

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY
d/b/a Dominion Virginia Power

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CASE NO. PUE-2016-00078

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For approval and certification of
Carson-Rogers Road 500 kV Transmission Line
Rebuild under Va. Code § 56-46.1 and the Utility
Facilities Act, Va. Code § 56-265.1 *et seq.*

REPORT OF HOWARD P. ANDERSON, JR., HEARING EXAMINER

March 10, 2017

On August 18, 2016, Virginia Electric and Power Company d/b/a Dominion Virginia Power (“Dominion” or “Company”) filed with the State Corporation Commission (“Commission”) an application for approval and certification of transmission facilities in connection with the proposed rebuild of the 500 kilovolt (“kV”) Carson-Rogers Road Line (“Application”). Dominion filed the Application pursuant to § 56-46.1 of the Code of Virginia (“Code”) and the Utility Facilities Act, Code § 56-265.1 *et seq.*

According to the Application, the Company proposes to rebuild, entirely within its existing right-of-way (“ROW”), approximately 27.5 miles of its existing 500 kV Carson-Rogers Road Line #585 (“Carson-Rogers Road Line” or “Line #585”) in Dinwiddie, Sussex, and Greensville Counties from Structure #3 outside Carson Switching Station (“Carson Station”) to Structure #142 located at a point north of the junction of Line #585 and Line #570, approximately 0.9 mile northwest of the Company’s approved Rogers Road Switching Station (“Rogers Road Station”) in Greensville County which is currently under construction (collectively, the “Rebuild Project”).¹

On September 9, 2016, the Commission issued an Order for Notice and Comment which, among other things, (i) docketed the Application; (ii) established a procedural schedule for the publication of public notice; (iii) provided for the filing of written comments, notices of participation and requests for a hearing; (iv) directed the Staff of the Commission (“Staff”) to investigate the Application and file a report containing the Staff’s findings and recommendations; and (v) appointed a Hearing Examiner to conduct all further proceedings in this matter.

No public comments or notices of participation were filed.

SUMMARY OF THE RECORD

The Company’s Direct Testimony

The Company presented the direct testimony of the following employees: Sarah Rana, an engineer III in the Electric Transmission Planning Department; Robert J. Shevenock, II, consulting engineer in the Electric Transmission Line Engineering Department; William Chase Bland,

¹ Application at 2, Appendix at 1.

conceptual engineer in the Substation Engineering Department; and Amanda M. Mayhew, senior siting & permitting specialist in the Electric Transmission Right-of-Way Department.

Ms. Rana discussed the need for and benefits of the proposed rebuild. She testified that in order to comply with mandatory North American Electric Reliability Corporation (“NERC”) Reliability Standards and PJM Reliability Standards, Dominion proposes to rebuild, entirely within its existing ROW, approximately 27.5 miles of its existing 500 kV Carson-Rogers Road Line in Dinwiddie, Sussex, and Greensville Counties from Structure #3 outside Carson Switching Station located in Dinwiddie County, to structure #142 located at a point north of the junction of Line #585 and Line #570 (“Rogers Road Terminus”), approximately 0.9 mile northwest of the Company’s approved Rogers Road Switching Station in Greensville County currently under construction.²

Ms. Rana stated that the proposed Rebuild Project is needed to assure the Company can continue to provide reliable electric service consistent with mandatory NERC Reliability Standards for transmission facilities and the Company’s transmission planning criteria. The 500 kV Carson-Rogers Road Line provides service to the Company’s transmission system in the western and central regions of Virginia, and is a critical component of the electric transmission grid that serves Virginia, North Carolina, West Virginia, the District of Columbia, Maryland, and beyond. Ms. Rana explained that the Rebuild Project resolves a generator deliverability criteria violation identified by PJM. The Company confirmed the PJM-identified Generator Deliverability N-1 violation on the 500 kV Carson-Rogers Road Line caused by the loss of the 500 kV Carson-Rawlings Line #511 (“Line #511”). The violation overloads Line #585 well above its thermal capacity, and the Rebuild Project is necessary to resolve this violation. While the generator deliverability violation is projected to occur in 2020, the Company is working to schedule outages starting in the fall of 2017 to accommodate completion of construction by December 2018. Furthermore, the Rebuild Project addresses the reliability issues associated with the aging infrastructure comprising Line #585, as described in the testimony of Company witness Shevenock. Ms. Rana concluded that failure to address the significant inherent corrosion and deterioration associated with COR-TEN® weathering steel lattice towers would ultimately limit the Company’s ability to maintain reliable transmission service to its customers.³

