

Methodology for Determining Eligibility for Category F Permanent Work Under DAP 9580.6

Disaster Assistance Policy 9580.6 was established to standardize the criteria by which electrical systems damaged in declared disaster events can qualify for permanent reconstruction of facilities through the Public Assistance program. The policy identifies clear pre- and post-disaster requirements for information necessary to qualify for permanent work, and has been used nationwide for this purpose since 2009. The methodology for providing this documentation and the documents provided to FEMA by Iowa Lakes Electric Cooperative, Lyon County REC, Osceola Electric Cooperative, Inc, and Sanborn Municipal Electric and Telecommunications Utility in disaster DR-4114 are explained in this document.

Establishing Pre-Disaster Condition

DAP 9580.6 requires three items of information to establish the pre-disaster condition of the electrical facility. These items are:

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).

The pre-disaster condition of the system can be attested to by an engineer who has direct experience with the system as they are the most familiar with the system. Utilities typically have electrical engineers on staff who work on the utilities facilities daily, or have long standing relationships with consulting engineers as learning the construction and characteristics of a system can be time consuming for someone who is unfamiliar with a specific system. The experience of the engineer allows him to make a qualified certification because of this familiarity.

Additionally, utilities in the State of Iowa are under the authority of the Iowa Utilities Board (IUB) who regulates the condition of the utilities' facilities, rates, and operations under §199 of the Iowa Administrative Code. The IUB will inspect the utility and issue reports based on the findings of these inspections. Any deficiencies found are required to be addressed according to §199, Chapter 25 of the Iowa Administrative Code.

Construction Work Plans/Long Range Plans can also supplement the documentation of the pre-disaster condition of the facility as these plans clearly show the areas of the utility that are in need of work beyond regular maintenance activities. Utilities typically schedule specific projects two to four years in advance, and plan general construction activities out further, typically ten years in advance, to plan for future financial needs and provide the necessary regulatory documentation for impacts on utility rates.

Corrective action plans under the Rural Utilities Service (RUS) are documents used to demonstrate the short and long term actions the RUS borrower will take to correct any deficiencies in the system to improve operating conditions to a satisfactory level. The corrective action plan will not duplicate any findings of regulatory bodies, either federal or state, but supplement these findings according to the criteria used in RUS form 300 (7 CFR §1730-Appendix A).

The system engineers have provided certification of the pre-disaster conditions of the facilities in question and have done so because they had the requisite direct experience with the system that allowed them to make their qualified professional opinions. Additionally, the applicants in this appeal have provided documentation relating to the inspection, maintenance, and corrective actions when applicable in support of their pre-disaster system conditions in the form of long range and construction work plans, IUB inspections, in house system inspections, corrective actions (when available) and capital expenditure reports showing the expenditures of their maintenance and construction activities for the purposes of system maintenance and improvements. These documents were provided to FEMA for their review, and can be found in Attachments 11-19.

Criteria for Conductor Replacement

DAP 9580.6 has 5 criteria, four of which are specific to components of the electrical facility and one of which allows for cumulative damages, which can be but are not all required to be met in order to prove a facility qualified for assistance under the Public Assistance program. Additionally, DAP 9580.6 post-disaster facility evaluation policy allows for other compelling engineering documentation that can support qualification for assistance. Satisfaction of any one of criteria 1 – 5 will qualify the evaluated section for Category F permanent work under the PA program according to the policy.

The criteria for damages to receive Public Assistance funds from FEMA are:

Reasons for Replacing Conductors in the above Line Section	YES	NO
#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.		
#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, pins, 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.		

In order to make the determination of damage, the applicants and their engineers perform inspections of their systems immediately following the disaster event. Based on the observations of the damages to the applicant's facilities, the qualified staff populates the evaluation document by line segment and submits this document to FEMA for their review in accordance with the policy.

The criteria FEMA uses to determine eligibility can be satisfied by visual inspection of qualified personnel. The applicants in this appeal provided the necessary documentation in accordance with DAP 9580.6 that provided proof of pre- and post-disaster facility condition similar to that in five other disasters – DR-1854, DR-1877, DR-1880, DR-1977, and DR-4016.

Each applicant in this appeal has filed documentation in the form of an evaluation for each line segment that qualifies for Public Assistance funds using these criteria after conducting inspections of the lines. Each evaluation is comprised of the individual damages to facilities in accordance with criteria 1 – 4, with a cumulative damage in criteria 5. Each evaluation form shows the segment in question qualifying by meeting at least one, if not more or all of these criteria. The evaluation forms were signed and stamped by a qualified electrical engineer who is registered in the state of Iowa. These forms were provided to FEMA for review. The form used by applicants in the state of Iowa is attached to this document as appendix A.

There is no requirement that applicants produce pre- and post-disaster testing of conductor to prove the strength and capacity of the facilities to qualify for assistance under DAP 9580.6. There is no requirement by the State regulatory authority, the Iowa Utilities Board, that distribution utilities conduct tests on their conductors to prove strength and capacity of electrical facilities. There is no requirement of utilities operating facilities under 100 kV to conduct tests to prove the strength and capacity of electrical facilities by either the Federal Energy Regulatory Commission (FERC), the Federal regulatory body, or the North American Electric Reliability Corporation (NERC) the industry's self-regulatory body.

FEMA has determined that a cost effective equivalent to existing copper, small ACSR (aluminum conductor steel reinforced) and Amerductor (steel conductor) is #2 ACSR. FEMA will use the cost of this conductor as the basis for the costs of conductor replacement for all qualified facilities. FEMA will also fund the installation of additional poles if the existing span, or distance between two poles, is greater than required by the appropriate system design requirements.