Southwest Transmission Cooperative, Inc.

General Requirements for Interconnection

May 21, 2007

SWTC Transmission Services
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Introduction

Southwest Transmission Cooperative, Inc. (SWTC) is a not-for-profit corporation, as defined and organized under the generation and transmission electric cooperative laws of the State of Arizona, that provides transmission service to member systems that serve areas of central, southeastern and northwestern Arizona, as well as, small areas of New Mexico and California. SWTC’s headquarters are located in Benson, Arizona.

SWTC was formed on August 1, 2001 in response to the deregulation of the electric utility industry in Arizona. Until that time, the functions of SWTC were performed by Arizona Electric Power Cooperative (AEPCO) a not-for-profit generation and transmission company formed in 1961 when four rural Arizona electric distribution cooperatives pooled their resources to build central generation and transmission facilities. These four Arizona distribution cooperatives were: Duncan Valley Electric Cooperative headquartered in Duncan; Graham County Electric Cooperative headquartered in Pima; Sulphur Springs Valley Electric Cooperative headquartered in Willcox; and Trico Electric Cooperative headquartered in Tucson. In 1973, Mohave Electric Cooperative headquartered in Bullhead City, Arizona joined AEPCO and in 1979, Anza Electric Cooperative in Anza, California became a Member. On June 29, 2001 AEPCO split into three cooperatives, SWTC which is responsible for transmission services, AEPCO which is responsible for generation services, and Sierra Southwest Electric Cooperative which provides cooperative services to AEPCO and SWTC.

The combined service area of SWTC’s Member-owned distribution cooperatives covers nearly 30,000 square miles in rural Arizona and portions of California and New Mexico. Across this system, more than 85,000 households encompassing nearly 260,000 people depend on the transmission services SWTC provides. SWTC operates and maintains a power delivery system that include 608 miles of transmission line ranging from 345 kilovolts to 69 kilovolts.

The Rural Utilities Service (RUS) regulates SWTC, as a beneficiary of the Rural Electrification Act. SWTC is a Member of the Western Electricity Coordinating Council (WECC) which is an organization of transmission owners, transmission users and other entities, with an interest in the reliable transmission of electric power in the western United States. WECC is guided by the Federal Energy Regulatory Commission (FERC) to efficiently coordinate transmission planning, operation and use on a regional basis.

Purpose

1. This document describes general requirements as well as procedural, technical, and contractual criteria for interconnection to SWTC’s transmission system. References to the term “interconnection” include facility additions and modifications. These requirements are minimums to be used as a guide toward SWTC’s prompt processing of requests.

2. SWTC normally designs and constructs facilities that comprise its power system. Each request for interconnection will be evaluated on a case-by-case basis and each interconnection request will be subject to meeting reasonable needs of the requesting party. The requesting party may be an independent power producer (IPP), electric non-utility generator (NUG), or a load to be served from SWTC’s transmission system. Interconnections must meet electric utility standards, such as the North American Electric Reliability Council’s (NERC) standards, and specifically, when involving existing SWTC facilities, SWTC’s design standards which are based on RUS and WECC requirements. Copies of SWTC’s
typical designs and structural design criteria will be furnished to the party requesting the interconnection.

3. SWTC normally assumes responsibilities to operate and maintain the above parties facilities that are interconnected with SWTC’s facilities.

4. The review and approval requirements detailed here shall apply to all interconnected facilities regardless of whether SWTC, the requesting party, or its agents actually performs the work.

5. This document will be revised as needed to meet current conditions.

General Requirements

1. Interconnection to SWTC’s transmission system must be consistent with SWTC’s mission and with standard utility practices. A proposed interconnection must not degrade the reliability or operational flexibility of the existing power system. As outlined in SWTC’s Open Access Transmission Tariff (OATT), system studies may be required to evaluate the impact of the requested interconnection. SWTC’s most current OATT can be found on the SWTC OASIS web site (www.azpsoasis.com).