Ms. Rana advised that four alternatives were submitted to PJM, however none of the alternatives addressed the end-of-life criteria considerations for Line #585. Ms. Rana stated that the proposed Rebuild Project has been reviewed through the PJM Southern Sub-Regional Committee and the PJM Transmission Expansion Advisory Committee (“TEAC”) and approved by the PJM Board of Managers. Demand side resources were not considered because the driver for this project is generator deliverability, in addition to addressing aging infrastructure.⁴

Mr. Shevenock described the transmission engineering considerations driving the need for the Rebuild Project and the design characteristics of the proposed replacement transmission line. In addition to the need to comply with NERC Reliability Standards, Mr. Shevenock stated the Rebuild Project also provides the benefit of replacing aging transmission facilities. Mr. Shevenock explained that Line #585 went into service in or about 1972. This was shortly after completion of

² Rana Direct Testimony, at 2.

³ *Id.* at 5, 6.

⁴ *Id.* at 7.

Dominion's 500 kV original loop, one of the first 500 kV transmission systems built in North America. Line #585, and its associated facilities, will approach the end of their service lives and require replacement with new facilities in order to maintain reliable service.⁵ Mr. Shevenock stated that the existing lattice towers were made of a high strength low-alloy material introduced in the 1960s called weathering steel or COR-TEN®. Although the COR-TEN® product was advertised as a superior product designed for longevity, requiring less maintenance (no painting) over its projected 60-year life period, COR-TEN® has been found to have inherent corrosion problems that continuously deteriorate the steel members in lattice-type towers. In the mid-1970s, the Company maintenance crews began to notice pack-out at joint locations and began to monitor these conditions. The term "pack-out" describes deformation of tower joints caused by the in-place corrosion of the steel. This pack-out is known to cause member cracking and fastener failure due to the deformation resulting from the phenomenon. During the 1980s, the Company discovered severe pack-out growth and pronounced rust in splice areas, which indicated continued corrosion and the potential for severe loss of the steel section.⁶

Mr. Shevenock explained that, in connection with another case the Company retained Quanta Technology ("Quanta"), a leading expert in transmission and distribution solutions, to investigate the condition of the Company's original 500 kV COR-TEN® towers and the need to rebuild them. Quanta reported that the deteriorated condition of the 500 kV original loop was due to the inherent corrosion properties of COR-TEN® steel; that the Company's program of monitoring, maintenance and repair was appropriate; and that the infrastructure had reached a point where major replacement was the prudent approach. The Commission initially approved the rebuild of the Carson-Rawlings Line ("Line #551") in 2011, which is now complete. Since that time, the Commission has approved or is pending approval in the rebuild of other segments of the 500 kV original loop.⁷

Mr. Shevenock described the design of the transmission lines for the proposed Rebuild Project as having three triple-bundled 1351.5 aluminum-conductor steel-reinforced ("ACSR") phase conductors, arranged with two fiber optic shield wires. The Rebuild Project would uprate the existing single circuit 500 kV Line #585 to a transfer capability of 3424 to 4330 megavolt-amperes ("MVA"). Mr. Shevenock explained that the proposed lattice towers are similar to the existing weathering steel lattice towers and would allow the rebuild an uprate of the existing 500 kV line in the existing ROW. The estimated cost for the proposed rebuild project is approximately \$52.9 million, with approximately \$52.6 million for transmission line construction work and approximately \$266,000 for station work at Carson Station. These cost estimates are in 2016 dollars. Mr. Shevenock noted that the Rebuild Project has been revised since its initial submission to PJM to incorporate refined forestry costs, currently estimated to be approximately \$7.2 million. Mr. Shevenock stated that the in-service date for the Rebuild Project is anticipated to be December 2018 with an estimated construction time of 12 months which will include time for engineering, material procurement, and construction permitting.⁸

⁵ Shevenock Direct Testimony, at 2, 3.

