



1. The Letter of Notification process is inadequate for review of major transmission projects like the Mansfield Line.
2. ATSI's filing is deficient because it fails to explain the need for the proposed Mansfield Line and fails to present sufficient details necessary to make that determination.
3. The North American Electric Reliability Corporation ("NERC") standards are changing, and ATSI does not explain which standards were used or how those changing standards would affect the proposed line.
4. ATSI does not provide sufficient detail related to its load flow study.
5. The use of operating procedures is not accurately or completely portrayed in ATSI's filing.
6. In making a determination on the Mansfield Line, the Board should consider that the transmission system reinforcement needs are in a state of flux.

## **BACKGROUND**

ATSI filed a pre-application notification letter for the Mansfield Line on June 1, 2012, originally intending for the line to go through the normal Certificate Application process as described in Ohio Administrative Code ("OAC") § 4906-15. Shortly after this pre-application, however, the Ohio legislature passed SB 315, which requires the Board to adopt rules providing for "accelerated review of an application for a construction certificate for . . . [a]n electric transmission line that is . . . [n]ecessary to maintain reliable electric service as a result of the retirement or shutdown of an electric generating facility within the state." Ohio Revised Code ("ORC") § 4906.03(F). The Board has initiated rulemaking proceedings to address this accelerated review, but in the meantime has allowed qualifying lines to go through the expedited Letter of Notification ("LON") process. *In the Matter of the Ohio Power Siting Board's Review of Chapters 4906-1, 4906-5, 4906-7, 4906-9, 4906-11, 4906-13, 4906-15, and 4906-17 of the Ohio Administrative Code*, Case No. 12-1981-GE-BRO, Finding and Order (Sept. 4, 2012). The

LON process was previously reserved for simple lines such as those that are less than 125 kV and less than two miles in length.

ATSI was granted permission to transfer to the expedited LON process and filed its application November 9, 2012. According to the application, the new, single circuit 345 kV transmission line would extend approximately 114.5 miles between the Bruce Mansfield Substation in Beaver County, Pennsylvania, to the proposed new Glenwillow Switching Station in Glenwillow, Ohio. The new transmission facilities would cost in excess of \$130 million. *See* ATSI Application, page 37, Estimated Costs.

### **COMMENTS**

**1. The Letter of Notification process is inadequate for review of major transmission projects like the Mansfield Line.**

As explained below, the need determination for a major line, including load flow analysis, is a complicated and time-consuming process. This is just one reason why the LON process is largely inadequate when applied to major transmission projects such as the \$130 million, 114-mile 345 kV Mansfield Line. The LON process, which previously applied to only minor transmission lines, usually lasts only 63 days, includes less in-depth filing requirements, and does not involve an automatic hearing. *See* OAC § 4906-5-02 (explaining LON form, content, and processing); OAC § 4906-11-01 (explaining LON application requirements). Typically, a LON docket will only include a short filing from the applicant and a two-to-three page report by Board Staff.<sup>1</sup>

This process is grossly inadequate to address the evaluation of major lines like the Mansfield Line. However, the Board has certain options to expand the review of these lines, even under the LON process, and it should consider those options in this case and others. First,

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<sup>1</sup> As an example, *see Yellow Creek 138 kV Extension*, Case No. 11-4805-EL-BLN.

SB 315 allows for a total of 180 days to make a determination on a line qualifying for the expedited review process.<sup>2</sup> While far from ideal, 180 days would allow the Board to adopt an appropriate procedural schedule and adequately evaluate many transmission projects. Second, pursuant to the Board rules addressing LONs, the Board may “[d]ocket its decision,” as it did in this case, and “may direct the applicant to furnish . . . additional information.” OAC § 4906-5-02(3)(a). Finally, the Board has the authority to “set the matter for hearing.” OAC § 4906-5-02(3)(a). In this case and others, the Board should take advantage of these procedural safeguards to ensure that major transmission lines are adequately reviewed.

**2. ATSI’s filing is deficient because it fails to explain the need for the proposed Mansfield Line and fails to present sufficient details necessary to make that determination.**

OAC § 4906-11-01(B)(2) requires an applicant, even under the expedited LON process, to provide “a statement explaining the need for the proposed” transmission line. In the case of an electric transmission line, ORC § 4906.10 explains that the Board “shall not grant a certificate for [its] construction . . . unless it finds and determines” a number of findings, including “[t]he basis of the need for the facility.” The Board also must make a determination that “the facility will serve the public interest, convenience, and necessity.” ORC § 4906.10. Especially given the high price tag associated with this proposed line, a thorough review of all the information is necessary to make these public interest and need determinations.

As explained more fully in the comments below, ATSI presents only generalizations about the need for the Mansfield Line, with no opportunity for interested parties to obtain access to specific details about this need. Without additional information, the Board cannot establish

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<sup>2</sup> The statute states that the Board must make a determination or suspend the application within ninety days. The suspension may last for an additional ninety days before a final determination must be made. ORC § 4906.03.

that this project is needed and in the public interest, and interested parties cannot meaningfully participate in the evaluation process. For example, in order to evaluate the need for the Mansfield Line, more details are needed regarding the load and resource assumptions incorporated into this need, about the contingencies that drive this need, about the costs and specific reliability performance of alternatives, and other related information. More is reasonably required to justify the need for new transmission facilities costing in excess of \$130 million.