2. Should additional equipment or replacement of existing equipment be required, SWTC will retain equivalent capacity and operational control as previously existed. If SWTC agrees to replace existing SWTC-owned equipment, normally such equipment would be removed and replaced at the sole expense of the requesting party. However, SWTC, at its sole discretion and option, may:
   a. participate in the costs of the proposed project; and/or
   b. allow ownership of replaced SWTC equipment to be transferred to the utility in exchange for transfer of ownership of the new equipment to SWTC

3. The party requesting the interconnection will generally be responsible for obtaining any necessary rights-of-way or easements from landowners. All costs associated with the construction and environmental activities for the new facility will be the responsibility of the requesting party.

4. All arrangements for system studies, design and construction, ownership, operations, maintenance, replacements of equipment, including metering, facility controls, compatible Remote Terminal Units (RTU), and communications, if applicable, shall be set forth in written contracts between SWTC and the requesting party.

5. Advancement of funds will be required before any work is performed for a requesting party by SWTC.

6. When the interconnection results in a service request a Transmission Service (Wheeling) Agreement will be required between SWTC and the requesting party in accordance with SWTC’s OATT.
Environmental and Safety Requirements

1. In accordance with RUS requirements SWTC is required to assess the potential environmental impacts of any proposed interconnection in compliance with the National Environmental Policy Act of 1969 (NEPA) and other environmental regulations. For environmental review purposes, RUS has identified and established categories of proposed actions. These categories have different types of documentation required to satisfy NEPA regulations. The documents assess the potential environmental impacts of the proposed action. A categorical exclusion is prepared for projects that, based on lead agency experience, clearly have no significant impacts. An environmental assessment is used to determine if a project may cause significant environmental impacts. An environmental impact statement is necessary for projects likely to cause significant impacts. A categorical exclusion may take up to 6 months to complete, and environmental assessment may require up to 2 years, and an environmental impact statement may take up to 4 years before the federal lead agency issues its findings. The RUS rule 7 CFR Part 1794, Environmental Policies and Procedures, direct the level of documentation necessary for a proposed action.

2. When the requesting party is the construction manager, the requesting party shall provide an environmental review of the proposed plan so that SWTC can determine what further actions, if any, are needed to comply with the environmental and safety requirements. A copy of environmental documents prepared by or for RUS or a state lead agency involved with the project should be furnished to SWTC.

3. When the requesting party is to own equipment located in SWTC’s substation, switchyard, or right-of-way, the requesting party shall be financially responsible for all activities necessary to comply with the requirements of existing or subsequent applicable Federal or State environmental laws and regulations. Where specific environmental mitigation, as determined through the NEPA process, is required as a result of construction activities, SWTC is obligated to report annually to RUS on the status of such mitigation. The requesting party shall provide SWTC with periodic reports in sufficient detail to permit SWTC to compile and submit its annual report.

4. When making an interconnection to SWTC’s transmission system, the requesting party shall comply with applicable safety laws and building and construction codes, including provisions of applicable Federal, State, or local safety, health, or industrial regulations or codes, and SWTC’s current safety programs, including protection requirements. Copies of SWTC’s safety documents will be furnished to the party requesting the interconnection.

Procedures

Requesting parties are encouraged to discuss proposed projects with a representative at the SWTC Office. The following procedures are to be used when submitting a request for interconnection:

1. Formal requests for interconnection should be submitted well in advance, up to 21 months, of when the equipment or construction specifications are to be issued for bid to allow for SWTC’s review and approval of the proposed plan, designs, and specifications.
2. After receiving the formal request, SWTC will prepare an initial letter of agreement. This letter agreement provides for payment of SWTC’s costs to review the request until the formal contractual arrangements have been executed. Allow up to 8 weeks to process the request.

