U.S. Department of Homeland Security
500 C Street, SW
Washington, DC 20472

FEMA

SEP 22 2009

MEMORANDUM FOR: FEMA Regional Administrators
Acting FEMA Regional Administrators
Regions I - X

ATTENTION: Disaster Assistance Division Directors

FROM: Elizabeth A. Zimmerman
Assistant Administrator
Disaster Assistance Directorate

SUBJECT: Disaster Assistance Fact Sheet DAP9580.6
Electric Utility Repair (Public and Private Nonprofit)

The purpose of this memorandum is to announce the issuance of the attached final Disaster Assistance Fact Sheet DAP9580.6, *Electric Utility Repair (Public and Private Nonprofit)*. The purpose of the fact sheet is to establish criteria to determine eligibility for repair or replacement of disaster-damaged electric distribution and transmission systems under the authority of rural electric cooperatives (RECs), municipal electric utilities, public power districts, and other public entities following a major disaster or emergency declaration by the President.

If you have any questions about this fact sheet, please contact Lu Juana Richardson, Public Assistance Division, via email at LuJuana.Richardson@dhs.gov, facsimile (202) 646-3304, or phone (202) 646-4014.

Attachment

FEMA DISASTER ASSISTANCE

FACT SHEET DAP9580.6

ELECTRIC UTILITY REPAIR
(PUBLIC AND PRIVATE NONPROFIT)

Overview

The purpose of this fact sheet is to establish criteria to determine eligibility for repair or replacement of disaster-damaged electric distribution and transmission systems under the authority of rural electric cooperatives (RECs), municipal electric utilities, public power districts, and other public entities following a major disaster or emergency declaration by the President. This fact sheet addresses appropriate contracting procedures, categories of work (that is, Category B or F), criteria for replacing conductors, hazard mitigation, Rural Utility Service (RUS) Bulletins, and collateral damage. The Federal Emergency Management Agency (FEMA) must inspect and validate all projects for which the owners are requesting replacement of conductors. The utility owners are responsible for the safety and reliability of their distribution and transmission systems.

Contracting

To be eligible for Federal funding, applicants must comply with federal procurement standards as outlined in the Title 44 Code of Federal Regulations (CFR), Part 13.36, **Procurement**. Essential elements of the procurement process include: competition; a clear and definitive scope of work, if possible; qualified bidders (documented by licenses, financial records, proof of insurance, and bonding, as applicable); a price analysis to demonstrate price reasonableness; compliance with all relevant local, State, and Federal requirements, laws and policies; and, clear documentation of the process/rationale followed in making procurement decisions. There is no requirement to negotiate profit separately when applicants follow competitive procurement procedures. Profit is considered to be a component of the unit price.

Unacceptable Contracts: **Cost Plus Percentage of Cost**

Acceptable Contracts:

1. **Lump Sum**
2. **Unit Price**
3. **Cost Plus Fixed Fee**

4. **Sole Source for Materials** – in limited situations. RECs, municipal utilities, and public power districts may use noncompetitive procurements to procure materials, provided they meet the requirements of 44 CFR §13.36(d)(4), *Methods of procurement to be followed*, Procurement by *noncompetitive proposals.*
5. **Time and Material (T&M)** - applicants may use T&M contracts only when it has been determined that no other contract is suitable and the contract includes a ceiling price that the contractor exceeds at its own risk (44 CFR §13.36(b)(10), *Procurement standards).* Since RECs, municipal utilities, and public power districts generally provide the materials used in repairing their systems, these contracts are referred to as "time and equipment" (T&E) contracts. Due to the critical nature of restoring power to the electrical grid following a disaster and because exigent circumstances do not permit delays related to fully assessing the damages before repair work begins, RECs, municipal utilities, and public power districts commonly use T&E contracts for making disaster-related repairs.

   The use of T&E contracts to repair disaster-related damages to electrical transmission and distribution systems may be eligible for Public Assistance (PA) funding provided the utility owner:
   (a) Documents the exigent circumstances that exist and explains why other types of contracts were not suitable;
   (b) Documents why a detailed scope of work could not be developed for the repairs;
   (c) Ensures that all T&E contracts contain a "ceiling price" that the contactor exceeds at its own risk, a "not to exceed" clause, or are otherwise limited by an applicant-issued task order;
   (d) Performs and documents a price analysis to demonstrate that the hourly rates are reasonable and justifiable under the disaster conditions;
   (e) Documents the terms of the contract (including mutual aid contracts); and
   (f) Monitors contractors and keeps good records of work performed.

