

FIGURE

Figure 1 NEPA Process Flow Chart