3. When submitting the written request to SWTC, the requesting party shall follow the requirements of SWTC’s OATT (Sections 16 and 17). In addition the requesting party shall provide as much of the following information as possible to help expedite the review and approval process.

   a. A single-line diagram marked to show the proposed interconnection, including any relaying and metering facilities.

   b. A drawing indicating the physical arrangements of proposed facilities overlaid on existing facilities. SWTC will provide a drawing showing existing facilities.

   c. Geographic location of the proposed interconnection. If a tap, SWTC will help with identification of the adjacent structure numbers.

   d. Description of the proposed routing, approximate lengths, conductor size, spacing, and configuration of any transmission line addition or modification.

   e. Description and ratings of any proposed breakers, switches, metering, associated communications, relaying, and other related equipment. SWTC will provide the requesting party with information as to the fault duty at the proposed location.

   f. Description of transformer(s) voltage and rating, winding connections, impedance if available, and proposed method of protection.

   g. A proposed construction schedule.

   h. A description of the generating resources or loads to be served by the interconnection and the proposed transmission path(s) and service arrangements between resources and associated loads. The description should include the following:

      1. Power output or load requirements;
      2. Size, type, and ratings of large equipment;
      3. Reliability and special operating requirements; and
      4. Impedance, frequency, voltage, reactive power, and protective relaying characteristics of the interconnecting resource or load.

   i. Appropriate billing meters and telemetering equipment specifications. The data should include load control boundary metering, current and potential transformer ratios, and register and contact initiator ratios with multipliers.

   j. Ten-year projections, by delivery points, of winter and summer peaks and minimums for loads served or generation supplied through the point of interconnection.

   k. Relevant planning and operational studies.
Technical Requirements

A. General

1. SWTC will conduct or review power system studies, at the expense of the requesting party, needed to substantiate system impact, reliability, and capability of the transmission system after the addition of the proposed interconnection. System study procedures shall follow those set forth in the SWTC’s OATT (Section 19). The studies will include if deemed necessary, but not be limited to, powerflow, system stability, and short circuit. Evaluation of alternatives to the proposed interconnection, such as lower voltage construction, reactive support facilities, or upgrading facilities, may be requested or conducted. Powerflow analysis will include 10 year load or resource growth projections and the planned facilities needed to satisfy such requirements.

2. When SWTC considers integrating an IPP or NUG into the transmission system, special operational studies may be required. Operational problems on SWTC’s system, either during normal or emergency conditions, may affect SWTC’s control performance; and under certain conditions, the IPP or NUG may have to relinquish unit load and voltage control to SWTC’s system dispatcher. Typically, all of SWTC’s customers are required to maintain a power factor of unity at the point of interconnection. If the requesting party is a power customer of SWTC, a power factor of between 95-percent lagging and 95-percent leading will prevent additional billing for reactive power support from SWTC. Special area-specific operational studies will evaluate the transmission system and reliability considerations. A contract will be required with each IPP or NUG to describe the interconnection and the specific operational procedures and obligations.

3. SWTC will normally provide for design, specification, and construction of the proposed interconnection. If the requesting party chooses to design and construct the proposed project, prints of applicable facility drawings will be furnished by SWTC upon request. SWTC will retain the review and approval authority over any design and construction on its right-of-way or associated with the proposed interconnection. All work performed by SWTC will be at the expense of the requesting party and will include revisions to existing SWTC drawings.

4. Modifications to SWTC’s transmission system to accommodate the proposed project shall adhere to RUS standard design criteria. Any variation from RUS standard design criteria may be considered on a case-by-case basis. Copies of the RUS design criteria will be furnished upon request.

5. Facilities involved in interconnections with SWTC’s transmission system shall meet SWTC’s environmental and safety requirements.

6. Structures installed in or adjacent to SWTC facilities shall meet the RUS appearance criteria used by SWTC.

7. The requesting party making the interconnection with SWTC will provide written Standard Operating Procedures to SWTC for the interconnected facility.