Category of Work

FEMA characterizes work authorized under sections 403, **Essential Assistance,** and 407, **Debris Removal,** of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) as emergency work (Categories B and A, respectively) and under section 406, **Repair, Restoration, and Replacement of Damaged Facilities,** as permanent work (Categories C-G). Category F refers to the permanent repair of utility systems. RECs, municipal utilities, and public power districts work to restore power to customers as soon as possible following disasters. Most repairs are permanent in nature. FEMA categorizes electric utility restoration work as follows:

1. FEMA will characterize all temporary work that RECs, municipal utilities, and public power districts perform to restore power to all facilities capable of receiving it, as Category B,

emergency work. In these situations, the RECs, municipal utilities, and public power districts make permanent repairs later to bring the damaged components into compliance with appropriate codes and standards.

2. FEMA will characterize work that RECs, municipal utilities, and public power districts perform to restore the damaged facilities to pre-disaster condition in accordance with applicable codes and standards as Category F, permanent work. RECs, municipal utilities, and public power districts can complete permanent repairs immediately after the disaster occurs or after temporary repairs are completed (see item 1 above).

Replacing Conductors

44 CFR §206.226, **Restoration of damaged facilities**, authorizes reimbursement for "… work to restore eligible facilities on the basis of the design of such facilities as they existed immediately prior to the disaster …" in accordance with adopted codes and standards. FEMA recognizes local, state, and national codes (for example, the National Electrical Safety Code and RUS standards and specifications for materials, equipment, and construction, which are applicable regardless of funding source) as appropriate when determining eligible cost to repair or replace damaged electrical facilities.

Establishing Pre-Disaster Condition

Applicants should provide the following information to establish pre-disaster condition of their facilities:

1. Certification of the pre-disaster condition and capacity of the conductor from a licensed professional engineer who has direct experience with the damaged electrical transmission or distribution system. Records providing satisfactory evidence of the condition and capacity of the conductor as it existed prior to the disaster. The certification may be supplemented by a professional engineering evaluation.

2. If available, copies of construction work plans demonstrating the utility's past practices and current/future projects.

3. If required by RUS, a copy of any corrective action plans submitted to RUS in compliance with 7 CFR §1730.25, **Corrective action** (RUS borrowers only).

ELECTRIC UTILITY REPAIR

Criteria for Conductor Replacement

Determining the disaster-related damages to some components (for example, poles, guys, and cross-arms) of an electrical transmission or distribution system can usually be accomplished by visual inspection. However, determining the full extent of disaster-related damages to conductors, and the appropriate method to repair the damages, is more challenging, particularly with older systems. FEMA considers a conductor eligible for replacement when it is stretched beyond the point where it can be effectively repaired and re-sagged through predictable modeling to meet appropriate clearances, sag and tension, and to meet pre-disaster reliability. A conductor is beyond the point where it can be effectively repaired when one or more of the following criteria exist within a line section:

1. 25% or more of the conductor spans are damaged. Damage is defined as broken conductors, broken strands, the existence of new (disaster-related) splices, and/or if the conductor is severely pitted, burned, kinked, or damaged in other ways.
2. 30% or more of the line spans are visibly out of sag or do not meet clearances (for example, the conductor does not meet clearance requirements for conductor-to-conductor or conductor-to-ground).
3. 40% or more of the poles were replaced or need to be replaced or plumbed (straightened) due to the disaster.
4. 40% or more of the supporting structures have a disaster-related damaged component (for example, x-arms, braces, pin, ties, insulators, guys/anchors, or poles).
5. The sum of the percentages of the above criteria is 65% or more.
6. Other additional compelling information provided by a licensed professional engineer.

Replacement Conductor

FEMA will fund eligible work in accordance with 44 CFR §206.226, **Restoration of damaged facilities.** The use of #2 Aluminum Conductor Steel Reinforced (ACSR), however, is considered the lower cost equivalent to replace conductor with equal or lesser amperage capacity, such as copper weld conductor (CWC), hard and soft drawn copper wire, smaller ACSR, and Amerductor. When such conductor is replaced with #2 ACSR, FEMA will fund adjustments of span lengths and pole heights to meet appropriate design requirements.

If FEMA determines that the conductor is eligible for replacement, FEMA will fund the use of #2 ACSR as the lower cost equivalent replacement of conductor with equal or lesser amp capacity (for example, copper weld conductor (CWC), hard and soft drawn copper wire, and smaller ACSR, and Amerductor). If the existing spacing of poles exceeds the spacing required for the new conductor, FEMA will fund the installation of additional poles and components as required to meet appropriate design requirements.

If disaster damaged conductor does not qualify for replacement, the damaged line section is eligible for repair only.