⁶ *Id.* at 3, 4.

⁷ *Id.* at 5, 6.

⁸ *Id.* at 6, 7.

the existing Line #585 and the proposed Rebuild Project, with one dwelling located within 100 feet of the centerline.¹⁴

The Department of Environmental Quality (“DEQ”) Coordinated Review

Ms. Mayhew advised that DEQ will conduct an environmental and permitting review of the Company’s Application, including solicitation of comments from relevant agencies. Ms. Mayhew pointed out the Company developed a DEQ supplement (attached to the Application) that contains information on impacts and the status of agency review with respect to the following:

- Air quality;
- Water source and discharge of cooling waters;
- Tidal and non-tidal wetlands;
- Solid and hazardous waste;
- Natural heritage, threatened and endangered species;
- Erosion and sediment control;
- Archaeological, historic, scenic, cultural or architectural resources;
- Chesapeake Bay preservation areas;
- Wildlife resources;
- Recreation, agricultural and forest resources;
- Pesticides and herbicides;
- Geology and mineral resources; and
- Transportation infrastructure.

Ms. Mayhew pointed out that, because the Rebuild Project is located entirely within the existing ROW, impacts would be reasonably minimized. Ms. Mayhew stated the appropriate environmental studies would be made of sensitive areas before construction commenced. Clearing and maintenance of the ROW will be done in such a manner that low buffers of vegetation will be retained as much as possible. Ms. Mayhew advised, after approval by the Commission, the Company would apply for necessary permits and conduct necessary environmental surveys pertaining to wetland, cultural resources and rare species. After these surveys are complete, any required applications to the Corps of Engineers, Virginia Marine Resources Commission, DEQ and the Virginia Department of Transportation will be submitted.¹⁵

Staff Report

The Staff Report provided by Armando J. De Leon and Nicholas M. Upton gave a detailed overview of the proposed Rebuild Project including its major components: (i) ROW and easements; (ii) proposed station improvements; (iii) conductors and support structures; (iv) the proposed construction schedule; and (v) the estimated cost of approximately \$52.9 million.

¹⁴ *Id.* at 3, 4, 7.

¹⁵ *Id.* at 7, 8.

Staff reviewed the information, provided in the Company's Application, regarding the Generator Deliverability Test ("GDT")¹⁶ criteria violation and verified the power flow studies included in the Application as well as those provided in response to interrogatories. Based on these reviews, Staff reported that it determined the Company's analyses are reasonable and that the Company has demonstrated a need for the proposed Rebuild Project.¹⁷

Staff addressed the Company's assertion that Line #585 is experiencing structural degradation (corrosion of its COR-TEN® towers) and its end-of-life criteria by stating that it agrees with the Company's assessment, that while re-conductoring alone is sufficient to resolve the Company's GDT violation, it does not resolve the Company's long-term need to meet the requirement of its transmission planning criteria related to aging infrastructure. Accordingly, Staff stated that it does not oppose the replacement of Line #585's structures as a component of the Rebuild Project because this would provide the added benefit of addressing projected end-of-life criterion violations.¹⁸

Staff acknowledged the Company provided four alternative solutions to resolve the generator deliverability violation. Staff concluded that, since each alternative would require the construction of a new transmission line in a new ROW, each alternative would have a greater environmental impact than the proposed Rebuild Project. Moreover, none of the four alternatives would address the structural deterioration of Line #585. Based on the foregoing analysis, Staff agreed that the Company reasonably rejected the four alternatives.¹⁹

