FERC Regulatory Document	Regulation	Description	Are there more stringent requirements or practices?		Description of more stringent requirements/practices	Reference in SWPPP	Where Requirement/Practice Applies	
			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Upland Erosion Control, Revegetation, and Maintenance Plan								
FERC Plan	II.A.1: Environmental Inspection	At least one Environmental Inspector is required for each construction spread during construction and restoration (as defined by section V). The number and experience of Environmental Inspectors assigned to each construction spread shall be appropriate for the length of the construction spread and the number/significance of resources affected.	no	NA	NA	7.1		x
FERC Plan	II.A.2: Environmental Inspection	Environmental Inspectors shall have peer status with all other activity inspectors.	no	NA	NA	7.1		x
FERC Plan	II.A.3: Environmental Inspection	Environmental Inspectors shall have the authority to stop activities that violate the environmental conditions of the FERC's Orders, stipulations of other environmental permits or approvals, or landowner easement agreements; and to order appropriate corrective action.	no	NA	NA	7.1		x
FERC Plan	II.B.1: Responsibilities of Environmental Inspectors	Inspecting construction activities for compliance with the requirements of this Plan, the Procedures, the environmental conditions of the FERC's Orders, the mitigation measures proposed by the project sponsor (as approved and/or modified by the Order), other environmental permits and approvals, and environmental requirements in landowner easement agreements.	yes	9 VAC 25-850-30 (Erosion and Sediment Control and Stormwater Management Certification Regulations)	Inspections of land-disturbing activities shall be conducted by a certified inspector in accordance with §§62.1-44.15:51 E and 62.1-44.15:53 of the Virginia Erosion and Sediment Control Act. A "certified inspector" means an employee or agent of a VESCP authority (or entity with standards and specifications such as DTI) who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one year after enrollment.	7.1		x
FERC Plan	II.B.2: Responsibilities of Environmental Inspectors	Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;	yes	9 VAC 25-850-30 (Erosion and Sediment Control and Stormwater Management Certification Regulations)	Inspections of land-disturbing activities shall be conducted by a certified inspector in accordance with §§62.1-44.15:51 E and 62.1-44.15:53 of the Virginia Erosion and Sediment Control Act. A "certified inspector" means an employee or agent of a VESCP authority (or entity with standards and specifications such as DTI) who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one year after enrollment.	7.1		x
FERC Plan	II.B.3: Responsibilities of Environmental Inspectors	Verifying that the limits of authorized construction work areas and locations of access roads are visibly marked before clearing, and maintained throughout construction;	yes	9 VAC 25-850-30 (Erosion and Sediment Control and Stormwater Management Certification Regulations)	Inspections of land-disturbing activities shall be conducted by a certified inspector in accordance with §§62.1-44.15:51 E and 62.1-44.15:53 of the Virginia Erosion and Sediment Control Act. A "certified inspector" means an employee or agent of a VESCP authority (or entity with standards and specifications such as DTI) who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one year after enrollment.	7.1		x
FERC Plan	II.B.4: Responsibilities of Environmental Inspectors	Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;	yes	9 VAC 25-850-30 (Erosion and Sediment Control and Stormwater Management Certification Regulations)	Inspections of land-disturbing activities shall be conducted by a certified inspector in accordance with §§62.1-44.15:51 E and 62.1-44.15:53 of the Virginia Erosion and Sediment Control Act. A "certified inspector" means an employee or agent of a VESCP authority (or entity with standards and specifications such as DTI) who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one year after enrollment.	7.1		x
FERC Plan	II.B.5: Responsibilities of Environmental Inspectors	Identifying erosion/sediment control and soil stabilization needs in all areas	yes	9 VAC 25-850-30 (Erosion and Sediment Control and Stormwater Management Certification Regulations)	Inspections of land-disturbing activities shall be conducted by a certified inspector in accordance with §§62.1-44.15:51 E and 62.1-44.15:53 of the Virginia Erosion and Sediment Control Act. A "certified inspector" means an employee or agent of a VESCP authority (or entity with standards and specifications such as DTI) who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one year after enrollment.	3.3		x
FERC Plan	II.B.6: Responsibilities of Environmental Inspectors	Ensuring that the design of slope breakers will not cause erosion or direct water into sensitive environmental resource areas, including cultural resource sites, wetlands, waterbodies, and sensitive species habitats;	yes	9 VAC 25-850-30 (Erosion and Sediment Control and Stormwater Management Certification Regulations)	Inspections of land-disturbing activities shall be conducted by a certified inspector in accordance with §§62.1-44.15:51 E and 62.1-44.15:53 of the Virginia Erosion and Sediment Control Act. A "certified inspector" means an employee or agent of a VESCP authority (or entity with standards and specifications such as DTI) who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one year after enrollment.	7.1		x
FERC Plan	II.B.7: Responsibilities of Environmental Inspectors	Verifying that dewatering activities are properly monitored and do not result in the deposition of sand, silt, and/or sediment into sensitive environmental resource areas, including wetlands, waterbodies, cultural resource sites, and sensitive species habitats; stopping dewatering activities if such deposition is occurring and ensuring the design of the discharge is changed to prevent reoccurrence; and verifying that dewatering structures are removed after completion of dewatering activities;	yes	9 VAC 25-850-30 (Erosion and Sediment Control and Stormwater Management Certification Regulations)	Inspections of land-disturbing activities shall be conducted by a certified inspector in accordance with §§62.1-44.15:51 E and 62.1-44.15:53 of the Virginia Erosion and Sediment Control Act. A "certified inspector" means an employee or agent of a VESCP authority (or entity with standards and specifications such as DTI) who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one year after enrollment.	3.1.8.1 3.1.8.2		x
FERC Plan	II.B.8: Responsibilities of Environmental Inspectors	Ensuring that subsoil and topsoil are tested in agricultural and residential areas to measure compaction and determine the need for corrective action	no	NA	NA	3.1.13.3		x
FERC Plan	II.B.9: Responsibilities of Environmental Inspectors	Advising the Chief Construction Inspector when environmental conditions (such as wet weather or frozen soils) make it advisable to restrict or delay construction activities to avoid topsoil mixing or excessive compaction;	no	NA	NA	7.1		x

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FERC Plan	II.B.10: Responsibilities of Environmental Inspectors	Ensuring restoration of contours and topsoil;	yes	9 VAC 25-850-30 (Erosion and Sediment Control and Stormwater Management Certification Regulations)	Inspections of land-disturbing activities shall be conducted by a certified inspector in accordance with §§62.1-44.15:51 E and 62.1-44.15:53 of the Virginia Erosion and Sediment Control Act. A "certified inspector" means an employee or agent of a VESCP authority (or entity with standards and specifications such as DTI) who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one year after enrollment.	7.1		x
FERC Plan	II.B.11: Resposibilities of Environmental Inspectors	Verifying that the soils imported for agricultural or residential use are certified as free of noxious weeds and soil pests, unless otherwise approved by the landowner;	no	NA	NA	7.1		x
FERC Plan	II.B.12: Responsibilities of Environmental Inspectors	Ensuring that erosion control devices are properly installed to prevent sediment flow into sensitive environmental resource areas (e.g., wetlands, waterbodies, cultural resource sites, and sensitive species habitats) and onto roads, and determining the need for additional erosion control devices;	yes	9 VAC 25-850-30 (Erosion and Sediment Control and Stormwater Management Certification Regulations)	Inspections of land-disturbing activities shall be conducted by a certified inspector in accordance with §§62.1-44.15:51 E and 62.1-44.15:53 of the Virginia Erosion and Sediment Control Act. A "certified inspector" means an employee or agent of a VESCP authority (or entity with standards and specifications such as DTI) who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one year after enrollment.	7.1		x
FERC Plan	II.B.13: Responsibilities of Environmental Inspectors	Inspecting and ensuring the maintenance of temporary erosion control measures at least: a. on a daily basis in areas of active construction or equipment operation; b. on a weekly basis in areas with no construction or equipment operation; and c. within 24 hours of each 0.5 inch of rainfall;	yes	9 VAC 25-850-30 (Erosion and Sediment Control and Stormwater Management Certification Regulations)	Inspections of land-disturbing activities shall be conducted by a certified inspector in accordance with §§62.1-44.15:51 E and 62.1-44.15:53 of the Virginia Erosion and Sediment Control Act. A "certified inspector" means an employee or agent of a VESCP authority (or entity with standards and specifications such as DTI) who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one year after enrollment. **Note that FERC-related inspections conducted at the frequencies listed in FERC Plan II.B.13 do not require a Virginia-certified inspector.**	8.1.1		x
FERC Plan	II.B.14: Responsibilities of Environmental Inspectors	Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification, or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts;	no	NA	NA	7.1		x
FERC Plan	II.B.15: Responsibilities of Environmental Inspectors	Keeping records of compliance with the environmental conditions of the FERC's Orders, and the mitigation measures proposed by the project sponsor in the application submitted to the FERC, and other federal or state environmental permits during active construction and restoration;	no	NA	NA	7.1		x
FERC Plan	II.B.16: Responsibilities of Environmental Inspectors	Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase; and	no	NA	NA	7.1		x
FERC Plan	II.B.17: Responsibilities of Environmental Inspectors	Verifying that locations for any disposal of excess construction materials for beneficial reuse comply with section III.E.	no	NA	NA	7.1		x
FERC Plan	III.A.1: Construction Work Areas	Identify all construction work areas (e.g., construction right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads) that would be needed for safe construction. The project sponsor must ensure that appropriate cultural resources and biological surveys are conducted, as determined necessary by the appropriate federal and state agencies.	no	NA	NA	2.11 2.18 2.19.5 2.19.9		x
FERC Plan	III.A.2: Construction Work Areas	Project sponsors are encouraged to consider expanding any required cultural resources and endangered species surveys in anticipation of the need for activities outside of authorized work areas.	no	NA	NA	N/A		x
FERC Plan	III.A.3: Construction Work Areas	Plan construction sequencing to limit the amount and duration of open trench sections, as necessary, to prevent excessive erosion or sediment flow into sensitive environmental resource areas.	yes	VA Minimum Standard, MS-16a	Virginia Minimum Standard MS-16a requires that no more than 500 linear feet of trench may be opened at one time. In accordance with Virginia ESC Regulation for Variances (9 VAC 25-840-50.1), a variance to allow more than 500 linear feet of trench to be open at any one time is requested to become part of the approved Erosion and Sediment Control Plan (See General Notes on Construction Alignment Sheets)	Appendix A - Construction Alignment Sheets: General Notes		x
FERC Plan	III.B.1: Drain Tile and Irrigation Systems	Attempt to locate existing drain tiles and irrigation systems.	no	NA	NA	3.5.2		x
FERC Plan	III.B.2: Drain Tile and Irrigation Systems	Contact landowners and local soil conservation authorities to determine the locations of future drain tiles that are likely to be installed within 3 years of the authorized construction.	no	NA	NA	3.5.2		x
FERC Plan	III.B.3: Drain Tile and Irrigation Systems	Develop procedures for constructing through drain-tiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction.	no	NA	NA	3.5.2		x