Hazard Mitigation

FEMA provides hazard mitigation funding under Section 404, **Hazard Mitigation,** and Section 406, **Repair, Restoration, and Replacement of Damaged Facilities,** of the Stafford Act. The State manages the Section 404 Hazard Mitigation Grant Program and establishes the funding priorities for the program. FEMA will evaluate and fund Section 406 hazard mitigation projects to protect disaster-damaged components of facilities. FEMA supports funding cost-effective hazard mitigation measures for electrical transmission and distribution facilities. In order to be eligible, hazard mitigation measures under Section 406 of the Stafford Act:

1. Must be appropriate to the disaster damage and must prevent future damage similar to that caused by the declared event.
2. Must be applied only to the damaged element(s) of a facility. This criterion is particularly important when conducting repairs to a portion of a system.
3. Cannot increase risks or cause adverse effects to the facility or to other property.
4. Must consist of work that is above and beyond the eligible work required to return the damaged facility to its pre-disaster design. Upgrades required to meet current codes and standards, however, are not considered hazard mitigation measures for purposes of the PA Program and have different eligibility criteria.

FEMA staff must review and approve hazard mitigation measures prior to implementation to ensure eligibility, technical feasibility, environmental and historic preservation compliance, and cost effectiveness. FEMA may fund the use of "wind-motion resistant conductor" as effective hazard mitigation, when conductor segments qualify for replacement.

Code or standard upgrades that FEMA determines do not meet the five criteria listed in 44 CFR §206.226(d), **Restoration of damaged facilities,** *Standards*, but which will enhance a facility's ability to resist similar damage in a future disaster, may be eligible for funding under Section 406 hazard mitigation (see FEMA Disaster Assistance Policy DAP9526.1, *Hazard Mitigation Funding under Section 406 of the Stafford Act*). For example, increasing the size or changing the type of conductor for hazard mitigation purposes may be eligible for FEMA reimbursement provided it is both viable and cost-effective.

Cost effectiveness is defined as:

1. Up to 15% of the total eligible cost of eligible repairs; or
2. Up to 100% of eligible repair costs for measures listed in Appendix A of DAP9526.1; or
3. A benefit-cost ratio of 1 or greater.

ELECTRIC UTILITY REPAIR

A non-exhaustive list of typical hazard mitigation measures for electrical systems includes the following:

Sample Mitigation Measure	Justification
Installing additional poles to support transformers	100%, listed in Appendix A of DAP9526.1
Installing guy-wires	100%, listed in Appendix A of DAP9526.1
Providing looped distribution service or other redundancies to critical facilities	100%, listed in Appendix A of DAP9526.1
Elevating pad-mounted transformers above BFE (or ABFE where applicable)	100%, listed in Appendix A of DAP9526.1
Replacing damaged poles with higher-rated poles of the same or different material	100%, listed in Appendix A of DAP9526.1
Cross bracing on H Frame Poles	100%, listed in Appendix A of DAP9526.1
Removing large diameter communication lines	100%, listed in Appendix A of DAP9526.1
Upgrade conductor to Wind-Motion Resistant Conductor (e.g., T2 ACSR)	15% of the total eligible cost of eligible repairs
Mid span poles (not specified by code)	15% of the total eligible cost of eligible repairs

Rural Utility Service (RUS) Bulletins

In order for the costs of Federal, State, and local repair or replacement standards which change the pre-disaster construction of a facility to be eligible, 44 CFR §206.226(d), **Restoration of damaged facilities,** *Standards*, requires that the standards must:

1. Apply to the type of repair or restoration required;
2. Be appropriate to the pre-disaster use of the facility;
3. Be found reasonable, in writing, and formally adopted and implemented by the State or local government on or before the disaster declaration date, or be a legal Federal requirement applicable to the type of restoration;
4. Apply uniformly to all similar types of facilities within the jurisdiction of the owner of the facility; and
5. For any standard in effect at the time of a disaster, it must have been enforced during the time it was in effect.

Under the authority of the Rural Electrification Act of 1936, the United States Department of Agriculture RUS, Electric Programs Division, makes direct loans and guarantees loans to electric utilities to serve customers in rural areas. Rural electric cooperatives use the loans and loan guarantees to finance construction of electric distribution, transmission, and generation facilities. Through these loans, the Federal government is the majority note-holder for approximately 700 electric systems in 46 states. In accordance

ELECTRIC UTILITY REPAIR

with 7 CFR 1724.1(b), **Electrical Engineering, Architectural Services and Design Policies and Procedures,** all borrowers, regardless of funding sources, are required to comply with RUS requirements for new construction design standards, and the use of RUS accepted material on electric systems.

On July 1, 2005, RUS published Bulletin 1742D-106, *Considerations for Replacing Storm-Damaged Conductors,* The bulletin provides guidelines to assist rural electric cooperatives in making expedient decisions on whether to repair or replace damaged conductors after disasters. FEMA has reviewed this bulletin and determined that it does not meet the definition of a code or standard as described in 44 CFR §206.226(d). Therefore, FEMA will not accept RUS Bulletin 1742D-106 as a basis for replacing damaged conductors.