8. Breakers and switches installed in SWTC’s facilities shall adhere to SWTC numbering schemes. Breaker and switch operating numbers will be assigned by SWTC. All switches to be operated by SWTC will be locked with locks furnished by SWTC.
9. Drawings for facility additions must conform to SWTC’s drafting standards and be approved by SWTC. The requesting party will supply drawings on a electronic medium, compatible with SWTC’s computer-aided design system. The requesting party will reimburse SWTC for the cost of translating drawings into a format compatible with SWTC’s system. Copies of SWTC’s drafting standards will be furnished to the party requesting the interconnection if the design is not produced by SWTC. Three marked prints of each drawing should be provided to SWTC not more than 90 days after construction has been completed. The drawings shall be marked to show “as built” conditions. Reproducibles of any new drawings shall also be provided. The reproducibles shall either be on mylar no larger than 22 by 24 inches, with blank standard SWTC title block. Three complete sets of accurate substation drawings shall be provided to SWTC for non-SWTC-owned substations. These drawings shall include, but not be limited to, station plot plans, equipment layouts, single-line diagrams, and control circuit schematics and wiring diagrams. Updated copies of these drawings shall be furnished to SWTC.

10. Five copies of instruction books and manufacturer’s drawings shall be furnished to SWTC for each piece of equipment placed with SWTC’s facilities.

B. Specific Facilities

1. Substation:
   a. Generally, power circuit breakers must be installed at all interconnections with SWTC’s system. Typical specifications covering circuit breaker requirements are available from SWTC. A review of the surrounding area power system characteristics, including system stability studies, will be made for a final determination when the need for out-of-step switching capability is questionable.
   
   b. Installation of equipment in substations must conform to SWTC’s requirements and must be approved by SWTC. Oil-filled equipment, including bushings, shall not contain hazardous materials such as polychlorinated biphenyls (PCB). In addition, oil-filled equipment shall be permanently labeled by the manufacturer as non-PCB. Certification shall be provided to SWTC at or before the time of installation. Oil-filled equipment may require an oil spill containment system to comply with EPA or state regulations. Any increased equipment costs due to these requirements will be borne by the party requesting the equipment.
   
   c. The owner of the installed equipment will be responsible for its proper operation and maintenance (O&M). The equipment must be operated and maintained in accordance with prudent utility practices and applicable environmental and safety standards. SWTC may require additional equipment to assure a reliable interconnection and to safeguard the proper operation conditions of its power system. SWTC will be responsible for O&M equipment that is integral to SWTC’s system provided funds have been advanced to cover their cost.

2. Transmission Line Taps:
   a. Proposed taps to SWTC’s transmission system are subject to approval on a case-by-case basis.
b. Taps to lines at 69-kilovolts (kV) must meet the following minimum criteria:
   (1) Generally, a line section protected by circuit breakers may have a maximum of 10 miles of tap lines which are not protected by circuit breakers.
   (2) Generally, a proposed interconnection to a transmission line, whenever possible, will be connected to the line at an existing tap.
   (3) No more than one connection, without line sectionalizing circuit breakers, will be permitted between 115-kV transmission line breakers.
   (4) Lines of 69-kV and above will normally have overhead optical ground wire (OPGW) shielding over the entire length of the tap-line unless breaker protection is provided at the tap. A breaker may also be required for the tap line due to relaying of specific reliability criteria.
   (5) Circuit breakers capable of interrupting either load or charging current shall be installed in the line sectionalizing positions for all tap substations. These breakers would be used to de-energize line sections without interruption of the tapped loads. Disconnect switches installed in transmission lines have a visible air gap. Normally, SWTC would assume ownership of the sectionalizing switches.
   (6) All disconnect switches shall have operating platforms installed and be connected to the operating mechanisms with ground conductors in accordance with SWTC’s design criteria.

c. Taps to transmission lines of 115-kV and higher voltages normally will not be allowed since lines at these voltage levels require the highest reliability. Approved taps to transmission lines of voltages 115-kV and above must meet the following criteria:
   (1) Only one tap between any two sectionalizing circuit breakers will be allowed. The requesting party, at its cost, will be responsible for adding necessary circuit breakers when the requested tap exceeds one connection between any two circuit breakers.
   (2) All tap lines will have over head optical ground wire (OPGW) over their entire length.
   (3) Relaying for tap-line circuit faults must not measurably degrade the line relaying or interfere with the capability of high-speed reclosing of the tapped transmission line.
   (4) High-speed clearing of all tap-line faults from the tap station will be required under normal operating conditions if the tap station is a source of positive-sequence fault current to faults on the tapped line.