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FERC Plan	III.B.4: Drain Tile and Irrigation Systems	Engage qualified drain tile specialists, as needed to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialists from the project area, if available.	no	NA	NA	3.1		x
FERC Plan	III.C: Grazing Deferment	Develop grazing deferment plans with willing landowners, grazing permittees, and land management agencies to minimize grazing disturbance of revegetation efforts.	no	NA	NA	3.5.2		x
FERC Plan	III.D: Road Crossings and Access Points	Plan for safe and accessible conditions at all roadway crossings and access points during construction and restoration.	no	NA	NA	3.1		x
FERC Plan	III.E: Disposal Planning	Determine methods and locations for the regular collection, containment, and disposal of excess construction materials and debris (e.g., timber, slash, mats, garbage, drill cuttings and fluids, excess rock) throughout the construction process. Disposal of materials for beneficial reuse must not result in adverse environmental impact and is subject to compliance with all applicable survey, landowner or land management agency approval, and permit requirements.	no	NA	NA	6.4 6.6 7.1		x
FERC Plan	III.F.1: Agency Coordination	Obtain written recommendations from the local soil conservation authorities or land management agencies regarding permanent erosion control and revegetation specifications.	no	NA	NA	3.1.13.4 Appendix R- Restoration & Rehabilitation Plan		x
FERC Plan	III.F.2: Agency Coordination	Develop specific procedures in coordination with the appropriate agencies to prevent the introduction or spread of invasive species, noxious weeds, and soil pests resulting from construction and restoration activities.	no	NA	NA	6.4		x
FERC Plan	III.F.3: Agency Coordination	Develop specific procedures in coordination with the appropriate agencies and landowners, as necessary, to allow for livestock and wildlife movement and protection during construction.	no	NA	NA	3.5.2		x
FERC Plan	III.F.4: Agency Coordination	Develop specific blasting procedures in coordination with the appropriate agencies that address pre- and post-blast inspections; advanced public notification; and mitigation measures for building foundations, groundwater wells, and springs. Use appropriate methods (e.g., blasting mats) to prevent damage to nearby structures and to prevent debris from entering sensitive environmental resource areas.	no	NA	NA	3.1.6.3		x
FERC Plan	III.G: Spill Prevention and Response Procedures	The project sponsor shall develop project-specific Spill Prevention and Response Procedures, as specified in section IV of the staff's Procedures. A copy must be filed with the Secretary of the FERC (Secretary) prior to construction and made available in the field on each construction spread. The filing requirement does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.	no	NA	NA	6.0		x
FERC Plan	III.H: Residential Construction	For all properties with residences located within 50 feet of construction work areas, project sponsors shall: avoid removal of mature trees and landscaping within the construction work area unless necessary for safe operation of construction equipment, or as specified in landowner agreements; fence the edge of the construction work area for a distance of 100 feet on either side of the residence; and restore all lawn areas and landscaping immediately following clean up operations, or as specified in landowner agreements. If seasonal or other weather conditions prevent compliance with these time frames, maintain and monitor temporary erosion controls (sediment barriers and mulch) until conditions allow completion of restoration.	no	NA	NA	3.5.4		x

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			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Plan	III.I: Winter Construction Plans	If construction is planned to occur during winter weather conditions, project sponsors shall develop and file a project-specific winter construction plan with the FERC application. This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations. The plan shall address: 1. winter construction procedures (e.g., snow handling and removal, access road construction and maintenance, soil handling under saturated or frozen conditions, topsoil stripping); 2. stabilization and monitoring procedures if ground conditions will delay restoration until the following spring (e.g., mulching and erosion controls, inspection and reporting, stormwater control during spring thaw conditions); and 3. final restoration procedures (e.g., subsidence and compaction repair, topsoil replacement, seeding).	no	NA	NA	3.5.5		x
FERC Plan	IV.A.1: Approved Areas of Disturbance	Project-related ground disturbance shall be limited to the construction right-of-way, extra work space areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the FERC's Orders. Any project-related ground disturbing activities outside these areas will require prior Director approval. This requirement does not apply to activities needed to comply with the Plan and Procedures (i.e., slope breakers, energy-dissipating devices, dewatering structures, drain tile system repairs) or minor field realignments and workspace shifts per landowner needs and requirements that do not affect other landowners or sensitive environmental resource areas. All construction or restoration activities outside of authorized areas are subject to all applicable survey and permit requirements, and landowner easement agreements.	no	NA	NA	2.12 2.14 2.15		x
FERC Plan	IV.A.2: Approved Areas of Disturbance	The construction right-of-way width for a project shall not exceed 75 feet or that described in the FERC application unless otherwise modified by a FERC Order. However, in limited, non-wetland areas, this construction right-of-way width may be expanded by up to 25 feet without Director approval to accommodate full construction right-of-way topsoil segregation and to ensure safe construction where topographic conditions (e.g., side-slopes) or soil limitations require it. Twenty-five feet of extra construction right-of-way width may also be used in limited, non-wetland or non-forested areas for truck turn-arounds where no reasonable alternative access exists. Project use of these additional limited areas is subject to landowner or land management agency approval and compliance with all applicable survey and permit requirements. When additional areas are used, each one shall be identified and the need explained in the weekly or biweekly construction reports to the FERC, if required. The following material shall be included in the reports: a. the location of each additional area by station number and reference to previously filed alignment sheets, or updated alignment sheets showing the additional areas; b. identification of the filing at FERC containing evidence that the additional areas were previously surveyed; and c. a statement that landowner approval has been obtained and is available in project files.	no	NA	NA	2.12.1		x
FERC Plan	IV.B.1: Topsoil Segregation	Unless the landowner or land management agency specifically approves otherwise, prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method) in: a. cultivated or rotated croplands, and managed pastures; b. residential areas; c. hayfields; and d. other areas at the landowner's or land managing agency's request.	no	NA	NA **Note: Refer to the Construction, Operations, and Maintenance Plan (COM Plan) for practices to be implemented within the George Washington National Forest at the request of the USFS.**	3.1.6.1 3.6	x	x
FERC Plan	IV.B.2: Topsoil Segregation	In residential areas, importation of topsoil is an acceptable alternative to topsoil segregation.	no	NA	NA	3.1.6.1		x
FERC Plan	IV.B.3: Topsoil Segregation	Where topsoil segregation is required, the project sponsor must: a. segregate at least 12 inches of topsoil in deep soils (more than 12 inches of topsoil); and b. make every effort to segregate the entire topsoil layer in soils with less than 12 inches of topsoil.	no	NA	NA **Note: Refer to the Construction, Operations, and Maintenance Plan (COM Plan) for practices to be implemented within the George Washington National Forest at the request of the USFS.**	3.1.6.1 3.6	x	x
FERC Plan	IV.B.4: Topsoil Segregation	Maintain separation of salvaged topsoil and subsoil throughout all construction activities.	no	NA	NA **Note: Refer to the Construction, Operations, and Maintenance Plan (COM Plan) for practices to be implemented within the George Washington National Forest at the request of the USFS.**	3.1.6.1; 3.6	x	x
FERC Plan	IV.B.5: Topsoil Segregation	Segregated topsoil may not be used for padding the pipe, constructing temporary slope breakers or trench plugs, improving or maintaining roads, or as a fill material.	no	NA	NA	3.1.6.1		x