To date, rural electric cooperatives have not cited other RUS Bulletins to support their requests for the replacement of conductors. FEMA will evaluate other RUS Bulletins on a case-by-case basis.

Repair of Collateral Damage

The repair of damage to eligible facilities caused during the performance of eligible work is reimbursable under the Public Assistance Program. If rural electric cooperatives, municipal utilities, or public power districts damage their own or other public property while performing emergency repairs to their facilities, the cost to repair the damage may be eligible (see DAP9525.8, *Damage to Applicant-Owned Equipment*). Rural electric cooperatives often obtain easements from private landowners to access and maintain their transmission and distribution facilities. If private property easements are damaged while making repairs to the disaster-damaged facilities (for example, ruts on the property), the repair of the damage to the private property is eligible for FEMA Public Assistance reimbursement. Applicants shall demonstrate legal responsibility for the repair in the form of a written or statutory easement with an express legal responsibility to repair the damage.

Elizabeth A. Zimmerman — 9.22.09

Elizabeth A. Zimmerman
Assistant Administrator
Disaster Assistance Directorate

Date

ELECTRIC UTILITY REPAIR - APPENDIX

Conductor Replacement Criteria
Frequently Asked Questions

1. **What is a span?**
   A span is the distance between two poles.

2. **What is a line section?**
   A line section is a group of contiguous spans selected for evaluation. The applicant has flexibility in defining a line section. A line section could be a single span, all the spans between two deadend structures, all the spans on a feeder, all the spans on a tap or any other group of contiguous spans that are evaluated together.

3. **What is Criterion 1 and how is it applied?**
   This criterion relates to visible damage to the conductor in a line section. A conductor span with damage such as broken strands, splices or sleeves (installed as a result of the disaster), birdcaging, severe pitting, burns, kinks or other visible conductor damage is counted in this criterion. The number of conductor spans is calculated by multiplying the number of conductors per span by the number of spans. For example a three phase line section with three spans has 12 conductor spans (4 conductors x 3 spans = 12). If a single conductor span has damage in more than one location it still only counts as one damaged conductor span. If 25% or more of the of the total conductor spans in a line section have visible damage as a direct result of the disaster, then the conductors of that line section are considered eligible for replacement.

4. **What is Criterion 2 and how is it applied?**
   This criterion relates to conductor elongation or stretch in a line section. Any conductors in a span that are out of sag or do not meet clearance requirements as a direct result of the disaster are counted in this criterion. If more than one conductor in a span is out of sag or does not meet clearance requirements it still counts as just one span. This evaluation does not require precise measurement of the conductor temperature or actual sag or clearances. This determination is to be made using the good judgment of a qualified electrical inspector. If 30% or more of the total spans in a line section are visibly out of sag or do not meet clearance requirements as a direct result of the disaster, then the conductors of that line section are considered eligible for replacement.

5. **What is Criterion 3 and how is it applied?**
   This criterion is related to damage to the poles supporting the conductor in a line section. If a pole was replaced, is in need of replacement or is in need of plumbing (straightening) as a direct result of the disaster, then it counts in this criterion. A pole is considered to be in need of straightening if it is leaning such that it is unsafe to climb. If 40% or more of the total poles in a

line section meet this criterion then the conductors in that line section are considered eligible for replacement.

6. **What is Criterion 4 and how is it applied?**
   This criterion relates to damage to the supporting structure other than the poles. If the supporting structure has damage such as a broken crossarm, broken support brace, bent pin, broken tie, broken insulator, broken guy or pulled anchor as a direct result of the disaster then that support structure is counted in this criterion. If more than one element of the support structure is damaged it still only counts as one damaged support structure. If a pole is counted under criterion 3 then the supporting structure should not be counted under criterion 4. If 40% or more of the total number of support structures in a line section are damaged as a direct result of the storm then the conductors of that line section are considered eligible for replacement.

7. **What is Criterion 5 and how is it applied?**
   This criterion relates to the total damage to a line section. If the sum of the percentages calculated for criteria 1 through 4 is 65% or more then the conductors of that line section are considered eligible for replacement. It is possible that the sum of the percentages for criteria 1 through 4 could be more than 100%.

8. **What is Criterion 6 and how is it applied?**
   This criterion is included to account for other methods of demonstrating that the conductor in a line section is damaged beyond repair. If this criterion is applied then supporting evidence must be documented to clearly describe the basis for the conclusion that the conductor in this line section was damaged as a direct result of the disaster and is not suitable for continued service. FEMA will make the final determination on a case-by-case basis.