

Antenna Co-location for TVA Power Distributor Customers

WHAT

Antenna co-location is the right given by TVA to a third party to locate a communications antenna on a TVA structure, such as a communications or transmission line tower or building. TVA may provide antenna co-location to TVA's power distributor customers. TVA's consideration of such requests may be granted provided the integrity of the power system is not jeopardized, TVA recovers all incremental costs, and the antenna co-location is feasible.

Operation of TVA's power system must be protected in the present and future by maintaining adequate operational margin which, in this context, means TVA must maintain adequate space on which to locate its own antennas.

Due to sensitivity and limited resources, antenna co-location is not to be marketed to distributors.

WHO

- All TVA employees who have a role in TVA's antenna co-location business.
 - TVA power distributor customers
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WHY

TVA, from time to time, receives antenna co-location requests from distributors and TVA needs to have a uniform approach to such requests. Where feasible, antenna co-location arrangements support TVA's goal to establish long-term relationships with TVA power distributors and provide communication enhancements for both TVA and the distributor customer.

HOW

A. Responsiveness

TVA is committed to providing a prompt turnaround for initial response to a customer request, such as feedback on feasibility, cost, and schedule details. At the initial request, Power System Operations (PSO) and Customer Resources (CR) personnel will help distributors understand the typical costs of co-locating on TVA's towers and sites and identify other options which may prove as effective and more economical.

B. Engineering Analysis

TVA will perform the engineering analysis required in connection with a distributor co-location request.

1. Structural and Radio Frequency Electromagnetic Emissions (RFEME) analyses are Federal Communications Commission (FCC) and Operational & Safety Health Administration (OSHA) requirements and American National Standards Institute (ANSI) standards. These analyses, along with adherence to best management practices for tower climbing, are essential to maintaining personnel safety.
2. If it is determined that meeting these regulatory requirements, together with recovering TVA costs, is likely more expensive than installing a free-standing pole, the distributor will be informed early in the process.
3. When adding any equipment to a tower, a structural analysis must be performed to determine the ice and wind loading and load-carrying capacity of the structure. ANSI Structural Standards for Steel Antenna Towers and Antenna Supporting Structures are stringent and diminish the spare capacity for existing structures. Distributors must pay TVA's cost for analyses required to evaluate their requests. All analyses (customer or TVA initiated) will document remaining tower capacity, so that future requests can be handled more expeditiously at lower cost.
4. Following guidelines in FCC OET-65, TVA is in the process of completing RFEME studies for all its towers. Any antenna addition requires new measurements to be performed.
 - PSO will fund all initial reviews for towers that currently have TVA communication equipment located on them. Distributors will only be charged for measurements required to update studies already performed.
 - In the event there are no antennas on the tower, distributors shall pay for the initial review.

C. Operational Reviews

PSO Transmission Operations Maintenance (TOM) and Transcomm review the Service Agreement under which TVA will install the distributor's antenna to determine if special language is needed to cover operational issues associated with the co-location request.

D. Site License Agreements (SLAs)/Fees

1. Existing license agreement - No annual license fee has been required and this status will continue as long as the licensee remains a TVA distributor customer.

2. New license agreement - TVA waives the annual license fee for distributor customers with a 5-year or greater contract and who have not given notice as long as the antenna is used in the control and operation of its distribution system. Distributors whose antenna co-location will be used for commercial purposes will be charged an annual license fee negotiated at current market value. If a distributor leaves the TVA system, TVA reserves the right to begin charging a market-based, commercial rate at that time. The commercial rate will be re-evaluated annually.

These agreements typically have a 90-day revocable clause which will allow them to be terminated or re-negotiated if the distributor leaves the TVA system.

E. Cost Recovery

1. Tower Review - A structural review shall be required to evaluate all antenna co-location requests. This structural review fee is \$1,500 (which amount may be periodically adjusted). Once the structural review has been completed and the co-location approved, the SLA will be sent to the distributor for review and execution. The review fee will be incorporated into the cost of installation. If the Distributor's request for co-location is approved and the Distributor subsequently does not co-locate, the Distributor will be invoiced for the structural review fee.
2. Enhance or Replace a Tower - TVA is required to recover all costs associated with a tower replacement or any tower enhancement required to accommodate the distributor's request.
3. Normally TVA's financial policy requires full cost recovery, including overheads, for work performed for others. Overheads may be waived by CFO (reviewed by PSO and CR and approved by CFO), if the following criteria have been met:
 - a. The costs are not material to TVA and its customers (measure: cost of the job is not greater than \$50k);
 - b. The requestor is a distributor with a 5-year or greater contract that has not given notice; and
 - c. The antenna will be used in control and operation of the distributor's distribution system.

If the antenna co-location project exceeds the \$50k criteria, the Vice President of PSO Electric System Projects (ESP) and PSO Business Services will review the waiver request for appropriateness prior to submittal to the CFO for consideration.

F. Installation of Antenna Co-location Equipment

1. TVA will perform all tower equipment installations which involves climbing the tower.
2. The distributor or its subcontractor may install all ground equipment subject to TVA approval of the site plan.

G. Liability Insurance

The SLA must contain liability insurance provision (approximately \$1M - \$5M) to protect TVA if a power distributor's employee is injured on the job, TVA property is accidentally damaged, or a third party suffers injury or property damage as a result of the co-location (see "How - F.2").

