



**BROOKSIDE SOLAR, LLC**

**Matter No. 21-00917**

**900-2.21 Exhibit 20**

**Effect on Communications**

**Contents**

Acronym List ..... ii

Glossary Terms..... iii

Exhibit 20: Effect on Communications ..... 1

    20(a) Description of Telecommunications Interconnection ..... 1

    20(b) Existing Broadcast Communication Sources near Wind Facilities .....2

    20(c) Existing Underground Cable and Fiber Optic Major Transmission Location  
        Telecommunication Lines .....2

    20(d) Electric Interconnect Effects .....2

        (1) Structures to Interfere with Broadcast Patterns ..... 3

        (2) Structures to Block Necessary Lines-of-Sight .....3

        (3) Physical Disturbance by Construction Activities .....3

        (4) Adverse Impacts to Co-Located Lines due to Unintended Bonding .....3

        (5) Other Interference Potential.....4

    20(e) Analysis of Capacity ..... 4

    20(f) Adverse Effects on Communication Systems.....4

    20(g) Plans to Mitigate Impacts on Existing Communications Sources .....4

    20(h) Status of Telecommunications Interconnection .....4

Conclusions .....5

**Appendices**

Appendix 20-1 Proposed Brookside Solar Collection Substation

Appendix 20-2 Proposed Brookside Solar Point of Interconnection

## Acronym List

ADSS	All Dielectric Self Supporting
AES	The AES Corporation, Inc.
ASRs	Antenna Structure Registrations
DANC	Development Authority of the North Country
DSNY	Dig Safely New York
EMF	Electric Magnetic Fields
EPC	Engineering, Procurement, and Construction
FCC	Federal Communications Commission
LAN	Local Area Network
LORAN	long-range navigation
MDER	Massachusetts Department of Energy Resources
MPLS	Multi-Protocol Label Switching
NEXRAD	Next Generation Weather Radar
NYCRR	New York Codes, Rules and Regulations
NYISO	New York Independent System Operator, Inc.
NYSEG	New York State Electric and Gas
ORES	Office of Renewable Energy Siting
POI	Point of Interconnection
PV	Photovoltaic
RTU	Remote Terminal Units
SCADA	Supervisory Control and Data Acquisition
ULS	Universal Licensing System
USCs	Uniform Standards and Conditions

## Glossary Terms

<b>Applicant</b>	Brookside Solar, LLC, a subsidiary of The AES Corporation, Inc. (AES), the entity seeking a siting permit for the Facility from the Office of Renewable Energy Siting (ORES) under Section 94-c of the New York State Executive Law.
<b>Facility</b>	The proposed components to be constructed for the collection and distribution of energy for the Brookside Solar Project, which includes solar arrays, inverters, electric collection lines, and the collection substation.
<b>Facility Site</b>	The parcels encompassing Facility components, which totals 1,471 acres in the Towns of Burke and Chateaugay, Franklin County, New York (Figure 2-1).

## Exhibit 20: Effect on Communications

This Exhibit provides information required in accordance with the requirements of Section 900-2.21 of the Section 94-c Regulations.

### 20(a) Description of Telecommunications Interconnection

A solar collection substation will be constructed and serve as the Point of Interconnection (POI). The substation will connect to the existing New York State Electric and Gas (NYSEG) Line 911 Willis Road to Chateaugay 115-kV transmission line at the Chateaugay substation located on US Route 11, as depicted in Appendix 20-1, Proposed Collection Substation.

The Brookside Solar Project (Facility) will interconnect to NYSEG's network via a redundant 24-strand, single-mode fiber optic cables. The telecommunications design is currently under development. The preliminary POI is depicted on Appendix 20-2, Proposed Brookside Solar Point of Interconnection.

The proposed POI functionality will include:

- To Transmission Utility Interconnect (POI)
  - Two-line differential relays (A/B) with two channels each over fiber.
  - Two serial channels between Remote Terminal Units (RTU) over fiber.
  - Additional Telephone Service over fiber for revenue meter access.
- To Solar Operator
  - Multi-Protocol Label Switching (MPLS) and Local Area Network (LAN) IT equipment.
- To Photovoltaic (PV) Supervisory Control and Data Acquisition (SCADA)
  - 24-strand count All Dielectric Self Supporting (ADSS) fiber to solar inverters and metering equipment.
- To New York Independent System Operator, Inc. (NYISO)
  - RTU PV Plant Controller circuits for third-party data links to substation.

## **20(b) Existing Broadcast Communication Sources near Wind Facilities**

The proposed Facility is a solar project, and therefore, this section is not applicable.

## **20(c) Existing Underground Cable and Fiber Optic Major Transmission Location Telecommunication Lines**

The Applicant reviewed publicly available information to determine if major fiber optic lines are located within a 1-mile radius of the Facility. Based on information obtained from New York's Development Authority of the North Country's (DANC's) website, it was determined that DANC has a fiber route that transverses the Facility Site along US Route 11. The Federal Communications Commission's (FCC's) Universal Licensing System (ULS) database did not identify any Antenna Structure Registrations (ASRs) within 1 mile of the boundaries of the proposed solar array. It was concluded that there are not any cellular communications backhaul links, over fiber optics within 1 mile of the Facility Site.