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FERC Plan	IV.B.6: Topsoil Segregation	Stabilize topsoil piles and minimize loss due to wind and water erosion with use of sediment barriers, mulch, temporary seeding, tackifiers, or functional equivalents, where necessary.	yes	VA Minimum Standard MS-1; VA Minimum Standard MS-2; VESCH Std. & Spec 3.31 (Temporary Seeding); VESCH Std.&Spec 3.35(Mulching)	Seeding of stockpile must be completed within 7 days of the formation of the stockpile if it is to remain dormant for longer than 14 days in accordance with VESCH Std. & Spec. 3.31 (Temporary Seeding) and Minimum Standard MS-1 and MS-2. Stabilization of stockpiles with a temporary cover (i.e., mulch) in accordance with VESCH Std. & Spec. 3.35 (Mulching) is also acceptable. Virginia Minimum Standard MS-2 requires that soil stock piles be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site. ****Note that DETI's 2017 Standards and Specifications is requesting a case by case review to allows an exception to applying soil amendments for temporary seeding. Temporary seeding of stockpiles consists of adding annual grasses and mulch to achieve successful short-term stabilization. It is noted that, in accordance with Virginia Minimum Standard MS-2, erosion and sediment control measures will be in place during the temporary stabilization phase. Additionally, if during routine inspections it is observed that temporary seed is not successfully establishing within14 days, the appropriate soil amendments will be considered and if needed, will be incorporated in accordance with ESC Technical Bulletin #4. Temporary and permanent stabilization will be applied strictly in accordance with MS-1.**	3.1.6.1		x
FERC Plan	IV.C: Drain Tiles	1. Mark locations of drain tiles damaged during construction. 2. Probe all drainage tile systems within the area of disturbance to check for damage. 3. Repair damaged drain tiles to their original or better condition. Do not use filter-covered drain tiles unless the local soil conservation authorities and the landowner agree. Use qualified specialists for testing and repairs. 4. For new pipelines in areas where drain tiles exist or are planned, ensure that the depth of cover over the pipeline is sufficient to avoid interference with drain tile systems. For adjacent pipeline loops in agricultural areas, install the new pipeline with at least the same depth of cover as the existing pipeline(s).	no	NA	NA	3.5.2		x
FERC Plan	IV.D: Irrigation	Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.	no	NA	NA	3.5.2		x
FERC Plan	IV.E: Road Crossings and Access Points	1. Maintain safe and accessible conditions at all road crossings and access points during construction. 2. If crushed stone access pads are used in residential or agricultural areas, place the stone on synthetic fabric to facilitate removal. 3. Minimize the use of tracked equipment on public roadways. Remove any soil or gravel spilled or tracked onto roadways daily or more frequent as necessary to maintain safe road conditions. Repair any damages to roadway surfaces, shoulders, and bar ditches.	no	NA	NA	3.2		x
FERC Plan	IV.F: Temporary Erosion Control	Install temporary erosion controls immediately after initial disturbance of the soil. Temporary erosion controls must be properly maintained throughout construction (on a daily basis) and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration is complete.	no	NA	NA	3.0 3.1 3.1.5		x
FERC Plan	IV.F.1: Temporary Erosion Control	Temporary Slope Breakers a. Temporary slope breakers are intended to reduce runoff velocity and divert water off the construction right-of-way. Temporary slope breakers may be constructed of materials such as soil, silt fence, staked hay or straw bales, or sand bags. b. Install temporary slope breakers on all disturbed areas, as necessary to avoid excessive erosion. Temporary slope breakers must be installed on slopes greater than 5 percent where the base of the slope is less than 50 feet from waterbody, wetland, and road crossings at the following spacing (closer spacing shall be used if necessary) Slope (%) Spacing (feet) 5-15 300 >15-30 200 >30 100 c. Direct the outfall of each temporary slope breaker to a stable, well vegetated area or construct an energy-dissipating device at the end of the slope breaker and off the construction right-of-way. d. Position the outfall of each temporary slope breaker to prevent sediment discharge into wetlands, waterbodies, or other sensitive environmental resource areas.	yes	VESCH Std. & Spec. 3.11 (Temporary Right-of-Way Diversion)	VESCH Std. & Spec 3.11 requires more stringent spacing and construction material (soil and gravel only), as well as specific construction specifications (height, width, grade, etc.). % Slope Spacing (ft.) Less than 7% 100 Between 7% and 25% 75 Between 25% and 40% 50 Greater than 40% 25 The minimum allowable height of the diversion is 18 inches. Side slopes should be 2:1 or flatter to allow the passage of construction traffice, along with a minimum base width of 6 feet. Positive drainage (with less than 2% slope) should be provided to a stabilized outlet, sediment-trapping facility, or a vegetative buffer strip of adequate size. ****Note that DETI's 2017 Standards and Specifications (approved by DEQ) allows a temporary ROW diversion slope between two and eight percent to help prevent temporary ROW diversion and overall potential slope failures by allowing the water to move off of the limits of disturbance. Temporary ROW diversions will have energy dissipating devices (coir logs, belted silt retention fence, rock aprons, etc.) installed at the outfall to slow and filter the water prior to exiting the limits of disturbance. In some instances it will be necessary to increase the fall slope to greater than eight percent to ensure runoff is able to move off the ROW. Approval for installation of temporary ROW diversions with a fall slope exceeding eight percent will be coordinated on a case-by-case basis.**	3.1.6.4		x

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FERC Plan	IV.F.2: Temporary Erosion Control	Temporary Trench Plugs: Temporary trench plugs are intended to segment a continuous open trench prior to backfill. a. Temporary trench plugs may consist of unexcavated portions of the trench, compacted subsoil, sandbags, or some functional equivalent. b. Position temporary trench plugs, as necessary, to reduce trenchline erosion and minimize the volume and velocity of trench water flow at the base of slopes.	no	NA	NA	3.5.11.3		x
FERC Plan	IV.F.3: Temporary Erosion Control	Sediment Barriers: Sediment barriers are intended to stop the flow of sediments and to prevent the deposition of sediments beyond approved workspaces or into sensitive resources. a. Sediment barriers may be constructed of materials such as silt fence, staked hay or straw bales, compacted earth (e.g., driveable berms across travelways), sand bags, or other appropriate materials. b. At a minimum, install and maintain temporary sediment barriers across the entire construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody, wetland, or road crossing until revegetation is successful as defined in this Plan. Leave adequate room between the base of the slope and the sediment barrier to accommodate ponding of water and sediment deposition. c. Where wetlands or waterbodies are adjacent to and downslope of construction work areas, install sediment barriers along the edge of these areas, as necessary to prevent sediment flow into the wetland or waterbody.	no	NA	NA	3.1.5 3.5.11.3 3.5.12.2 3.5.12.4		x
FERC Plan	IV.F.4: Temporary Erosion Control	Mulch: a. Apply mulch on all slopes (except in cultivated cropland) concurrent with or immediately after seeding, where necessary to stabilize the soil surface and to reduce wind and water erosion. Spread mulch uniformly over the area to cover at least 75 percent of the ground surface at a rate of 2 tons/acre of straw or its equivalent, unless the local soil conservation authority, landowner, or land managing agency approves otherwise in writing. b. Mulch can consist of weed-free straw or hay, wood fiber hydromulch, erosion control fabric, or some functional equivalent. c. Mulch all disturbed upland areas (except cultivated cropland) before seeding if: (1) final grading and installation of permanent erosion control measures will not be completed in an area within 20 days after the trench in that area is backfilled (10 days in residential areas), as required in section V.A.1; or (2) construction or restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions. d. If mulching before seeding, increase mulch application on all slopes within 100 feet of waterbodies and wetlands to a rate of 3 tons/acre of straw or equivalent. e. If wood chips are used as mulch, do not use more than 1 ton/acre and add the equivalent of 11 lbs/acre available nitrogen (at least 50 percent of which is slow release). f. Ensure that mulch is adequately anchored to minimize loss due to wind and water. g. When anchoring with liquid mulch binders, use rates recommended by the manufacturer. Do not use liquid mulch binders within 100 feet of wetlands or waterbodies, except where the product is certified environmentally non-toxic by the appropriate state or federal agency or independent standards-setting organization. h. Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat, unless the product is specifically designed to minimize harm to wildlife. Anchor erosion control fabric with staples or other appropriate devices.	yes	VA Minimum Standard MS-1; VESCH Std.&Spec 3.35 (Mulching)	Virginia Minimum Standard MS-1 is more stingent on timing of mulch placement if used as a temporary soil stabilization method: Permanent or temporary soil stabilization shall be applied to denuded areas within 7 days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within 7 days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than 1 year. VESCH Std.&Spec 3.35 is more prescriptive on the types of mulch available to use and their application rate (see table 3.35-A of the VESCH). Other materials may be used with the permission of the local Plan-approving authority. Organic mulches may be used in any area where mulch is required. Select mulch material based on site requirements, availability of materials, and availability of labor and equipment. Prior to Mulching, complete the required grading and install needed sediment control practices. Lime and Fertilizer, should be incorporated and surface roughening accomplished as needed. Seed should be applied prior to mulching except in the following cases: a. Where seed is to be applied as part of a hydroseeder slurry containing fiber mulch. b. Where seed is to be applied following a straw mulch spread during winter months. VESCH Std.& Spec 3.35 is more stringent on the application of the mulch. Mulch materials shall be spread uniformly, by hand or machine. When spreading straw mulch by hand, divide the area to be mulched into approximately 1,000 sq. ft. sections and place 70-90 lbs. (1 1/2 to 2 bales) of straw in each section to facilitate uniform distribution. **Mulching Anchoring:** Straw mulch must be anchored immediately after spreading to prevent displacement. The following methods of anchoring straw may be used: 1. Mulch anchoring tool (Krimer Tool), limited to use on slopes no steeper than 3:1, where equipment can operate safely and operate on the contour. 2. Fiber Mulch: Apply fiber mulch by means of a hydroseeder at a rate of 500-750 lbs./acre over top of straw mulch or hay. 3. Liquid Mulch Binders: Application of liquid mulch binders and tackifiers should be heaviest at edges of areas and at crests of ridges and banks, to prevent displacement. Binders may be applied after mulch is spread or may be sprayed into the mulch as it is being blown onto the soil. Following types of binders may be use: Synthetic Binders and Asphalt 4. Mulch Nettings: lightweight plastic, cotton, or paper nets may be stapled over the mulch according to manufacturer's recommendations. 5. Peg and Twine: because it is labor-intensive, this method is feasible only in small ares where other methods can not be used. Drive 8- to 10-Inch wooden pegs to within 3 inches of the soil surface, every 4 feet in all directions. Stakes may be driven before or after straw is spread. Secure mulch by stretching twine between pegs in a criss-cross within a square pattern. Turn twine 2 or more times around each peg. **Chemical Mulches** may be used alone only in the following situations: a. Where no other mulching material is available b. In conjunction with temporary seeding during the times when mulch is not required for that practice c. From March 15-May 1 and August 15-September 30, provided that they are used on areas with slopes no steeper than 4:1, which have been roughened in accordance with surface roughening (VESCH Std. & Spec. 3.29) FERC Plan IV.F.4: Temporary Erosion Control is more stringent on uses of mulch and the distance to waterbodies. If mulching before seeding, increase mulch application on all slopes within **100 feet of waterbodies and wetlands** to a rate of 3 tons/acre of straw or equivalent. FERC Plan IV.F.4: Temporary Erosion Control is more stringent if wood chips are used as mulch. Do not use more than 1 ton/acre and add the equivalent of 11 lbs/acre available nitrogen (at least 50 percent of which is slow release). FERC FERC Plan IV.F.4: Temporary Erosion Control is more stringent in sensitive wildlife habitat. Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat, unless the product is specifically designed to minimize harm to wildlife.	Appendix R Restoration & Rehabilitation Plan 3.1.4 3.1.6 3.2.4 3.5.12.4		x