Staff pointed out that, while no public comments were received in this proceeding, the Commission has received significant public comment in other recent rebuild cases regarding the visual impacts of galvanized steel used in the replacement towers. Staff stated that, if the Commission determines that the Company should mitigate the visual impacts of galvanized steel in this proceeding, the use of the factory-dulled galvanized steel structures may be a cost-effective and reasonable means for such mitigation.²⁰

Company Rebuttal

The Company presented the rebuttal testimony of Amanda Mayhew, Robert Smith, Douglas Keesee, and Robert Shevenock.

Ms. Mayhew stated that, while the Company appreciates Staff's thorough review of its Application and recommendation for approval, the Company opposes Staff's proposed option to use factory-dulled galvanized steel for the tower structures. Ms. Mayhew pointed out that the Company communicated its plans for the Rebuild Project through its notice requirements and the Company held three open houses advertised in local papers to inform the public about the Rebuild Project.

¹⁶ The GDT is a criterion established by PJM to test the strength of a transmission system in terms of its ability to reliably deliver the output of generators located within a specified area to the rest of the PJM system during peak load. The GDT ensures that there is sufficient transmission capacity in all areas of the system to export an amount of generation at least equal to the amount of certified generation in each area. Staff Report, at 5, 6.

¹⁷ Staff Report, at 8.

¹⁸ *Id.* at 10, 11.

¹⁹ *Id.* at 11-13.

²⁰ *Id.* at 21, 22.

The Company also met with the County Administrators of the three counties impacted by the project prior to the open houses.²¹

Ms. Mayhew further pointed out that the Company has installed galvanized 500 kV lattice structures in the vicinity of the Rebuild Project within the last few years, and she is not aware of any concerns expressed by the public or county officials regarding the initial reflectivity of these steel lattice towers since installation.²²

Ms. Mayhew stated that she reviewed the DEQ Report and the Company has no objections or concerns with the summary of recommendations. Ms. Mayhew confirmed the Company will coordinate further with the U.S. Fish and Wildlife Service and the Virginia Department of Game and Inland Fisheries regarding their recommendation to perform mussel surveys and relocations.²³

Robert Smith, a consulting engineer in the Company's electric transmission department, explained that he has the responsibility of performing and coordinating the structural and foundation design and analysis of Company transmission lines, substations, and communication structures.²⁴ Mr. Smith stated the Company proposes to use new single-circuit galvanized steel lattice tower structures because they are cost-effective and similar in appearance to the existing structures. Further, Mr. Smith explained that the Company has used the hot dip galvanized coating since approximately 1985 because of its proven performance in protecting and extending the service life of the steel used for the transmission towers.²⁵

Mr. Smith pointed out that both independent and Company observations indicate the reflectivity of the galvanized steel will naturally start to diminish once the galvanized coating is exposed to the natural environment. Mr. Smith stated that a noticeable visual appearance of the natural weathering (oxidization) and dulling process would typically be observed within six to twelve months of exposure. Mr. Smith reported that at least one independent source had observed that the reflectivity of a newly-dipped galvanized coating dropped by 20 percent within one week of exposure to the natural environment and can drop by 60 to 67 percent within two to four years of exposure.²⁶

Mr. Smith described the typical process manufacturers use to chemically dull the finish of transmission towers as follows: (i) clean the steel; (ii) apply a chemical solution of zinc phosphate or phosphoric acid; (iii) thorough water rinsing of the steel; and (iv) sealant application or passivation (the process to prevent white rust formation while the steel is shipped and stored). Mr. Smith stated that this process must be completed under strict parameters to ensure the galvanized coating on the steel is not compromised. Mr. Smith expressed concern with the manufacturer's ability to ensure proper application and removal of the chemical dulling treatment on the galvanized steel. Specifically, Mr. Smith expressed concern that if the required procedures are completed improperly, the chemical dulling treatment could compromise the galvanized coating

²¹ Mayhew Rebuttal, at 2, 3.