d. Parties requesting transmission line taps shall submit verification that the structures and foundations have been, or will be, designed in accordance with RUS’s Standard Structural Design Criteria.

e. Taps to transmission lines with insulated OPGWs shall not degrade the capability of the existing OHGW or OPGW.
3. System Control:

   a. Supervisory control by SWTC of line circuit breakers, circuit switchers, automatic circuit reclosers, or motor operated disconnects, will be required on all interconnections where breaker or disconnect operations can, in SWTC’s opinion, directly affect the security of SWTC’s power system. The RTU for supervisory control shall be compatible with the Supervisory Control and Data Acquisition (SCADA) system used within the SWTC Area where the interconnection is located. The cost of providing and installing the RTU at a new location or proportionate cost of modifying an RTU at an existing facility will be at the expense of the requesting party. SWTC will perform the necessary expansion, including hardware and software changes, to the SCADA master station equipment at the requesting party’s expense for that portion attributed to the new interconnection. All equipment serial communications, software, labor, interface hardware, and appropriate communication channels compatible with existing SCADA system requirements shall be furnished by the requesting party. Specifications for such equipment will be provided upon request. The requesting party shall provide necessary intelligent electronic devices (IED’s), and all other miscellaneous equipment necessary to interface with SWTC’s supervisory control equipment.

   b. Interconnections that establish additional or new control area boundaries require the requesting party to furnish all the necessary control area metering equipment. These requirements may include, but are not limited to, and or all of the following:

   (1) Analog and/or digital telemetering at the point of interconnection;

   (2) Totalizing equipment at the point of interconnection or some intermediate point on the communications link. A multiported RTU may be substituted in some cases;

   (3) Communications links to both SWTC and the other organization’s power system control center; and

   (4) Automatic generation control (AGC), hardware and software changes or additions at the power system control centers.

   c. SWTC’s telemetering, scheduling, and interconnection metering are performed on a megawatt or whole mega-watt-hour basis; therefore, interconnection metering and totalizing equipment shall meet this criterion. In some of SWTC’s load control areas, a dynamic schedule to the appropriate automatic generation controller may be a consideration for radial tap lines to the SWTC system whenever the load is supplied from a source outside the SWTC control area. Similarly, internal generating resources supplying loads outside SWTC’s load control area may require special equipment at SWTC’s and other organization’s power system control centers.

4. System Protection:

   Protective relaying requirements for each interconnection will be reviewed and approved by SWTC after receipt of a preliminary single-line drawing of the proposed interconnection and a single-line drawing and maps of the party’s system in the area. The party should provide recloser and fuse ratings, relaying data, and line and transformer
impedances. High-speed current differential, communication-assisted distance, directional ground over-current backup and breaker failure are normal requirements for 230-kV and higher voltage interconnections. Specialized relaying may be required to provide automatic load or generation shedding, or interconnected system separation. Dual current differential relays and overcurrent backup are required on transformers. Bus sections require differential relaying and/or communication-assisted overcurrent fast trip schemes.

5. Communications:

a. The requesting party shall provide communications facilities sufficient to meet SWTC’s telephone, radio, system protection, remote meter reading, or Energy Management System/Supervisory Control and Data Acquisition (EMS/SCADA) requirements.

b. The communication channel and channel hardware will be provided by the requesting party. SWTC will specify the type, speed, and characteristics of the communication channel equipment so that compatibility with existing communications, supervisory control, relaying and telemetering equipment is maintained. The specific type of communication equipment to be furnished by the requesting party will be reviewed and approved by SWTC. The requesting party will reimburse SWTC for the costs of any additional facilities provided by SWTC.