FERC Regulatory Document	Regulation	Description	Are there more stringent requirements or practices?		Description of more stringent requirements/practices	Reference in SWPPP	Where Requirement/Practice Applies	
			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Plan	V.A.1: Restoration Cleanup	Commence cleanup operations immediately following backfill operations. Complete final grading, topsoil replacement, and installation of permanent erosion control structures within 20 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (i.e., temporary slope breakers, sediment barriers, and mulch) until conditions allow completion of cleanup. If construction or restoration unexpectedly continues into the winter season when conditions could delay successful decompaction, topsoil replacement, or seeding until the following spring, file with the Secretary for the review and written approval of the Director, a winter construction plan (as specified in section III.I). This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.	yes	VA Minimum Standard MS-1	Virginia Minimum Standard MS-1 is more stingent on timing of temporary and permanent soil stabilization: Permanent or temporary soil stabilization shall be applied to denuded areas within 7 days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within 7 days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than 1 year.	3.1.13		x
FERC Plan	V.A.2: Restoration Cleanup	A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed as specified in section IV.F. and inspected and maintained as specified in sections II.B.12 through 14. When access is no longer required the travel lane must be removed and the right-of-way restored.	no	NA	NA	3.1.13		x
FERC Plan	V.A.3: Restoration Cleanup	Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench shall be considered construction debris, unless approved for use as mulch or for some other use on the construction work areas by the landowner or land managing agency.	no	NA	NA	3.1.6.3		x
FERC Plan	V.A.4: Restoration Cleanup	Remove excess rock from at least the top 12 inches of soil in all cultivated or rotated cropland, managed pastures, hayfields, and residential areas, as well as other areas at the landowner's request. The size, density, and distribution of rock on the construction work area shall be similar to adjacent areas not disturbed by construction. The landowner or land management agency may approve other provisions in writing.	no	NA	NA	3.1.13		x
FERC Plan	V.A.5: Restoration Cleanup	Grade the construction right-of-way to restore pre-construction contours and leave the soil in the proper condition for planting.	no	NA	NA	3.1.13		x
FERC Plan	V.A.6: Restoration Cleanup	Remove construction debris from all construction work areas unless the landowner or land managing agency approves leaving materials onsite for beneficial reuse, stabilization, or habitat restoration.	no	NA	NA	3.1.13		x
FERC Plan	V.A.7: Restoration Cleanup	Remove temporary sediment barriers when replaced by permanent erosion control measures or when revegetation is successful.	yes	VA Minimum Standard MS-18	Minimum Standard MS-18 – All temporary ESC measures shall be removed **within 30 days after final site stabilization or after the temporary measures are no longer needed**, unless otherwise authorized by the Virginia Erosion and Sedimentation Control Program (VESCP) authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.	3.1.5		x
FERC Plan	V.B.1: Permanent Erosion Control Devices	1. Trench Breakers a. Trench breakers are intended to slow the flow of subsurface water along the trench. Trench breakers may be constructed of materials such as sand bags or polyurethane foam. Do not use topsoil in trench breakers. b. An engineer or similarly qualified professional shall determine the need for and spacing of trench breakers. Otherwise, trench breakers shall be installed at the same spacing as and upslope of permanent slope breakers. c. In agricultural fields and residential areas where slope breakers are not typically required, install trench breakers at the same spacing as if permanent slope breakers were required. d. At a minimum, install a trench breaker at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland and where needed to avoid draining a waterbody or wetland. Install trench breakers at wetland boundaries, as specified in the Procedures. Do not install trench breakers within a wetland.	no	NA	NA	3.1.7.1		x

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FERC Plan	V.B.2: Permanent Erosion Control Devices	Permanent Slope Breakers a. Permanent slope breakers are intended to reduce runoff velocity, divert water off the construction right-of-way, and prevent sediment deposition into sensitive resources. Permanent slope breakers may be constructed of materials such as soil, stone, or some functional equivalent. b. Construct and maintain permanent slope breakers in all areas, except cultivated areas and lawns, unless requested by the landowner, using spacing recommendations obtained from the local soil conservation authority or land managing agency. In the absence of written recommendations, use the following spacing unless closer spacing is necessary to avoid excessive erosion on the construction right-of-way: Slope (%) Spacing (feet) 5 - 15 300 >15 - 30 200 >30 100 c. Construct slope breakers to divert surface flow to a stable area without causing water to pool or erode behind the breaker. In the absence of a stable area, construct appropriate energy-dissipating devices at the end of the breaker. d. Slope breakers may extend slightly (about 4 feet) beyond the edge of the construction right-of-way to effectively drain water off the disturbed area. Where slope breakers extend beyond the edge of the construction right-of-way, they are subject to compliance with all applicable survey requirements.	no	NA	NA	3.1.13.1 3.1.6.4		x
FERC Plan	V.C.1: Soil Compaction Mitigation	Test topsoil and subsoil for compaction at regular intervals in agricultural and residential areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to approximate preconstruction conditions. Use penetrometers or other appropriate devices to conduct tests.	no	NA	NA	3.1.13.3		x
FERC Plan	V.C.2: Soil Compaction Mitigation	Plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing the segregated topsoil. If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.	no	NA	NA	3.1.13.3		x
FERC Plan	V.C.3: Soil Compaction Mitigation	Perform appropriate soil compaction mitigation in severely compacted residential areas.	no	NA	NA	3.1.13.3		x
FERC Plan	V.D.1: Revegetation	General: a. The project sponsor is responsible for ensuring successful revegetation of soils disturbed by project-related activities, except as noted in section V.D.1.b. b. Restore all turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. Restoration work must be performed by personnel familiar with local horticultural and turf establishment practices.	no	NA	NA	3.1.13.4 Appendix R- Restoration & Rehabilitation Plan		x
FERC Plan	V.D.2: Revegetation	Soil Additives: Fertilize and add soil pH modifiers in accordance with written recommendations obtained from the local soil conservation authority, land management agencies, or landowner. Incorporate recommended soil pH modifier and fertilizer into the top 2 inches of soil as soon as practicable after application.	no	NA	FERC V.D.2 Revegetation requirement to consult with the local soil conservation authority or land management agency provides more county-specific information and up-to-date guidance than the 1992 Virginia Erosion and Sediment Control Handbook (VESCH).	Appendix R- Restoration & Rehabilitation Plan		x
FERC Plan	V.D.3: Revegetation	Seeding Requirements: a. Prepare a seedbed in disturbed areas to a depth of 3 to 4 inches using appropriate equipment to provide a firm seedbed. When hydroseeding, scarify the seedbed to facilitate lodging and germination of seed. b. Seed disturbed areas in accordance with written recommendations for seed mixes, rates, and dates obtained from the local soil conservation authority or the request of the landowner or land management agency. Seeding is not required in cultivated croplands unless requested by the landowner. c. Perform seeding of permanent vegetation within the recommended seeding dates. If seeding cannot be done within those dates, use appropriate temporary erosion control measures discussed in section IV.F and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. Dormant seeding or temporary seeding of annual species may also be used, if necessary, to establish cover, as approved by the Environmental Inspector. Lawns may be seeded on a schedule established with the landowner. d. In the absence of written recommendations from the local soil conservation authorities, seed all disturbed soils within 6 working days of final grading, weather and soil conditions permitting, subject to the specifications in section V.D.3.a through V.D.3.c. e. Base seeding rates on Pure Live Seed. Use seed within 12 months of seed testing. f. Treat legume seed with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydro). g. In the absence of written recommendations from the local soil conservation authorities, landowner, or land managing agency to the contrary, a seed drill equipped with a cultipacker is preferred for seed application. Broadcast or hydroseeding can be used in lieu of drilling at double the recommended seeding rates. Where seed is broadcast, firm the seedbed with a cultipacker or roller after seeding. In rocky soils or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the Environmental Inspector.	no	NA	FERC V.D.2 Revegetation requirement to consult with the local soil conservation authority or land management agency provides more county-specific information and up-to-date guidance than the 1992 Virginia Erosion and Sediment Control Handbook (VESCH).	Appendix R- Restoration & Rehabilitation Plan		x

