High Voltage Protection (HVP)

Pre-Order Procedures

If the site is a power generating substation or transmission tower, then it is likely that High Voltage Protection Equipment (HVPE) will be required. Customers at these kinds of locations are required to identify these potentially hazardous locations. The following questions can assist in determining if HVPE is required:

- ✓ **Does this location generate or distribute electrical power that is used off-site?**
- ✓ **Does this location have any electrical equipment or facilities, such as poles or towers, with high voltage (i.e., equipment with over 150 kilovolts phase to phase)?**

NOTE: Customer is responsible for the cost to provision HVPE and will be billed upfront for the total cost of provisioning prior to HVPE installation, if the HVPE is needed for the service request. For additional information, scroll to the "Overview" sections further in this document.

When submitting a request for new service installation/a change of existing service on a High Voltage Protection requiring site, or have questions regarding High Voltage Protection identification, please contact your AT&T Sales / Sales Support / Call Center Representative.

If confirmed that your site requires HVPE, the request requires special handling. Please, follow the outlined process:

1. **Before submitting a request, Form 1039A needs to be completed. You can ask your AT&T Sales / Sales Support / Call Center Representative to send you Form 1039A.**

   Form 1039A.docx

   *****Note: Please, make sure to note your AT&T Sales / Sales Support / Call Center Representative contact's name and contact information, as this will be your POC in case of further inquiries/status updates. AT&T Sales / Sales Support / Call Center Representative should also provide you with the appropriate contacts in terms of OSPE/ICEP Engineers in case you need assistance completing the Form 1039A.*****
2. **Complete fields 10-34, and 46 of the Form 1039A and return to your AT&T Sales / Sales Support / Call Center Representative. In case of questions regarding completing the 1039A, contact your ICEP/OSPE Engineer.**

3. **ICEP/OSP Engineer will contact you for any clarification of GPR Data supplied.**
4. **OSPE Engineering will contact you in terms of a site visit.**
5. **Once the request is processed, the completed Form 1039A is returned by your AT&T Sales / Sales Support / Call Center Representative with a notification that you can start submitting ASRs for your request.**
   IMPORTANT: When submitting a Service Request:
   - **A note should be placed in the RMRKS section designating that the address is HVPE and confirming that the 1039A Form has been completed**
     e.g.: "HVPE REQUIRED; 1039A COMPLETED. PLEASE, PROCESS ASR"
   - **The "HVP" field needs to be populated with "Y".**

6. **Once the ASRs are submitted, please send the ASR# back to your AT&T Sales / Sales Support / Call Center Representative Contact, as it needs to be added to finalize the completed 1039A form. Once the ASR is processed, service representative will send you an FOC e-mail with a due date for your request.**
7. **If an ASR is submitted prior to completing the steps listed in "Pre-Order Procedures", the ASR will be put to jeopardy and given a standard 90-day DD.**

*****NOTE: For new installs and change requests involving field work, pre-order procedures need to be followed as outlined. For existing service that are records only (no field work required), carrier can use an existing Form 1039A, as there is no physical change needed, and pre-order procedures have already been followed. In this case, please provide a copy of the completed form and indicate HVP as outlined in the steps above. ********

Contact Information

If you have any additional questions, please contact your AT&T Sales / Sales Support / Call Center Representative.

Overview

The term **high voltage** usually means electrical energy at voltages high enough to inflict harm or death upon living things. Equipment and conductors that carry high voltage warrant particular safety requirements and procedures. In certain industries, high voltage means voltage above a

particular threshold (see below). High voltage is used in electrical power distribution, in cathode ray tubes, to generate X-rays and particle beams, to demonstrate arcing, for ignition, in photomultiplier tubes, and in high power amplifier vacuum tubes and other industrial and scientific applications.

As stated in document Electrical Protection of Communications Facilities Serving Power Stations, there are three fundamental objectives of special protection at High Voltage locations.

1. To minimize electrical hazards to our employees and customers.
2. To prevent electrical damage to telecommunications equipment and cable facilities.
3. To provide the desired service performance and continuity of telecommunications transmission at times of power faults as specified by the customer.

If required protection devices are omitted or improperly chosen and applied, hazards to personnel, interruptions to transmission continuity and possible damage to plant and terminal equipment could result during power fault conditions. The determination of the need for HVPE is handled by the Inductive Coordination and Electrical Protection (ICEP) Engineer in cooperation with the customer requests for service. The ICEP Engineer works with the Outside Plant Engineer (OSPE) to ensure the applicable protection equipment is placed at the site.

The special protection equipment at the HV location is considered to be telephone network equipment, and it is always located on the telephone company side of the Network Interface. Even if the protection equipment is owned by the utility or customer, it is still considered network equipment and must be located on the telephone company side of the Network Interface. It is NOT considered to be terminal equipment.

High voltage protection equipment can be provided by the AT&T or by the Customer. AT&T provided High voltage protection equipment (ATTHVPE) is HVPE owned and maintained by AT&T and provided to the customer with associated charges (billed upfront for the total amount). Customer provided high voltage protection equipment (CHVPE) is HVPE owned and maintained by the customer.

<u>Description and Benefits</u>

- High Voltage Protection Equipment (HVPE) serves Network services (permanent or temporary) that are extended into a high voltage environment (e.g., electric power generating, switching, and distribution locations).
- HVPE is required whenever hazardous voltages can appear on those facilities due to GPR (Ground Potential Rise) and/or induction caused by faults in the customer's electrical power system.
- The Power Station HVPE is designed to provide high voltage isolation while enabling telecommunications transmission and signaling over normal telephone pairs.

How HVP Works

- The HVPE is designed to protect telecommunication equipment where the GPR (Ground Potential Rise) can create hazardous operating conditions.
- HVPE has no conducting paths between terminals on the Central Office side and those on the station side (remote).
- The newer HVPE currently in use is modular and offers easy expansion or change if circuitry application changes.

Additional Information

NOTE: ASRs cannot be submitted until all OSPE work is complete and confirmation of work complete is received by the carrier. When the ASR is submitted a note should be placed in the remarks section designating that the address is HVPE as well as indicating that the 1039A is completed, and the "HVP" field on the ASR should be populated with "Y" (Follow section "Pre-Order Procedures" further in this document)

NOTE: Power companies and customers who request services at Power Generator Substations & Towers (PGST) do not always provide accurate information concerning HVPE needs at a location. If the AT&T Engineering team determines that a location is HV and was not accurately identified to AT&T, the CLEC will be instructed to provide accurate information to their LSC representative and that their service request will be delayed until corrected

HVPE Components

High Voltage Protection Equipment components include:

- Transformers and Neutralizers provided by AT&T
    - Copper Solution (Positron and SNC)
    - Fiber Solution (RLH and Positron)
    - Fuse Link Application (Cable Protection)
- Transformers and Neutralizers provided by the customer
    - All customer-provided HVPE must be approved prior to installation and inspected after installation by the AT&T ICEP Engineer.

HVPE Due Dates

Delivering service to a Hazardous or Inaccessible locations has no service due date intervals. When provisioning and pre-ordering process is done, Network Engineer declares site ready. Once site is ready Network Engineer can apply service interval dates for circuit turn-up. Due dates for placing HVPE at power-company / customer locations will be determined after the on-site visit.

NOTE: For customers with 25 or more locations needing HVPE a project manager will need to be requested by the appointed Sales Support/Account Mgr/Call Center Representative