6. Metering:

a. Current transformers used for revenue metering circuits must meet the accuracy standards, as specified under the American National Standards Institute (ANSI) C57.13, for an accuracy class of 0.3 percent at all burdens. The thermal current rating of current transformers shall exceed the maximum current capacity of the circuit involved by a factor of 1.5 to 2.0.

b. Voltage transformers used for revenue metering circuits must meet the accuracy standards, as specified under ANSI C57.13, of 0.3 percent accuracy with the following burdens:
   (1) “W” through “Y” burden for 5-kV through 25kV; and
   (2) “W” through “ZZ” burden for 25-kV and above.

c. Revenue metering with a recording demand device shall be used if the estimated maximum demand is 500 kilo-volt-amperes or greater, or if maximum simultaneous demand billing is contractually required. Such revenue metering shall be compatible with the metering policy established by SWTC in the area where the revenue meter will be located. Contact the SWTC office for specific information for your locality.

d. Equipment shall be installed to provide the measurement of kilowatts, kilowatt-hours, kilovar, kilovar-hours, and other information necessary or required.

7. Generation:

a. For connecting new generation projects the new generation project sponsor’s facilities must be in compliance with the WECC New Generation Connection Policy which is intended to provide information to generators regarding the policies for connecting new generation projects to the WECC interconnected transmission system (WECC system)
and applies for WECC members and non-WECC members. In addressing the main concern that the addition of new generation must preserve system reliability, the policy shall be applied uniformly to all new generators that request a connection to the WECC system whether or not they have applied for transmission service. WECC members shall follow all WECC policies including the applicable policies listed below. When a non-WECC member sponsoring a generation project requests a connection to the WECC system, the WECC member accountable for the generation connection administration (Member) shall include within the member connection standard all applicable WECC policies which are in effect at the time of the connection, except where the WECC policies are in conflict with Regional Transmission Organization requirements, or applicable regulatory entity.

The applicable WECC or NERC (or successor organizations) policies should include but are not limited to:

NERC Planning Standards and Operating Policies
WECC Progress Report Policies and Procedures
WECC Reliability Criteria for Transmission System Planning
WECC Voltage Stability Criteria
WECC Minimum Operating Reliability Criteria
WECC Policy Statement on Power System Stabilizers
WECC Procedures for Regional Planning Project Review and Rating Transmission Facilities
WECC Coordinated Off-Nominal Frequency Load Shedding and Restoration Plan

b. In addition to complying with the above specific facilities requirements, generation connected to the SWTC transmission system must provide data to SWTC in connection with the generating unit(s) equipment, maintenance, and modeling.
   (1) All equipment ratings and machine data must be provided.
   (2) Scheduled unit(s) maintenance must be coordinated with SWTC.
   (3) Data must be modeled in accordance with IEEE models for system studies by WECC.
   (4) The unit(s) actual power output in maximum kilowatts and kilowatt-hours for each month must be provided to SWTC for the current year.

c. The generating unit(s) must have voltage and power factor control operating and the unit(s) governor(s) set to perform according to WECC criteria.
   (1) Automatic voltage regulator operation must be made known to SWTC.
   (2) Operating frequency and voltage is only acceptable within the WECC criteria bandwidth.
   (3) Power quality must meet the industry standard that mitigates voltage sags and spikes, the duration of voltage problems, and problematic harmonic currents.
   (4) SWTC assigns and directs the responsibilities during emergency conditions.

d. The generating unit(s) must be tested in accordance with NERC Planning Standards.

e. To ensure that the interconnected generators do not trip prematurely, the time delay for relays must be coordinated with SWTC and meet with WECC Coordinated Off-Nominal Frequency Load Shedding and Restoration Plan (Section X-Generators).
Contractual and Operational Requirements

1. When SWTC determines that an interconnection is consistent with the requirements in this document and in SWTC’s OATT, contractual agreements will be prepared by SWTC and furnished to the requesting party.