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			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Plan	VI.Off-Road Vehicle Control	To each owner or manager of forested lands, offer to install and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include: A. signs; B. fences with locking gates; C. slash and timber barriers, pipe barriers, or a line of boulders across the right-of-way; and D. conifers or other appropriate trees or shrubs across the right-of-way.	no	NA	NA	3.1.2		x
FERC Plan	VII.A.1: Post-Construction Activities and Reporting	MONITORING AND MAINTENANCE: Conduct follow-up inspections of all disturbed areas, as necessary, to determine the success of revegetation and address landowner concerns. At a minimum, conduct inspections after the first and second growing seasons.	no	NA	NA	Appendix R-Restoration & Rehabilitation Plan		x
FERC Plan	VII.A.2: Post-Construction Activities and Reporting	2. Revegetation in non-agricultural areas shall be considered successful if upon visual survey the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands. In agricultural areas, revegetation shall be considered successful when upon visual survey, crop growth and vigor are similar to adjacent undisturbed portions of the same field, unless the easement agreement specifies otherwise. Continue revegetation efforts until revegetation is successful.	no	NA	NA	Appendix R-Restoration & Rehabilitation Plan		x
FERC Plan	VII.A.3: Post-Construction Activities and Reporting	Monitor and correct problems with drainage and irrigation systems resulting from pipeline construction in agricultural areas until restoration is successful.	no	NA	NA	3.5.2		x
FERC Plan	VII.A.4: Post-Construction Activities and Reporting	Restoration shall be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands, construction debris is removed (unless otherwise approved by the landowner or land managing agency per section V.A.6), revegetation is successful, and proper drainage has been restored.	yes	VA Minimum Standard MS-3	Minimum Standard MS-3 more clearly defines the meaning of sucessful revegetation– A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, is mature enough to survive, and will inhibit erosion.	Appendix R-Restoration & Rehabilitation Plan		x
FERC Plan	VII.A.5: Post-Construction Activities and Reporting	Routine vegetation mowing or clearing over the full width of the permanent right-of-way in uplands shall not be done more frequently than every 3 years. However, to facilitate periodic corrosion/leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In no case shall routine vegetation mowing or clearing occur during the migratory bird nesting season between April 15 and August 1 of any year unless specifically approved in writing by the responsible land management agency or the U.S. Fish and Wildlife Service.	no	NA	NA	Appendix R-Restoration & Rehabilitation Plan		x
FERC Plan	VII.A.6: Post-Construction Activities and Reporting	Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, shall continue throughout the life of the project. Maintain signs, gates, and permanent access roads as necessary.	no	NA	NA	3.1.2		x
FERC Plan	VII.B.1: Reporting	1. The project sponsor shall maintain records that identify by milepost: a. method of application, application rate, and type of fertilizer, pH modifying agent, seed, and mulch used; b. acreage treated; c. dates of backfilling and seeding; d. names of landowners requesting special seeding treatment and a description of the follow-up actions; e. the location of any subsurface drainage repairs or improvements made during restoration; and f. any problem areas and how they were addressed.	no	NA	NA	Appendix R-Restoration and Rehabilitation plan		x
FERC Plan	VII.B.2: Reporting	The project sponsor shall file with the Secretary quarterly activity reports documenting the results of follow-up inspections required by section VII.A.1; any problem areas, including those identified by the landowner; and corrective actions taken for at least 2 years following construction. The requirement to file quarterly activity reports with the Secretary does not apply to projects constructed under the automatic authorization, prior notice, or advanced notice provisions in the FERC's regulations.	no	NA	NA	Appendix R-Restoration and Rehabilitation plan		x

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			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Wetland and Waterbody Construction and Mitigation Procedures								
FERC Procedures	III.A: Environmental Inspectors	At least one Environmental Inspector having knowledge of the wetland and waterbody conditions in the project area is required for each construction spread. The number and experience of Environmental Inspectors assigned to each construction spread shall be appropriate for the length of the construction spread and the number/significance of resources affected.	no	NA	NA	7.1		x
FERC Procedures	III.B: Environmental Inspectors	The Environmental Inspector's responsibilities are outlined in the Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).	no	NA	NA	N/A		x
FERC Procedures	IV:A.1: Preconstruction Planning	The project sponsor shall develop project-specific Spill Prevention and Response Procedures that meet applicable requirements of state and federal agencies. A copy must be filed with the Secretary prior to construction and made available in the field on each construction spread. This filing requirement does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations. It shall be the responsibility of the project sponsor and its contractors to structure their operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to waterbodies or wetlands. The project sponsor and its contractors must, at a minimum, ensure that: a. all employees handling fuels and other hazardous materials are properly trained; b. all equipment is in good operating order and inspected on a regular basis; c. fuel trucks transporting fuel to on-site equipment travel only on approved access roads; d. all equipment is parked overnight and/or fueled at least 100 feet from a waterbody or in an upland area at least 100 feet from a wetland boundary. These activities can occur closer only if the Environmental Inspector determines that there is no reasonable alternative, and the project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill; e. hazardous materials, including chemicals, fuels, and lubricating oils, are not stored within 100 feet of a wetland, waterbody, or designated municipal watershed area, unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas; f. concrete coating activities are not performed within 100 feet of a wetland or waterbody boundary, unless the location is an existing industrial site designated for such use. These activities can occur closer only if the Environmental Inspector determines that there is no reasonable alternative, and the project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill; g. pumps operating within 100 feet of a waterbody or wetland boundary utilize appropriate secondary containment systems to prevent spills; and h. bulk storage of hazardous materials, including chemicals, fuels, and lubricating oils have appropriate secondary containment systems to prevent spills.	no	NA	NA	6.0		x
FERC Procedures	IV.A.2: Preconstruction Planning	The project sponsor and its contractors must structure their operations in a manner that provides for the prompt and effective cleanup of spills of fuel and other hazardous materials. At a minimum, the project sponsor and its contractors must: a. ensure that each construction crew (including cleanup crews) has on hand sufficient supplies of absorbent and barrier materials to allow the rapid containment and recovery of spilled materials and knows the procedure for reporting spills and unanticipated discoveries of contamination; b. ensure that each construction crew has on hand sufficient tools and material to stop leaks; c. know the contact names and telephone numbers for all local, state, and federal agencies (including, if necessary, the U. S. Coast Guard and the National Response Center) that must be notified of a spill; and d. follow the requirements of those agencies in cleaning up the spill, in excavating and disposing of soils or other materials contaminated by a spill, and in collecting and disposing of waste generated during spill cleanup.	no	NA	NA	6.0		x
FERC Procedures	IV.B: Agency Coordination	The project sponsor must coordinate with the appropriate local, state, and federal agencies as outlined in these Procedures and in the FERC's Orders.	no	NA	NA	1.0 10.0		x
FERC Procedures	V.A:Waterbody Crossings	NOTIFICATION PROCEDURES AND PERMITS: 1. Apply to the U.S. Army Corps of Engineers (COE), or its delegated agency, for the appropriate wetland and waterbody crossing permits. 2. Provide written notification to authorities responsible for potable surface water supply intakes located within 3 miles downstream of the crossing at least 1 week before beginning work in the waterbody, or as otherwise specified by that authority. 3. Apply for state-issued waterbody crossing permits and obtain individual or generic section 401 water quality certification or waiver. 4. Notify appropriate federal and state authorities at least 48 hours before beginning trenching or blasting within the waterbody, or as specified in applicable permits.	no	NA	NA	3.5.11		x

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			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Procedures	V.B.1:Installation	Time Window for Construction: Unless expressly permitted or further restricted by the appropriate federal or state agency in writing on a site-specific basis, instream work, except that required to install or remove equipment bridges, must occur during the following time windows: a. coldwater fisheries - June 1 through September 30; and b. coolwater and warmwater fisheries - June 1 through November 30.	no	NA	NA	3.5.11.1		x
FERC Procedures	V.B.2:Installation	Extra Work Areas a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. b. The project sponsor shall file with the Secretary for review and written approval by the Director, site-specific justification for each extra work area with a less than 50-foot setback from the water's edge, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. The justification must specify the conditions that will not permit a 50-foot setback and measures to ensure the waterbody is adequately protected. c. Limit the size of extra work areas to the minimum needed to construct the waterbody crossing.	no	NA	NA	3.5.11		x
FERC Procedures	V.B.3:Installation	General Crossing Procedures a. Comply with the COE, or its delegated agency, permit terms and conditions. b. Construct crossings as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit. c. Where pipelines parallel a waterbody, maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way, except where maintaining this offset will result in greater environmental impact. d. Where waterbodies meander or have multiple channels, route the pipeline to minimize the number of waterbody crossings. e. Maintain adequate waterbody flow rates to protect aquatic life, and prevent the interruption of existing downstream uses. f. Waterbody buffers (e.g., extra work area setbacks, refueling restrictions) must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete. g. Crossing of waterbodies when they are dry or frozen and not flowing may proceed using standard upland construction techniques in accordance with the Plan, provided that the Environmental Inspector verifies that water is unlikely to flow between initial disturbance and final stabilization of the feature. In the event of perceptible flow, the project sponsor must comply with all applicable Procedure requirements for "waterbodies" as defined in section I.B.1.	no	NA	NA	3.5.11		x
FERC Procedures	V.B.4:Installation	Spoil Pile Placement and Control a. All spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings, must be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in section V.B.2. b. Use sediment barriers to prevent the flow of spoil or silt-laden water into any waterbody.	no	NA	NA	3.5.11.4		x