²² *Id.* at 4.

²³ *Id.*

²⁴ Smith Rebuttal, at 1.

²⁵ *Id.* at 3.

²⁶ *Id.* at 3, 4.

on the steel and negatively impact its service life. Mr. Smith pointed to a further concern that if there is non-uniformity in the application of the chemical dulling process, there would be a difference in reflectivity which could result in a greater visual impact than if the galvanized steel were allowed to weather and dull naturally.²⁷

Mr. Smith then discussed what he believed to be additional maintenance requirements associated with chemically-dulled galvanized steel in comparison to naturally-dulled galvanized steel. Mr. Smith explained that with either naturally-dulled galvanized steel or chemically-dulled galvanized steel, the Company would need to apply a zinc-rich paint covering once the hot dip galvanized coating approaches the end of its service life. Mr. Smith stated that the vast majority of naturally-dulled galvanized lattice towers in the Company’s service territory usually require one zinc-rich paint treatment during the service life of a transmission line and in some instances no additional treatments are necessary. Mr. Smith advised that with chemically-dulled galvanized steel, he expects additional paint treatments would be necessary because of the likelihood the original galvanized coating would experience a reduced service life from the chemical dulling process. Further, Mr. Smith anticipated a lower service life with each subsequent zinc-based paint treatment due to the difficulty in obtaining an adequately adherent surface with each subsequent paint application.²⁸

Mr. Smith reported an updated incremental project cost of \$34,000 for the chemically-dulled galvanized steel.²⁹ Mr. Smith concluded by stating the Company does not propose and does not support, the use of any chemical-dulling process for this Rebuild Project.³⁰

Douglas Keese, a transmission strategic projects advisor for the Company, began his testimony by noting the Company’s planned in-service date for the Rebuild Project as December of 2018. Mr. Keese explained that prior to de-energizing and commencing a rebuild of a 500 kV line, the Company must obtain permission from PJM to schedule an outage and to request PJM schedule a window, or windows, of time in which the construction can be completed. In this regard, the Company requested and received permission to de-energize Line #585 starting September 17, 2017, and ending May 31, 2018. As stated in the Application,³¹ the Company needs an estimated 12 months for engineering, material procurement, and construction permitting, and an estimated 12 months to construct the Rebuild Project. While there may be some overlap of the two 12-month periods, Mr. Keese explained that the 12-month period for construction will be segmented. However, Mr. Keese explained that, if the Company cannot start construction on schedule, it is not known when another set of outage windows will be available from PJM. In addition, Mr. Keese stated that missing the outage window may also impact the timing of other work on the Company’s 500 kV transmission system.³²

Mr. Keese pointed out that Staff’s suggestion, regarding chemically-dulled galvanized steel for the transmission towers, introduces uncertainty into the Company’s ability to construct the

²⁷ *Id.* at 4, 5.

²⁸ *Id.* at 5, 6.

²⁹ *Id.* at 8.

³⁰ *Id.* at 11, 12.

³¹ Section I.F of the Appendix; Keese Rebuttal, at 3, 4.

³² Keese Rebuttal, at 3, 4.

Rebuild Project within the currently approved PJM outage window. Specifically, Mr. Keesee advised that the manufacturer, SAE Towers, Ltd., stated it could deliver factory-dulled galvanized steel no earlier than June 30, 2017, provided the Company directs the manufacturer to use the factory-dulled process no later than March 24, 2017. Therefore, if the Commission were to direct the use of chemically-dulled steel, the Company respectfully requests an order from the Commission by March 24, 2017.³³

Mr. Shevenock provided the following clarification to Staff’s Report:

- On page 13 of Staff’s Report the statement that “additional 0.5 miles of the line” is “to a point south of the Rogers Road Terminus.” Mr. Shevenock noted that the “additional 0.5 miles of the line” includes a section of line from the backbone within the Carson station to structure number 585/3 and a section of line from the Rogers Road Terminus to structure number 585/143; and
- On page 15 of Staff’s Report, the statement that “[a]ll structures would have a width of 73 feet at the cross-arm.” Mr. Shevenock notes that this is a correct statement with the exception of three non-typical structure types (light angle, medium angle, and heavy angle/deadend) that are not depicted in the Appendix Attachments that have cross-arm widths of 73.4 feet for the three light angle structures, 75 feet for the three medium angle structures, and 92.75 feet for the two large angle structures and one deadend structure.³⁴

DISCUSSION

Need

I find there is a definite need for the proposed Rebuild Project. Transmission studies conducted by PJM identified several network violations projected to occur in 2020. These studies determined Line #585 is projected to be in violation of the generator deliverability criteria following the loss of Line #511.³⁵ The Company confirmed this N-1 violation on Line #585, caused by the loss of Line #511, in the 2020 Regional Transmission Expansion Plan (“RTEP”). This violation overloads Line #585 above its thermal capacity, thus requiring the Rebuild Project.

Staff reviewed the information provided in the Company’s Application regarding the GDT, and has reviewed and verified the power flow studies included in the Application as well as those provided in response to interrogatories. Based on its review, Staff determined that the Company’s analyses are reasonable and that the Company has demonstrated a need for the project.³⁶

In addition to the generator deliverability criterion, the Company has shown that Line #585 is approaching its end-of-life due to significant corrosion of its COR-TEN® lattice towers. In response to Staff Interrogatory No. 1-11, the Company stated that a significant inspection and

³³ *Id.* at 5.

³⁴ Shevenock Rebuttal, at 2.

³⁵ Application Appendix, at 4.

³⁶ Staff Report, at 8.

rehabilitation effort took place on Line #585 during the period from 2011 to 2012, and of the 140 structures inspected, 138 required some level of repair. The repairs consisted of tower steel member replacement, tower base replacement, joint cleaning, bolt replacement, and minor concrete foundation rehabilitation.³⁷ The replacement of aging and failing infrastructure serves as an additional benefit of the Rebuild Project.

Alternative Solutions

I find there are no reasonable or viable alternatives to the Company's proposed Rebuild Project. Any alternative to the Rebuild Project would require the construction of new 500 kV facilities in a new ROW at considerable additional cost and environmental impact. Furthermore, none of the alternatives would address the need to rebuild Line #585.

Economic Development

I find the proposed Rebuild Project will have a positive impact on economic development, in both the local area and across the Company's transmission system, by strengthening system reliability across the region.

DEQ Coordinated Environmental Review

In accordance with paragraph three of the Department of Environmental Quality – State Corporation Commission Memorandum of Agreement Regarding Coordination of Reviews of the Environmental Impact of the Proposed Electric Generating Plants, dated August 14, 2002, and at the request of Staff, DEQ coordinated an environmental review of the proposed Rebuild Project by the various state and local agencies responsible for reviewing the environmental impacts of electric utility projects. The results of DEQ's review are contained in a report dated October 27, 2016. The DEQ Report summarizes the proposed Rebuild Project's potential impacts on natural resources, makes recommendations for minimizing those impacts, and outlines the Company's responsibilities for compliance with legal requirements governing environmental protection.

I find the recommendations contained in the DEQ Report are reasonable and should be implemented by the Company. With the recommendations and procedures provided by DEQ, I find the proposed Rebuild Project will have a reasonably minimal impact on the environment and scenic resources consistent with § 56-46.1 of the Code. The Company does not have any objections or concerns with the summary of the DEQ recommendations.³⁸

EMF

From August 15, 1984, to October 31, 2000, the Virginia Department of Health ("VDH") monitored the ongoing research on the possible health effects of EMF and ultimately concluded there was no causal connection between EMF and cancer in humans. Specifically, On October 31, 2000, the VDH reported:

³⁷ Id. at 9.

³⁸ Mayhew Rebuttal, at 4.