2. SWTC will require an advanced payment of funds to cover its estimated costs prior to actual expenditures of obligations for work or equipment for another party. An estimate of SWTC’s costs, including administrative overhead and other costs associated with construction, operation, and maintenance, will be provided to the requesting party. The contractual arrangements will specify the amount of funds required to be advanced. Upon receipt by SWTC, advanced funds will be placed in a cost account for the project. Periodic cost statements will be furnished as planning, design, and construction work progresses.

3. If construction is done by others, an SWTC representative will be present, as needed, to coordinate and provide for switching, clearances, special work permits, and inspections during construction work on SWTC’s rights-of-way associated with the interconnection. Final electrical connections to the power system typically will be made by SWTC or with SWTC’s supervision.

4. Ownership of facilities installed typically will reside with the party advancing funds for construction. Those facilities considered by SWTC to be an integral part of an existing SWTC substation or transmission line will be operated and maintained by SWTC, at the contractor’s expense, and may become the property of SWTC upon termination of the contractual arrangements.

5. The cost of major repairs or replacements of facilities installed for the interconnection shall be the responsibility of the requesting party. SWTC may share in the cost of major repairs or replacements if the facilities are considered by SWTC to be an integral part of its transmission system.

6. Contractual arrangements with a party for facilities which are installed in or connected to SWTC’s transmission system will normally allow SWTC or any SWTC customer the right to connect to either the high-side or low-side bus of the substation. Appropriate compensation for use of the tap substation facilities by SWTC or its customer will be arranged if the low-side bus of the substation is being tapped.

7. SWTC reserves the right to approve transmission system changes at the tap, substation, or interconnection which affect operation of SWTC’s transmission system, including interconnection with facilities of a third party.

8. SWTC will perform operation and routine maintenance on facilities located in its substations unless otherwise agreed to by SWTC. When the proposed replacement or additions are at a SWTC substation, the contractual arrangements will include provisions for an advance of funds for the costs of labor and other expenses, including allocable overhead costs, associated with the operation and routine maintenance work performed by SWTC. When an existing SWTC transformer is replaced, the maintenance costs attributed to the new transformer will be shared on the basis of the ratio of the capacity retained by SWTC to the capacity of the new transformer. When an additional transformer is involved, the maintenance costs attributed to the new transformer normally will be the responsibility of the equipment owner.
Periodic advances of funds will be required to cover the estimated cost of operation and maintenance work to be performed by SWTC on equipment owned by others.

9. SWTC will perform maintenance on relaying and control equipment and other associated equipment for which SWTC has operating responsibility, unless otherwise agreed.

10. Maintenance will normally be at the expense of the party which owns the equipment or facility when the proposed interconnection involves a tap or substation sectionalizing one of SWTC’s transmission lines. SWTC shall be notified and have the right to witness settings and testing of relays, meters, and controls which could affect the integrity and security of SWTC’s transmission system. SWTC shall also have the right of entry for emergency operation and maintenance of those particular devices if deemed necessary for power system integrity.

11. The operation and dispatching authority of the circuit breakers, disconnects, and interrupters that are an integral part of SWTC’s transmission system shall remain with SWTC. The appropriate power system operations office will order switching and issue all clearances and hot-line orders on the transmission portion of the interconnection or substation. This will involve use of SWTC’s switching and clearance procedures, including use of SWTC locks and tags. Issuance of clearance or hot-line orders may be in the form of an intercompany clearance to a dispatching agent of the utility owning the facility rather than directly to a job supervisor.

12. Requirements for operations, maintenance, ownership, and replacement of equipment associated with an interconnection will be specified in a new or amended contract with the requesting party. This may include appropriate special area operating requirements for IPP’s and NUG’s.

**SWTC Contact**

If you have any questions concerning these requirements, please write, telephone, or e-mail:

**Southwest Transmission Cooperative, Inc.**
Manager of Systems Operations
PO Box 2195
Benson, Arizona 85602

Manager of Systems Operations: Phone …………………… (520) 586 – 5239
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For more information about SWTC please visit our web site at www.southwesttransmission.org