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			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Procedures	V.B.5:Installation	Equipment Bridges a. Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment. b. Construct and maintain equipment bridges to allow unrestricted flow and to prevent soil from entering the waterbody. Examples of such bridges include: (1) equipment pads and culvert(s); (2) equipment pads or railroad car bridges without culverts; (3) clean rock fill and culvert(s); and (4) flexi-float or portable bridges. Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges. c. Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to prevent bank erosion or streambed scour. If necessary, install energy dissipating devices downstream of the culverts. d. Design and maintain equipment bridges to prevent soil from entering the waterbody. e. Remove temporary equipment bridges as soon as practicable after permanent seeding. f. If there will be more than 1 month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the right-of-way is available, remove temporary equipment bridges as soon as practicable after final cleanup. g. Obtain any necessary approval from the COE, or the appropriate state agency for permanent bridges.	yes	VA Minimum Standard, MS-13 VESCH Std.& Spec. 3.24 (Temporary Vehicular Stream Crossing)	**VA Minimum Standard MS-13** - When a live watercourse must be crossed by construction vehicles **more than twice in any 6-month period**, a temporary vehicular stream crossing constructed of nonerodible material shall be provided. MS-13 is more stringent than FERC Procedure V.B.5.a which limits the number of equipment crossings of waterbodies prior to bridge installation to one crossing **per piece of clearing equipmen**t. **VESCH Std.&Spec 3.24- <u>Temporary Bridge Crossing</u> - (Design)**Structures may be designed in various configurations. However, the materials used to construct the bridge must be able to withstand the anticipated loading of the construction traffic. The temporary waterway crossing shall be at right angles to the stream. Where approach conditions dictate, the crossing may vary 15° from a line drawn perpendicular to the center line of the stream at the intended crossing location. The centerline of both roadway approaches shall coincide with the crossing alignment centerline for a minimum distance of 50 feet from each bank of the waterway being crossed. If physical or right-of-way restraints preclude the 50 feet minimum, a shorter distance may be provided. All fill materials associated with the roadway approach shall be limited to a maximum height of 2 feet above the existing flood plain elevation. A water diverting structure such as a dike or swale shall be constructed (across the roadway on both roadway approaches) 50 feet (maximum) on either side of the waterway crossing. If the roadway approach is constructed with a reverse grade away from the waterway, a separte diverting structure is not required. All crossings shall have one traffic lane. The minimum width shall be 12 feet with a maximum width of 20 feet. **<u>Temporary Bridge Crossing</u> - (Construction)** a. Clearing and excavation of the stream bed and banks shall be kept to a minimum. b. The temporary bridge structure shall be constructed at or above bank elevation to prevent the entrapment of floating materials and debris. c. Abutments shall be placed parallel to and on stable banks. d. Bridges shall be constructed to span the entire channel. If the channel width exceeds 8 feet (as measured from top-of-bank to top-of-bank), then a footing, pier or bridge support may be constructed within the waterway. One additional footing, pier or bridge support will be permitted for each additional 8-foot width of the channel. No footing, pier or bridge support, however, will be permitted within the channel for waterways which are less than 8 feet wide. e. Stringers shall either be logs, sawn timber, prestressed concrete beams, metal beams, or other approved materials. f. Decking materials shall be of sufficient strength to support the anticipated load. All decking members shall be placed perpendicular to the stringers, butted tightly, and securely fastened to the stringers. Decking materials must be butted tightly to prevent any soil material tracked onto the bridge from falling into the waterway below. g. Run planking (optional) shall be securely fastened to the length of the span. One run plank shall be provided for each track of the equipment wheels. Although run planks are optional, they may be necessary to properly distribute loads. h. Curbs or fenders may be installed along the outer sides of the deck. Curbs or fenders are an option which will provide additional safety. i. Bridges shall be securely anchored at only one end using steel cable or chain. Anchoring at only one end will prevent channel obstruction in the event that floodwaters float the bridge. Acceptable anchors are large .trees, large boulders, or driven steel anchors. Anchoring shall be sufficient to prevent the bridge from floating downstream and possibly causing an obstruction to the flow. j. All areas disturbed during installation shall be stabilized within 7 calendar days of that disturbance in accordance with Minimum Standard #1. k. When the temporary bridge is no longer needed, all structures including abutments and other bridging materials should be removed immediately. l. Final clean-up shall consist of removal of the temporary bridge from the waterway, protection of banks from erosion, and removal of all construction materials. All removed materials shall be stored outside flood plain of the stream. Removal of the bridge and clean-up of the area shall be accomplished without construction equipment working in the waterway channel.	3.5.11.3 3.2.4 Appendix B (DTI Standards and Specifications and ACP Variance Requests)		x

FERC Regulatory Document	Regulation	Description	Are there more stringent requirements or practices?		Description of more stringent requirements/practices	Reference in SWPPP	Where Requirement/Practice Applies	
			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Procedures	V.B.6:Installation	a. Dry-Ditch Crossing Methods a. Unless approved otherwise by the appropriate federal or state agency, install the pipeline using one of the dry-ditch methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, or federally-designated as critical habitat. b. Dam and Pump (1) The dam-and-pump method may be used without prior approval for crossings of waterbodies where pumps can adequately transfer streamflow volumes around the work area, and there are no concerns about sensitive species passage. (2) Implementation of the dam-and-pump crossing method must meet the following performance criteria: (i) use sufficient pumps, including on-site backup pumps, to maintain downstream flows; (ii) construct dams with materials that prevent sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner); (iii) screen pump intakes to minimize entrainment of fish; (iv) prevent streambed scour at pump discharge; and (v) continuously monitor the dam and pumps to ensure proper operation throughout the waterbody crossing. c. Flume Crossing: The flume crossing method requires implementation of the following steps: (1) install flume pipe after blasting (if necessary), but before any trenching; (2) use sand bag or sand bag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required to achieve an effective seal); (3) properly align flume pipe(s) to prevent bank erosion and streambed scour; (4) do not remove flume pipe during trenching, pipelaying, or backfilling activities, or initial streambed restoration efforts; and (5) remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete. d. Horizontal Directional Drill For each waterbody or wetland that would be crossed using the HDD method, file with the Secretary for the review and written approval by the Director, a plan that includes: (1) site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction; (2) justification that disturbed areas are limited to the minimum needed to construct the crossing;	yes	VESCH E&S Std. & Spec 3.25 (Utility Stream Crossing)	VESCH Std.&Spec 3.25- **Flume Pipe Crossing -** To be used when in-stream construction will last less than 72 hours and stream is narrow (less than 10 feet wide), making "cofferdam" construction impractical. a. The flume pipe crossing must be made operational prior to the start of construction in the stream. b. The materials used (culvert(s), stone and filter fabric) must meet the physical constraints of those used in VEHICULAR STREAM CROSSING, Std. & Spec. 3.24. c. A large flume pipe (or culvert) of an adequate size to support normal water channel flow (see Table 3.24-A) shall then be installed in the stream bed across the proposed pipeline trench centerline. VDOT #1 Coarse Aggregate (minimum size) or riprap shall be placed close to each end of the flume pipe so as to dam off the creek forcing the water to flow through the flume pipe. d. The entrapped water can then be pumped from the creek within the dammed- off area and in the proposed trench centerline into an approved DEWATERING STRUCTURE (see Std. & Spec. 3.26). The trench can then be dug under the flume pipe. The pipe sections will then be installed to the proper depth under the flume pipe. After pipe sections are installed, the ditch will be backfilled and restabilization shall be carried out. e. Restabilization shall consist of the installation of ungrouted riprap on all disturbed streambank areas (or on the area 6 feet on both sides of the centerline of the utility trench, whichever is greater) with slopes of 3:1 or greater. Refer to Std. & Spec. 3.19, RIPRAP, for installation requirements. For slopes of 3:1 or less, vegetative stabilization may be used, pending approval by the Plan-Approving Authority or inspection authority. Stabilization of its streambed and banks and the approach areas should occur immediately following the attainment of final grade. f. After completion of backfilling operation and restoration of stream/creek banks and leveling of stream bed, the flume pipe can then be removed. The gravel can be removed or spread in the stream bed depending on permit requirements. Sediment control in approach areas shall not be removed until all construction is completed in stream/creek crossing area. All ground contours shall be returned to their original condition. ****Note that DETI's Standards and Specifications is requesting a review of a case by case basis with the DEQ the use of flume pipe crossing method on streams greater than 10 feet wide, consistent with the FERC Procedures. At the time of crossing, the method which allows for a safe and prompt crossing will be selected. Flume pipe crossings are an option along with dam and pump. The deviation request also included on a case by case basis with the DEQ, an extension to the 72 hour timeframe for in-stream construction, only in the event that rock is encountered which requires blasting/rock hammering that could significantly increase the amount of time needed to complete the crossing or a failure in crossing method requires additional time to either mitigate or change.** **Cofferdam Utility Crossing -** To be used when stream diversion is not practical and stream is wide enough (10 feet or wider) to make cofferdam installation practical. a. Construction is to be performed in low flow periods. b. Crossing shall be accomplished in a manner that will not prohibit the flow of the stream. (See Plate 3.25-4). c. As with all utility line crossings, approach areas must be controlled with perimeter measures such as silt fence or straw bales. d. Remove large rocks, woody vegetation, or other material from the streambed and banks that may get in the way of placing the riprap	3.5.11.4 3.5.1 3.5.11.2 Appendix B (DTI Standards and Specifications and ACP Variance Requests)		x
FERC Procedures	V.B.7:Installation	Crossings of Minor Waterbodies Where a dry-ditch crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions: a. except for blasting and other rock breaking measures, complete instream construction activities (including trenching, pipe installation, backfill, and restoration of the streambed contours) within 24 hours. Streambanks and unconsolidated streambeds may require additional restoration after this period; b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and c. equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification or protected status (e.g., agricultural or intermittent drainage ditches). However, if an equipment bridge is used it must be constructed as described in section V.B.5.	no	NA	NA	3.5.11.4		x

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			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Procedures	V.B.8:Installation	Crossings of Intermediate Waterbodies Where a dry-ditch crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions: a. complete instream construction activities (not including blasting and other rock breaking measures) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible; b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and c. all other construction equipment must cross on an equipment bridge as specified in section V.B.5.	no	NA	NA	3.5.11.4		x
FERC Procedures	V.B.9:Installation	Crossings of Major Waterbodies Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying all areas to be disturbed by construction for each major waterbody crossing (the scaled drawings are not required for any offshore portions of pipeline projects). This plan must be developed in consultation with the appropriate state and federal agencies and shall include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues. The requirement to file major waterbody crossing plans does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations. The Environmental Inspector may adjust the final placement of the erosion and sediment control structures in the field to	no	NA	NA	3.5.11.4		x
FERC Procedures	V.B.10:Installation	Temporary Erosion and Sediment Control Install sediment barriers (as defined in section IV.F.3.a of the Plan) immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan; however, the following specific measures must be implemented at stream crossings: a. install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. Removable sediment barriers (or driveable berms) must be installed across the travel lane. These removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent; b. where waterbodies are adjacent to the construction right-of-way and the right-of-way slopes toward the waterbody, install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil within the construction right-of-way and prevent sediment flow into the waterbody; and	no	NA	NA	3.5.11.3		x