. . . there is no conclusive and convincing evidence that exposure to extremely low frequency EMF emanated from nearby high voltage transmission lines is causally associated with an increased incidence of cancer or other detrimental health effects in humans. Even if it is assumed that there is an increased risk of cancer as implied in some epidemiologic studies, the empirical relative risk appears to be fairly small in magnitude and the observed association appears to be tenuous. The studies published in the literature lack clear demonstration of a cause and effect relationship as well as a definitive dose-response gradient. A two- to three-fold increase in relative risk of certain cancers observed in some studies is within the range where experimental bias or confounding factors cannot be completely ruled out.

Evidence from the laboratory studies has thus far failed to confirm that exposure to EMF causes cancer in experimental animals. Laboratory experiments have also failed to show how EMF could initiate or promote the growth of cancer. The results of both *in vivo* and *in vitro* experimental studies conducted so far do not lend support to an association between exposure to EMF and cancer.

Furthermore, scientific proof of a causal association is established using multiple criteria, only one of which is epidemiologic association. Other important criteria in confirming causality (including strength of association, consistency and specificity of observations, appropriate temporal relationship, dose-response relationship, biological plausibility, and experimental verification) have not been satisfied for the implicit adverse effects of power line frequency EMF.³⁹

Expert panels formed by national and international scientific agencies have evaluated the scientific research related to health and power-frequency EMF and provided conclusions that form the basis of guidance to governments and industries. It is the general scientific consensus of the health agencies reviewing this research that, at levels associated with the operation of the proposed transmission line, or other common sources of EMF in the environment, the research does not support the conclusion that EMF causes any long-term, adverse health effects.

Tower Finish

No concern has been expressed by the public pertaining to the reflectivity of the new galvanized transmission structures in this proceeding. Due to the time constraints, incremental cost, and potential maintenance issues, I find that a chemical dulling process should not be required for this Rebuild Project. Once the galvanized steel is exposed to the natural environment, a natural dulling process will begin which will greatly reduce the reflectivity of the galvanized steel within a few years.

³⁹ Virginia Department of Health, *Monitoring of Ongoing Research on the Health Effects of High Voltage Transmission Lines*, Final Report (Oct. 31, 2000), at 20.

FINDINGS AND RECOMMENDATIONS

Based on the record in this proceeding, I find that:

1. The proposed Rebuild Project is justified by the public convenience and necessity;
2. The proposed Rebuild Project will maximize the use of existing right-of-way;
3. The recommendations contained in the DEQ Report are reasonable and should be adopted by the Commission as conditions of approval;
4. The proposed Rebuild Project is essential to support ongoing economic development and overall system reliability;
5. The proposed Rebuild Project is not suitable for underground construction; and
6. The proposed Rebuild Project, with its use of existing right-of-way and tower design, reasonably mitigates the projects overall impact and generally improves the aesthetics of the proposed Rebuild Project as required by Section 10 of HB 1319.

In accordance with the above findings, **I RECOMMEND** the Commission enter an order that:

1. **ADOPTS** the findings set forth above;
2. **GRANTS** the Company’s Application to construct the proposed transmission line and station improvements; and
3. **DISMISSES** this case from the Commission’s docket of active cases.

COMMENTS

There are no respondents; therefore, there will be no comment period.

Respectfully submitted,


 Howard P. Anderson, Jr.
 Hearing Examiner

Document Control Center is requested to mail a copy of this Report to: Lisa S. Booth, Esquire, Dominion Resources Services, Inc., Law Department, 120 Tredegar Street, RS-2, Richmond, Virginia 23219; Bernard L. McNamee, Esquire, William G. Bushman, Esquire, and Anne H. Andrews, Esquire, McGuireWoods LLP, Gateway Plaza, 800 East Canal Street, Richmond, Virginia, 23219; and C. Mead Browder, Jr., Senior Assistant Attorney General, Office of the Attorney General, Division of Consumer Counsel, 202 North 9th Street, 8th Floor, Richmond, Virginia, 23219-3424.