At a minimum, the Board should require ATSI to provide the following information, which is essential to making a legitimate determination as to whether the Mansfield Line meets the need and public interest requirements set by law:

- a. Information related to the load flow analysis for the proposed Mansfield Line, including:
    - a. Peak load assumptions used
    - b. Facilities assumed to be in-service
    - c. Generating unit dispatch assumed
    - d. Thermal violations and the contingencies that produce them
    - e. Voltage violations and the contingencies that produce them
    - f. Scenarios that will not solve and the contingencies that produce them
    - g. Load flow model data reflecting the above
  - b. An explanation of how changing NERC standards may affect the evaluation of the Mansfield Line
  - c. A more thorough explanation of the available “operating procedures” and their ability to address system loads and contingencies
- 3. The North American Electric Reliability Corporation (“NERC”) standards are changing, and ATSI does not explain which standards were used or how those changing standards would affect the proposed line.**

As explained below, NERC sets mandatory transmission planning standards that apply to the determination of whether a proposed transmission line is needed. The Federal Energy Regulatory Commission (“FERC”) is currently considering changes to these standards. It is unclear from ATSI’s application which standards were used and whether the change in standards affects the evaluation of alternatives or any other aspect of the analysis. The Board should consider these changing standards and require ATSI to clarify these issues and supplement its application with an explanation of how these new standards affect the Mansfield Line.

NERC sets planning standards that are mandatory for bulk electric system (“BES”) facilities. These facilities include transmission lines, substation transformers, electric substations, and other facilities operating at a voltage of 100 kV or higher. NERC requires that the electric transmission system, along with the projected peak loads and expected resources, be studied under normal conditions (with no forced outages of transmission lines, substation transformers, substation busses, generating units, or other electric system components), and under contingency conditions (where one or more transmission lines, substation transformers, substation busses, generating units, or other electric system components experience a forced outage).

NERC’s mandatory transmission planning requirements are largely included in NERC Standards TPL-001-0.1, TPL-002-0b, and TPL-003-0a, which address planning requirements at projected peak loads five or more years into the future for (1) normal system conditions (with no system contingencies), (2) system conditions with all possible single contingencies, studied one at a time, and (3) system conditions with specified multiple contingencies.

Typically, under normal system conditions (no contingencies), all load-sensitive system elements, most typically transmission lines and substation transformers, will be loaded up to not

higher than their normal maximum capabilities,<sup>3</sup> and all substation busses will be within normal voltage limits. Under single contingency conditions, electric service will generally be maintained up to most firm loads, all load-sensitive system elements will be loaded up to not higher than their emergency maximum capabilities, and all substation busses will be within emergency voltage limits. Under multiple contingency conditions, firm loads may be dropped under certain conditions, but the electric system must not have a cascading outage, and those system elements remaining in service must be operating within emergency thermal and voltage limits. If reasonable planning assumptions are used in the modeling, as explained below, when system components are found to be loaded above the applicable capabilities, or are found to be at a voltage level outside the required range, this is typically referred to as a planning violation, which must be addressed before they actually occur.

FERC is currently considering a new NERC transmission system reliability standard, Standard TPL-001-2, which, when approved, will consolidate and replace the above referenced standards. It is unclear how these new standards may affect the alternatives analysis, planning violations, or any other aspect of the proposed Mansfield Line application. The Board should consider these issues and require ATSI to explain the effect these new standards will have on the proposed line.

#### **4. ATSI does not provide sufficient detail related to its load flow study.**

Load flow studies are used to study compliance with the NERC transmission planning standards and are run using commercially available computer models. These load flow models incorporate numerous assumptions about the future, including what the level of forecast peak loads will be, which projected transmission facilities will be in service, what generating units are

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<sup>3</sup> Typically referred to as thermal loading, since these operating capabilities are limited by the heat that a system component experiences as its loading increases.

expected to be in service, which generating units are actually operating, and at what level of output. By changing these assumptions, the reliability need for future system reinforcements, such as the proposed Mansfield Line, can be enhanced or diminished. Therefore, the information surrounding the load flow studies is extremely important to the Board's determination of the need for the proposed project, as required by statute, and ATSI provides little of this information in its filing.

The load flow model takes data that describes the electric system and calculates the amount of power flowing through each transmission line and through each substation transformer, as well as the voltage level of every substation bus. For a contingency study, the load flow model takes the component suffering the forced outage out of service and recalculates the loading of all remaining system components and the voltage of all substation busses. Depending on the system configuration, including loads and resources, that the model is trying to calculate load flows and voltages for, the model's calculations may refuse to converge, in which case it is said that the model did not solve. Such scenarios can indicate a potential for future system-wide voltage collapse and/or an electric system blackout.