The Applicant and/or Engineering, Procurement, and Construction (EPC) contractor will submit a request for location information to Dig Safely New York (DSNY) prior to the commencement of construction activities to verify the location of all buried utilities within one mile of the Facility Site. The safety of onsite personnel and the prevention of damages to existing/operating utilities is a top priority of the Applicant. Using the information compiled on current fiber optic and/or underground cables through public review and completion of a site survey for the Facility Site, the Applicant will avoid interference, or minimize interference where avoidance is not possible.

## **20(d) Electric Interconnect Effects**

There will be no adverse impacts to communications systems as a result of the Facility. Communications equipment electronics will be installed and tested to ensure compliance with manufacturer's installation standards. Fiber optic cables neither emit nor are affected by Electric Magnetic Fields (EMF). The Applicant is not aware of any research conducted to date that indicates interference to communication systems from utility-scale solar generation facilities. The Facility lacks tall structures and does not have exposed moving parts. The PV arrays generate weak EMF during the day that dissipate at short distances.

**(1) Structures to Interfere with Broadcast Patterns**

Re-radiated wireless signals are a function of a material’s refractive index. The POI for the Facility will consist of a collection substation, composed mainly of concrete and galvanized steel components. These materials have low refractive indexes, which result in relatively low levels of signal re-broadcasts. Re-broadcast of transmission signals are not expected to be an issue.

**(2) Structures to Block Necessary Lines-of-Sight**

The average height of the collection substation components will be under 50 feet, which is below tree heights in this region. Given the low profile of PV panels, the Facility is not anticipated to disturb or block any lines-of-sight for microwave telecommunications systems or any other line-of-sight communication systems. As a result, tree heights are the controlling factor for line-of-sight concerns and the Facility interconnection will not result in wireless signal blockages or increase signal attenuation.

**(3) Physical Disturbance by Construction Activities**

Physical disturbance to communication infrastructure during construction is not anticipated. Prior to construction, the Applicant will submit a “design ticket” to DSNY, which will initiate a process in which utilities provide relevant location mapping to the Applicant. The Facility will avoid direct disturbance or impacts to underground cables or fiber optic lines. Using the information compiled on current fiber optic and/or underground cables through public review and completion of a site survey for the Facility Site, the Applicant will avoid interference, or minimize interference where avoidance is not possible. The Applicant will work closely with the DANC to avoid any disruption to the fiber optic line mapped within the Facility Site.

**(4) Adverse Impacts to Co-Located Lines due to Unintended Bonding**

The Applicant has no intention of co-locating buried lines related to the interconnection or transmission components. Therefore, no adverse impacts to co-located lines are anticipated.

### ***(5) Other Interference Potential***

Based on the Applicant's analysis, there is not expected to be any adverse interference to communications systems as a result of the Facility. PV panels have a low profile and any frequencies produced by the Facility will likely dissipate quickly over short distances.

### **20(e) Analysis of Capacity**

The Facility will use fiber optics to facilitate communications to and from the collection substation. Given the capability of gigabits-per-second transmission speeds of fiber electronics and the availability of wave division multiplexing, there are no anticipated constraints regarding system communications capacity.

### **20(f) Adverse Effects on Communication Systems**

The solar array and interconnection equipment are to be connected by fiber optics and therefore, will not adversely affect other communications systems. In the unlikely event that the interconnection does impact other communication systems, the Applicant will take appropriate steps to review and respond to any complaints.

### **20(g) Plans to Mitigate Impacts on Existing Communications Sources**

In the unlikely event that there is a significant adverse effect to communications systems post-construction, this will be resolved through the complaint resolution process. The Applicant will provide a Complaint Management Plan as a preconstruction notice in accordance with Section 900-10.2 of the Section 94-c Regulations. After proper analysis, measures will be taken to resolve the issues presented. In addition, the Applicant's onsite communications system will be inspected and maintained throughout the life of the Facility and provide information to the AES Control Center.

### **20(h) Status of Telecommunications Interconnection**

It is anticipated that the connection to NYSEG's network will be via a redundant 24-strand, single-mode fiber optic cables. Communications negotiations are a part of the NYISO Facilities Study, which is in process. It is expected that the framework of previous agreements will be used and that no significant concerns are expected.



## Conclusions

The potential Facility impact on AM radio broadcast coverage, cable or satellite television, cellular phone service (i.e., wireless networks), microwave transmission, emergency services, municipal/school district services, public utility services, Next Generation Weather Radar (NEXRAD), air traffic control, armed forces, Global Positioning System, long-range navigation (LORAN), amateur radio, and the New York State Mesonet system has been evaluated and no significant impacts have been identified at this time. The Facility has been designed to comply with 19 New York Codes, Rules and Regulations (NYCRR) Section 900-2.21 and the Uniform Standards and Conditions (USCs) and impacts related to communication have been avoided and minimized to the maximum extent practicable. The Applicant's onsite communications system will be inspected and maintained throughout the life of the Facility and provide information to the AES Control Center.