H. Indemnification

The SLA will follow the policy adopted by CR Contracts with regard to the inclusion or waiver of indemnification provisions in distributor contracts as such policy mandates change from time to time.

I. Property Rights

Adequate real property rights to support the distributor's use of a TVA site must exist. The acquisition of any necessary property rights, such as an easement from the underlying property owner where TVA holds only a transmission easement, will be the responsibility of the distributor.

ROLES

CR

Business Services/Cost Management

- Provide a CR short code to Telecommunications & Energy Management Products & Services (T&EMPS) to collect all applicable TVA costs.
- Enter and maintain all information required in TVA's Billout Subsystem (BOSS) for cost collection and billing.
- Ensure charges to be billed are submitted using proper accounts/classification via TVA general ledger (Integrated Business System (IBS)) feeder systems.
- Provide documentation required to support invoices in accordance with agreement terms to the Controller organization.
- Cost Management may initiate requests for BOSS/IBS journal entries to correct external billing errors.

Customer Service

- Serve as the contact representative for both T&EMPS and the distributor customer.

T&EMPS

- Receive all antenna co-location requests from Customer Service or directly from the distributor and request TVA reviews (structural, operational, environmental) from appropriate organizations.
- Request preliminary feasibility assessment be performed by PSO ESP Telecom Projects. If study is acceptable, provide short code, preliminary scope of work, desired in service date, and cost recovery criteria to PSO Business Services for Project work order initiation.

- Draft, negotiate, and execute satisfactory SLAs and supplements/revisions in an expeditious manner.
- Provide the following information to Chief Financial Officer (CFO) for review prior to executing any SLA or supplement/revision to an SLA that addresses pricing:
 - Financial information, billing terms, and rates.
 - Justification for contract terms which provide for invoicing less frequent than monthly.
- Request Service Agreement estimate details from Telecom Projects, write the Service Agreement, and forward to PSO ESP Telecom Projects, PSO Business Services, and PSO TOM Transcomm for concurrence.
- Determine the market-based, commercial rate to be charged if the distributor leaves the TVA power system (see “How - D.2”).
- Determine current market value of annual license fee to be charged to distributors whose antenna co-location will be used for commercial purposes (see “How - D.2”).
- Resolve billing-related issues by coordinating with the distributor, CR Business Services Cost Management, and the CFO.

Chief Operating Officer (COO)/PSO

Business Services

- Provide project and work order number to PSO ESP Telecom Projects.
- Review project and work order estimate to ensure appropriate overheads are applied or appropriate documentation is provided to support the waiver of overheads.
- Establish and maintain all information required in BOSS for PSO cost collection and billing to CR. This includes reviewing the internal agreement between CR and PSO ESP Telecom Projects and any supporting documentation. *[It has been agreed that all costs between TVA Strategic Business Units be internally billed rather than direct charging. This allows business units to maintain resource utilization and track schedule activities through the work management systems.]*
- Close project and work order after completion notification is received from PSO ESP Telecom Projects.

ESP/Telecom Projects

- Perform preliminary assessment to determine whether request is feasible from a tower space and antenna frequency compatibility standpoint.
- If feasibility assessment is acceptable, request Transmission Line Projects perform structural review.
- Coordinate with PSO Business Services to obtain project number and work order number.
- Prepare engineering and installation estimates.
- Provide verification to PSO Business Services that criteria in “How - Section E.3” has been met and/or customer meets all criteria to waive overheads.

- Manage the workforce performing the installation and conduct site visits and pre-construction meetings (walk-downs) with the distributor.
- Provide Service Agreement estimate and other contract details to T&EMPS. Review and provide concurrence of the Service Agreement.
- Initiate design and procurement work, complete RFEME Modeling/Study, verify prerequisites are complete.
- Register tower with FCC if required.
- Perform installation.
- Notify T&EMPS and PSO Business Services upon completion of the installation.
- Update design documentation and close project and work order.

ESP/Transmission Line Projects (TLP)

- Perform structural review for transmission and communications towers (in-house or contracted for external review).
- Work with Telecom Projects to initiate design and procurement work and update design documentation upon completion of installation.

ESP/TLP/Siting & Environmental Engineering

- Perform environmental review and provide Categorical Exclusion Checklist (CEC) to T&EMPS and PSO ESP Telecom Projects prior to installation.

TOM

- Direct requests received from the distributor to T&EMPS for processing.
- Complete operational reviews of transmission towers, review Service Agreement, and provide approval to T&EMPS.

TOM/Transmission Communications

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CFO

Controller

- Review all agreements/supplements/revisions to ensure correct accounting in support of product/service costing, billing rates, and billing terms.
- Review contract setup in BOSS.
- Invoice distributors for amounts due under Service Agreements and SLAs.
- Work with TVA organizations to resolve billing-related customer inquiries.
- Perform other accounts receivable functions and ensure compliance with CFO SPP 13.7, "External Billing" and CFO SPP 13.15, "Accounts Receivable".

Treasurer

- Determine risk and exposure levels in conjunction with the creditworthiness of the power distributor customer.
- Receive customer payments and post receipts in TVA's general ledger, IBS.

Office of the General Counsel (OGC)

- Review and approve draft agreements.
- Provide legal counsel.

Administration Services

Facilities Management

- Receive and review notification of communications tower antenna co-location requests where the request will result in changes that may affect site maintenance at substations.

RESOURCES

- CFO SPP 13.7, "TVA Accounting Practice External Billing"
- CFO SPP 13.15, "Accounts Receivable"

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