

A. ELECTROMAGNETIC FIELD STUDY

The estimated electromagnetic field (EMF) levels for the Hempstead Substation will be significantly lower than the magnetic field “prudence avoidance” health standard set forth by the New York State Public Service Commission (NYSPSC) for EMF exposure. According to the NYSPSC’s Statement of Interim Policy on Magnetic Fields of Major Electric Transmission Facilities (issued and effective September 11, 1990), the standard for magnetic field is 200 milligauss (mG).

The potential EMF impact of the substation equipment associated with the Proposed Action (Phase I and Phase II) has been evaluated relative to the EMF levels modeled for the Kings Highway Substation. For comparison purposes, the Kings Highway Substation is a 138kV substation containing two 138kV transmission circuits, six 138kV gas circuit breakers, three 138/13.8kV 33MVA transformers, and three switchgears with a capacity to connect a total of eleven 13.8kV feeders. In contrast, at the completion of the Proposed Action, the Hempstead Substation will consist of two 69kV transmission circuits, two gas circuit breakers, two 69/13.8kV 33MVA transformers, and two switchgears with a capacity to connect a total of five 13.8kV feeders. Thus, the Kings Highway Substation will operate at a significantly higher capacity as compared to the Proposed Action, and accordingly will have higher EMF levels, but still within acceptable health standards set forth by the NYSPSC. Therefore, the EMF levels of the Proposed Action will be lower than the estimated EMF levels at Kings Highway Substation and will also be within acceptable health standards set forth by the NYSPSC.

The EMF study that was undertaken for the Kings Highway Substation determined that the maximum EMF levels, at the fence line 60 feet away from the substation equipment, will be 56.8 mG, and that EMF levels exponentially decline as the distance away from the substation equipment increases. The closest residential locations to the Substation Property are a four-story residential apartment building and a single-family residence, both located approximately 65 feet from the proposed substation equipment. Therefore, given that these distances are slightly greater than the distance used to calculate the expected EMF levels for the Kings Highway Substation, the expected maximum EMF levels at the four-story residential building and the one-story residence will be similar to, or slightly less than 56.8 mG. The Electric and Magnetic Field Assessment for the Kings Highway Substation is provided in Appendix B for reference purposes.

The potential EMF impact of the overhead transmission line was only evaluated for Phase II, as Phase I did not include any overhead transmission. The potential EMF of the overhead transmission has been evaluated relative to the EMF levels modeled for the West Bartlett Substation. For comparison purposes, the West Bartlett Substation has, and Phase II of the Proposed Action will have, an overhead 69kV transmission circuit. The EMF study that was undertaken for the West Bartlett Substation determined that the peak load maximum EMF level immediately below the overhead 69kV transmission circuit will be 10.0 mG. Since there is no difference between the West Bartlett Substation 69kV overhead transmission circuit and the Proposed Action’s 69kV overhead transmission circuit relative to EMF levels, the peak load EMF level immediately below Phase II’s 69kV transmission circuit will be approximately the

same as at West Bartlett (approximately 10.0 mG). The Electric and Magnetic Field Assessment for the West Bartlett Substation is provided in Appendix B for reference purposes.

The potential EMF impact of the underground transmission and underground distribution portions of the Proposed Action have been evaluated relative to the EMF levels modeled for the Berry Street Substation. The potential EMF impact of the underground transmission was only evaluated for Phase I of the Proposed Action, as Phase II will not include underground transmission. The potential EMF impact of underground distribution was evaluated for both Phase I and Phase II of the Proposed Action, as both phases include underground distribution. The EMF study that was undertaken for the Berry Street Substation determined that the peak load maximum EMF level immediately above the underground 69kV transmission circuit will be 28.6 mG. Since there is no difference between the Berry Street Substation 69kV underground transmission circuit and the Proposed Action's 69kV underground transmission circuit relative to EMF levels, the peak load EMF level immediately above the Proposed Action's 69kV transmission circuit will be approximately the same as at Berry Street (approximately 28.6 mG). The Electric and Magnetic Field Assessment for the West Bartlett Substation is provided in Appendix B for reference purposes.

The underground 13kV distribution feeders for Phase I and Phase II of the Proposed Action operate at a lower voltage than the 69kV underground transmission circuit installed as part of Phase I, and therefore will have EMF levels lower than 28.6 mG.

The potential EMF impact of the overhead 13kV distribution portions of the Proposed Action was evaluated for both Phase I and Phase II, as both phases include overhead distribution. The 13kV overhead distribution will operate at a lower voltage than the overhead 69kV transmission portions of the Proposed Action, and therefore will have EMF levels lower than 10.0 mG.

The potential cumulative EMF impact of areas where the Phase II overhead transmission line (approximately 10.0 mG), and the Phase I underground transmission line installed during Phase I (approximately 28.6 mG) overlap is anticipated to result in an EMF of less than the sum (approximately 38.6 mG) of the two transmission circuits.

Based on a comparative analysis of the Kings Highway Substation, Berry Street Substation and West Bartlett Substation EMF Assessments that involved projects operating at equal or higher capacities and equal or higher voltages, the predicted EMF levels from Phase I and Phase II of the Proposed Action would be well below the 200 mG threshold established by the NYSPSC and would not result in any significant adverse environmental impacts.

B. NOISE STUDY

A Noise Impact Assessment Study for the Proposed Action was undertaken in October 2017 to evaluate the potential noise impact associated with full implementation of the Proposed Action (Phase I and Phase II), including the installation of two 69/13kV transformers.

Existing ambient noise levels were measured by continuous noise monitoring for 24 hours, from October 26 to October 27, 2017 at five locations around the Substation Property. The five monitoring locations were as follows: 1) the southern corner of the single-family residential property, located northeast of the Substation Property (closest residential receptor); 2) the north property line adjacent to Long Island Rail Road parking area; 3) the east property line located between the Substation Property and adjacent four-story residential building; 4) the south property line, located between the Substation Property and the Hempstead Transit Center; and 5) the southeast corner of the commercial property located southwest of the Substation Property (closest commercial receptor). The existing ambient noises levels at the above monitoring locations ranged from 59 a-weighted decibels (dBA) to 67 dBA during the daytime and from 54 dBA to 64 dBA during the nighttime. With respect to the nearest receptors, existing ambient noise levels at the nearest residential and commercial properties were 62 dBA and 65 dBA during daytime, respectively, and 54 dBA and 61 dBA during nighttime, respectively.

Projected noise levels were modeled based on measured existing ambient noise conditions, the spatial arrangement of the proposed substation equipment, and noise data test reports received from the substation equipment manufacturer. The only new sources of noise as a result of the Proposed Action are the two new 69/13kV transformer banks. Based on the completed Noise Study, the maximum projected noise level from the new 69kV transformers at the nearest residential and commercial receptors are 43.7 dBA and 31.4 dBA, respectively. The maximum projected noise levels at the nearest residential and commercial receptors are significantly lower than the existing ambient daytime and nighttime noise levels, and will therefore not result in any perceptible noise increase above existing ambient noise levels. The Noise Impact Assessment Study for the Hempstead Substation is provided in Appendix C for reference purposes.

The transmission and distribution portions of the Proposed Action, including Phase I and Phase II, will not require the installation of any noise generating equipment, and therefore will not have any impact on existing ambient noise conditions.