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			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Procedures	V.B.11:Installation	Trench Dewatering Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in silt-laden water flowing into any waterbody. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.	yes	VESCH Std.& Spec 3.26 (Dewatering Structure)	**VESCH Std.&Spec 3.26-** **Design Criteria:** 1. A dewatering structure must be sized (and operated) to allow pumped water to flow through the filtering device without overtopping the structure. 2. Material from any required excavation shall be stored in an area and protected in a manner that will prevent sediments from eroding and moving off-site. 3. An excavated basin (applicable to "Straw Bale/Silt Fence Pit") may be lined with filter fabric to help reduce scour and to prevent the inclusion of soil from within the structure. **Construction Specifications:** 1. **Portable Sediment Tank** a. The structure may be constructed with steel drums, sturdy wood or other material suitable for handling the pressure exerted by the volume of water. b. Sediment tanks will have a minimum depth of two feet. c. The sediment tank shall be located for easy clean-out and disposal of the trapped sediment and to minimize the interference with construction activities. d. The following formula shall be used to determine the storage volume of the sediment tank: Pump discharge (g.p.m.) x 16 = cubic feet of storage required e. Once the water level nears the top of the tank, the pump must be shut off while the tank drains and additional capacity is made available. f. The tank shall be designed to allow for emergency flow over top of the tank. g. Clean-out of the tank is required once1/3 of the original capacity is depleted due to sediment accumulation. The tank shall be clearly marked showing the clean-out point. 2. **Filter Box** a. The box selected should be made of steel, sturdy wood or other materials suitable to handle the pressure requirements imposed by the volume of water. Fifty-five gallon drums welded top to bottom are normally readily available and, in most cases, will suffice. b. Bottom of the box shall be made porous by drilling holes (or some other method). c. VDOT #3 Coarse Aggregate shall be placed over the holes at a minimum depth of 12 inches (metal "hardware" cloth may need to be placed between the aggregate and the holes if holes are drilled larger than the majority of the stone). d. As a result of the fast rate of flow of sediment-laden water through the aggregate, the effluent must be directed over a well-vegetated strip of at least 50 feet after leaving the base of the filter box. e. The box shall be sized as follows: Pump discharge (g.p.m.) x 16 = cubic feet of storage required f. Once the water level nears the top of the box, the pump must be shut off while the box drains and additional capacity is made available. g. The box shall be designed/ constructed to allow for emergency flow over the top of this box. h. Clean-out of the box is required once one-third of the original capacity is depleted due to sediment accumulation. The tank shall be clearly marked showing the clean-out point. i. If the stone filter does become clogged with sediment so that it no longer adequately performs its function, the stones must be pulled away from the inlet, cleaned and replaced. Note: Using a filter box only allows for minimal settling time for sediment particles; therefore, it should only be used when site conditions restrict the use of the other methods. 3. **Straw Bale /Silt Fence Pit** (see Plate 3.26-3): a. Measure shall consist of straw bales or silt fence. b. The structure must have a capacity which is dictated by the following formula: Pump discharge (g.p.m.) x 16 = cubic feet of storage required. In calculating the capacity, one should include the volume available from the floor of the excavation to the crest of the stone weir. c. The perimeter measures must be installed as per the guidelines found in Std. & Spec. 3.04, STRAW BALE BARRIER and Std. & Spec. 3.05, SILT FENCE. d. Once the water level nears the crest of the stone weir (emergency overflow), the pump must be shut off while the structure drains down to the elevation of the wet storage. e. The wet storage pit may be dewatered only after a minimum of 6 hours of sediment settling time. This effluent should be pumped across a well-vegetated area or through a silt fence prior to entering a watercourse. f. Once the wet storage area becomes filled to one-half of the excavated depth, accumulated sediment shall be removed and properly disposed of. ****Note that DETI's Standards and Specifications (approved by DEQ) allows the use of a modified dewatering structure in combination with a filter bag. The structure is similar to the straw bale/silt fence pit described in the VESCH, but the wet storage area is not excavated 3 ft below the perimeter measures since the structures are placed off the right-of-way in well vegetated areas. The filter bag discharges into the dewatering structure for additional filtration through the straw bales. Additional energy dissipating devices may be installed downgradient of the dewatering structure, as necessary. It is noted that filter bags are often installed off the right-of-way to avoid discharge to denuded areas on the right-of-way and to benefit from additional filtration provided by the vegetation that exists off the right-of-way. Prior to installing a dewatering structure off the right-of-way appropriate coordination with the landowner will occur. Installation and removal of the referenced dewatering practice does not involve ground disturbance.**	3.1.8.1 3.1.8.2 3.1.11 Appendix B (DTI Standards and Specifications and ACP Variance Requests)		x

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			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Procedures	V.C:Restoration	1. Use clean gravel or native cobbles for the upper 1 foot of trench backfill in all waterbodies that contain coldwater fisheries. 2. For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing instream construction activities. For dry-ditch crossings, complete streambed and bank stabilization before returning flow to the waterbody channel. 3. Return all waterbody banks to preconstruction contours or to a stable angle of repose as approved by the Environmental Inspector. 4. Install erosion control fabric or a functional equivalent on waterbody banks at the time of final bank recontouring. Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat unless the product is specifically designed to minimize harm to wildlife. Anchor erosion control fabric with staples or other appropriate devices. 5. Application of riprap for bank stabilization must comply with COE, or its delegated agency, permit terms and conditions. 6. Unless otherwise specified by state permit, limit the use of riprap to areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric. 7. Revegetate disturbed riparian areas with native species of conservation grasses, legumes, and woody species, similar in density to adjacent undisturbed lands. 8. Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent that are less than 50 feet from the waterbody, or as needed to prevent sediment transport into the waterbody. In addition, install sediment barriers as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody. 9. Sections V.C.3 through V.C.7 above also apply to those perennial or intermittent streams not flowing at the time of construction.	no	NA	NA	3.5.11.3 3.5.11.5		x
FERC Procedures	V.D:Post-Construction Maintenance	1. Limit routine vegetation mowing or clearing adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating may be cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in riparian areas that are between HDD entry and exit points. 2. Do not use herbicides or pesticides in or within 100 feet of a waterbody except as allowed by the appropriate land management or state agency. 3. Time of year restrictions specified in section VII.A.5 of the Plan (April 15 – August 1 of any year) apply to routine mowing and clearing of riparian areas.	no	NA	NA	3.5.11.6		x
FERC Procedures	VI: Wetland Crossings							
FERC Procedures	VI.A.1: General	The project sponsor shall conduct a wetland delineation using the current federal methodology and file a wetland delineation report with the Secretary before construction. The requirement to file a wetland delineation report does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations. This report shall identify: a. by milepost all wetlands that would be affected; b. the National Wetlands Inventory (NWI) classification for each wetland; c. the crossing length of each wetland in feet; and d. the area of permanent and temporary disturbance that would occur in each wetland by NWI classification type. The requirements outlined in this section do not apply to wetlands in actively cultivated or rotated cropland. Standard upland protective measures, including workspace and topsoiling requirements, apply to these agricultural wetlands.	no	NA	NA	2.19.3 11.0		x
FERC Procedures	VI.A.2: General	Route the pipeline to avoid wetland areas to the maximum extent possible. If a wetland cannot be avoided or crossed by following an existing right-of-way, route the new pipeline in a manner that minimizes disturbance to wetlands. Where looping an existing pipeline, overlap the existing pipeline right-of-way with the new construction right-of-way. In addition, locate the loop line no more than 25 feet away from the existing pipeline unless site-specific constraints would adversely affect the stability of the existing pipeline.	no	NA	NA	2.19.3 3.5.12		x