The load flow model uses data representing an electric system of substation busses, the load served off of each such bus, the generating units connected to each such bus and the level of generation from each such unit, the connections between each substation bus (transmission lines) and the impedance of each such connection, and the presence of all transformers on any of the connectors between busses. The transmission system in the entire eastern part of the U.S. is electrically integrated and needs to be reflected in the modeling data used to model the transmission system in Ohio. Because of this, a large amount of data is needed to perform load flow studies.

In addition to the fact that ATSI failed to provide much of this important information, the Board should consider that additional time may be necessary to evaluate the information. Some of the data needed to run a load flow study is classified by FERC as critical energy infrastructure information (“CEII”). Therefore, access to this data is restricted and requires execution of a non-disclosure agreement. Because of this, gaining access to load flow model data and then actually using it to examine transmission planning requirements can be time-consuming.

The modeling of all single contingencies is a detailed process, but is achievable with modern models. However, the modeling of all required double contingencies can require the modeling of many thousands of scenarios, many with system adjustments required between the first two contingencies. Without much more detailed information from ATSI, the Board is faced with trying to access load flow data and run hundreds of hours of transmission system modeling to study the reasonableness of ATSI’s assertions within a wholly inadequate time frame. There is really no way for ATSI to prove a need for the proposed Mansfield Line, or for the Board or intervenors to determine whether the facilities are needed, unless these analyses are done. The Board should require ATSI to provide the necessary information and allow adequate time for the Board and intervenors to evaluate the data and meaningfully participate in the application evaluation process.

**5. The use of operating procedures is not accurately or completely portrayed in ATSI’s filing.**

ATSI mentions operating procedures as a means of dealing with system loads and contingencies prior to the completion of the proposed Mansfield Line but limits this discussion to manual load shedding. While manual load shedding is certainly a possibility in response to contingencies on the transmission system, it is not the only operating procedure available to ATSI, and in fact it may be one of the most onerous. Other available operating procedures, such

as redispatch of the generating units that are operating or reconfiguring the transmission system, do not necessarily involve loss of service to customers. The Board and intervenors should be given the opportunity to determine if operating procedures can maintain system reliability instead of the proposed Mansfield Line. ATSI should provide a complete accounting of the available operating procedures that could reduce or eliminate the need for the Mansfield Line, their costs to implement, and their pros and cons regarding system operation and reliability.

It is important to note that ATSI's admission that operating procedures are a means of dealing with system loads and contingencies prior to the completion of the Mansfield Line *may indicate that the project is not needed*. If operating procedures can eliminate any potential overloads, the need for the proposed line disappears.

Also, it should be recognized that NERC transmission system reliability planning requirements do not provide for service to customers to be maintained under all possible contingency scenarios. There are multiple contingency scenarios in which load shedding is the proper system design response to the multiple contingencies, and would be so, regardless of whether the Mansfield Line has been completed or not. As a result, if some NERC-allowed load shedding could eliminate any potential future issues, then there may not be any NERC violations that need to be addressed by the Mansfield Line. These questions, as well as the issues surrounding possible operating procedures, need to be vetted by the Board prior to approval of the Mansfield Line.

**6. In making a determination on the Mansfield Line, the Board should consider that the transmission system reinforcement needs are in a state of flux.**

Despite PJM's studying of the transmission system reinforcement needed to permit FirstEnergy's coal unit retirements since April 2012, PJM is still making changes to the new transmission lines it says are needed. For example, PJM recently said that the Toronto-Harmon

345 kV transmission line, which was previously thought to be needed to facilitate the FirstEnergy coal unit retirements, is now no longer needed in 2017. As addressed in PJM's Transmission Expansion Advisory Committee meeting documents dated December 13, 2012,<sup>4</sup> construction of a new 345 kV transmission line between the Toronto and Harmon substations is now not needed in 2017 based on current 2012 Regional Transmission Expansion Plan ("RTEP") assumptions. PJM intends to re-evaluate the need for this transmission in the near future using updated 2013 RTEP assumptions.

This is typical of transmission system planning, which does not reflect the design of a single plan so much as it reflects an on-going iterative process with constantly changing assumptions. The fact that PJM recently rejected the need for another major transmission line suggests that the Board should conduct a thorough, deliberate, and exacting review of the proposed Mansfield Line to determine whether it is really needed or whether a cheaper, less intrusive project should proceed instead. As explained above, in order to conduct this review, ATSI must provide more information and the Board should allow for adequate time to conduct the review.

## **CONCLUSION**

The Board should require ATSI to supplement its application and further address the issues discussed in these comments. A thorough review will likely require the Board to utilize close to the full 180 days allowed under statutes and Board rules. The Environmental Advocates appreciate the opportunity to comment on the proposed Mansfield Line and look forward to participating further in the Board's review process.

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<sup>4</sup> See PJM Transmission Expansion Advisory Committee Meeting Materials, Attachment A, page 66 (December 13, 2012).

Respectfully submitted,

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## CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing Comments submitted on behalf of the Environmental Law & Policy Center, the Ohio Environmental Council, and the Sierra Club was served by electronic mail, upon the following Parties of Record, this 27<sup>th</sup> day of December, 2012.

/s/ Nicholas McDaniel

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