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			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Procedures	VI.A.3: General	Limit the width of the construction right-of-way to 75 feet or less. Prior written approval of the Director is required where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a federally delineated wetland be expanded beyond 75 feet. Early in the planning process the project sponsor is encouraged to identify site-specific areas where excessively wide trenches could occur and/or where spoil piles could be difficult to maintain because existing soils lack adequate unconfined compressive strength.	no	NA	NA	3.5.12		x
FERC Procedures	VI.A.4: General	Wetland boundaries and buffers must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.	no	NA	NA	3.5.12.1		x
FERC Procedures	VI.A.5: General	Implement the measures of sections V and VI in the event a waterbody crossing is located within or adjacent to a wetland crossing. If all measures of sections V and VI cannot be met, the project sponsor must file with the Secretary a site-specific crossing plan for review and written approval by the Director before construction. This crossing plan shall address at a minimum: a. spoil control; b. equipment bridges; c. restoration of waterbody banks and wetland hydrology; d. timing of the waterbody crossing; e. method of crossing; and f. size and location of all extra work areas.	no	NA	NA	3.5.12		x
FERC Procedures	VI.A.6: General	Do not locate aboveground facilities in any wetland, except where the location of such facilities outside of wetlands would prohibit compliance with U.S. Department of Transportation regulations.	no	NA	NA	3.5.12		x
FERC Procedures	VI.B.1: Installation	Extra Work Areas and Access Roads a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. b. The project sponsor shall file with the Secretary for review and written approval by the Director, site-specific justification for each extra work area with a less than 50-foot setback from wetland boundaries, except where adjacent upland consists of cultivated or rotated cropland or other disturbed land. The justification must specify the site-specific conditions that will not permit a 50-foot setback and measures to ensure the wetland is adequately protected. c. The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats). In wetlands that cannot be appropriately stabilized, all construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access roads in upland areas do not provide reasonable access, limit all other construction equipment to one pass through the wetland using the construction right-of-way. d. The only access roads, other than the construction right-of-way, that can be used in wetlands are those existing roads that can be used with no modifications or improvements, other than routine repair, and no impact on the wetland.	no	NA	NA	3.2 3.5.12		x
FERC Procedures	VI.B.2: Installation	Crossing Procedures a. Comply with COE, or its delegated agency, permit terms and conditions. b. Assemble the pipeline in an upland area unless the wetland is dry enough to adequately support skids and pipe. c. Use “push-pull” or “float” techniques to place the pipe in the trench where water and other site conditions allow. d. Minimize the length of time that topsoil is segregated and the trench is open. Do not trench the wetland until the pipeline is assembled and ready for lowering in. e. Limit construction equipment operating in wetland areas to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way. f. Cut vegetation just above ground level, leaving existing root systems in place, and remove it from the wetland for disposal. The project sponsor can burn woody debris in wetlands, if approved by the COE and in accordance with state and local regulations, ensuring that all remaining woody debris is removed for disposal. g. Limit pulling of tree stumps and grading activities to directly over the trenchline. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and Environmental Inspector determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way. h. Segregate the top 1 foot of topsoil from the area disturbed by trenching, except in areas where standing water is present or soils are saturated. Immediately after backfilling is complete, restore the segregated topsoil to its original location. i. Do not use rock, soil imported from outside the wetland, tree stumps, or brush riprap to support equipment on the construction right-of-way. j. If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil and subsoil in wetlands, use low-ground-weight construction equipment, or operate normal equipment on timber riprap, prefabricated equipment mats, or terra mats. k. Remove all project-related material used to support equipment on the construction right-of-way upon completion of construction.	No	NA	NA	3.5.12.1 3.5.12.2 3.5.12.3		x

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			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Procedures	VI.B.3: Installation	Temporary Sediment Control Install sediment barriers (as defined in section IV.F.3.a of the Plan) immediately after initial disturbance of the wetland or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Except as noted below in section VI.B.3.c, maintain sediment barriers until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan. a. Install sediment barriers across the entire construction right-of-way immediately upslope of the wetland boundary at all wetland crossings where necessary to prevent sediment flow into the wetland. b. Where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil within the construction right-of-way and prevent sediment flow into the wetland. c. Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands. Remove these sediment barriers during right-of-way cleanup.	yes	VA Minimum Standard MS-3 VA Minimum Standard MS-18	Minimum Standard MS-3 more clearly defines the meaning of successful revegetation– A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, is mature enough to survive, and will inhibit erosion. Minimum Standard MS-18 – All temporary ESC measures shall be removed **within 30 days after final site stabilization** or after the temporary measures are no longer needed, unless otherwise authorized by the Virginia Erosion and Sedimentation Control Program (VESCP) authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.	3.5.12.2		x
FERC Procedures	VI.B.4: Installation	Trench Dewatering Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in silt-laden water flowing into any wetland. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.	yes	VESCH Std.& Spec 3.26 (Dewatering Structure)	See FERC Procedures V.B.11 above	3.5.12.3		x
FERC Procedures	VI.C: Restoration	1. Where the pipeline trench may drain a wetland, construct trench breakers at the wetland boundaries and/or seal the trench bottom as necessary to maintain the original wetland hydrology. 2. Restore pre-construction wetland contours to maintain the original wetland hydrology. 3. For each wetland crossed, install a trench breaker at the base of slopes near the boundary between the wetland and adjacent upland areas. Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from the wetland, or as needed to prevent sediment transport into the wetland. In addition, install sediment barriers as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the wetland. 4. Do not use fertilizer, lime, or mulch unless required in writing by the appropriate federal or state agency. 5. Consult with the appropriate federal or state agencies to develop a project-specific wetland restoration plan. The restoration plan shall include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of invasive species and noxious weeds (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts. Provide this plan to the FERC staff upon request. 6. Until a project-specific wetland restoration plan is developed and/or implemented, temporarily revegetate the construction right-of-way with annual ryegrass at a rate of 40 pounds/acre (unless standing water is present). 7. Ensure that all disturbed areas successfully revegetate with wetland herbaceous and/or woody plant species. 8. Remove temporary sediment barriers located at the boundary between wetland and adjacent upland areas after revegetation and stabilization of adjacent upland areas are judged to be successful as specified in section VII.A.4 of the Plan.	yes	VA Minimum Standard MS-3 VA Minimum Standard MS-18	Minimum Standard MS-3 more clearly defines the meaning of sucessful revegetation– A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, is mature enough to survive, and will inhibit erosion. Minimum Standard MS-18 – All temporary ESC measures shall be removed **within 30 days after final site stabilization** or after the temporary measures are no longer needed, unless otherwise authorized by the Virginia Erosion and Sedimentation Control Program (VESCP) authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.	3.5.12.4		x

FERC Regulatory Document	Regulation	Description	Are there more stringent requirements or practices?		Description of more stringent requirements/practices	Reference in SWPPP	Where Requirement/Practice Applies	
			yes/no	If yes, list requirements/practices			USFS National Forest	Non-specific Area
FERC Procedures	VI.D: Post-Construction Maintenance And Reporting	1. Do not conduct routine vegetation mowing or clearing over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees within 15 feet of the pipeline with roots that could compromise the integrity of pipeline coating may be selectively cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in wetlands that are between HDD entry and exit points. 2. Do not use herbicides or pesticides in or within 100 feet of a wetland, except as allowed by the appropriate federal or state agency. 3. Time of year restrictions specified in section VII.A.5 of the Plan (April 15 – August 1 of any year) apply to routine mowing and clearing of wetland areas. 4. Monitor and record the success of wetland revegetation annually until wetland revegetation is successful. 5. Wetland revegetation shall be considered successful if all of the following criteria are satisfied: a. the affected wetland satisfies the current federal definition for a wetland (i.e., soils, hydrology, and vegetation); b. vegetation is at least 80 percent of either the cover documented for the wetland prior to construction, or at least 80 percent of the cover in adjacent wetland areas that were not disturbed by construction; c. if natural rather than active revegetation was used, the plant species composition is consistent with early successional wetland plant communities in the affected ecoregion; and d. invasive species and noxious weeds are absent, unless they are abundant in adjacent areas that were not disturbed by construction. 6. Within 3 years after construction, file a report with the Secretary identifying the status of the wetland revegetation efforts and documenting success as defined in section VI.D.5, above. The requirement to file wetland restoration reports with the Secretary does not apply to projects constructed under the automatic authorization, prior notice, or advance notice provisions in the FERC's regulations. For any wetland where revegetation is not successful at the end of 3 years after construction, develop and implement (in consultation with a professional wetland ecologist) a remedial revegetation plan to actively revegetate wetlands. Continue revegetation efforts and file a report annually documenting progress in these wetlands until wetland revegetation is successful.	yes	GWNF LRMP FW-111 GWNF LRMP FW-116	FERC Procedures VI.D: Wetland Crossings, Post-Construction Maintenance And Reporting states: "Do not use herbicides or pesticides in or within **100 feet of a wetland**...." GWNF LRMP FW-111 states: No herbicide is **aerially applied within 200 horizontal feet, nor ground-applied within 30 horizontal feet**, of lakes, wetlands, perennial or intermittent springs and streams. No herbicide is applied within 100 horizontal feet of any public or domestic water source. Selective treatments (which require added site-specific analysis and use of aquatic-labeled pesticides) may occur within these buffers only to prevent significant environmental damage such as non-native invasive plant infestations. Buffers are clearly marked before treatment, so applicators can easily see and avoid them. GWNF LRMP FW-116 state: Herbicide **mixing, loading, or cleaning areas** in the field are not located **within 200 feet** of private land, riparian corridors, open water or wells, or other sensitive areas. All other requirements in FERC Procedures VI.D: Wetland Crossings, Post-Construction Maintenance And Reporting are most stringent.	3.5.12 Appendix R Restoration & Rehabilitation Plan	x	
FERC Procedures	VII: Hydrostatic Testing							
FERC Procedures	VII.A: Notification Procedures and Permits	1. Apply for state-issued water withdrawal permits, as required. 2. Apply for National Pollutant Discharge Elimination System (NPDES) or state-issued discharge permits, as required. 3. Notify appropriate state agencies of intent to use specific sources at least 48 hours before testing activities unless they waive this requirement in writing.	no	NA	NA	3.1.11		x
FERC Procedures	VII.B: General	1. Perform 100 percent radiographic inspection of all pipeline section welds or hydrotest the pipeline sections, before installation under waterbodies or wetlands. 2. If pumps used for hydrostatic testing are within 100 feet of any waterbody or wetland, address secondary containment and refueling of these pumps in the project's Spill Prevention and Response Procedures. 3. The project sponsor shall file with the Secretary before construction a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location. This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.	no	NA	NA	3.1.11		x
FERC Procedures	VII.C: Intake Source and Rate	1. Screen the intake hose to minimize the potential for entrainment of fish. 2. Do not use state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and/or local permitting agencies grant written permission. 3. Maintain adequate flow rates to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users. 4. Locate hydrostatic test manifolds outside wetlands and riparian areas to the maximum extent practicable.	no	NA	NA	3.1.11		x
FERC Procedures	VII.D: Discharge Location, Method, and Rate	1. Regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour, suspension of sediments, or excessive streamflow. 2. Do not discharge into state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and local permitting agencies grant written permission.	no	NA	NA	3.1.11		x