ORDER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

6030.20F

11/4/04

SUBJ: ELECTRICAL POWER POLICY

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1. **PURPOSE**. This order establishes policies, defines electrical power service categories, provides implementation guidelines and assigns responsibilities for power systems supporting the National Airspace System (NAS).

2. **DISTRIBUTION**. This order is distributed to the division level in Technical Operations, Office of Communication, Navigation, and Surveillance Systems, Office of System Architecture and Investment Analysis and Office of Acquisitions in Washington Headquarters; to the division level in the FAA Logistics Center and the FAA Academy at the Mike Monroney Aeronautical Center; to the division level in Office of Innovation and Solution at the William J. Hughes Technical Center; to the branch level within the regional Technical Operations divisions; and to all Technical Operations field offices with a standard distribution.

3. **CANCELLATION**. Order 6030.20E, Electrical Power Policy, dated 10/5/89, is cancelled.

4. **IMPLEMENTATION DATE**. The effective date of this order and the implementation date are the same.

5. **BACKGROUND**. Public utility companies provide the primary source of electrical power for NAS facilities. During utility power outages, FAA backup power systems provide continuous electrical power to NAS facilities. This policy discusses the actions needed to ensure the quality and quantity of power to achieve the FAA Strategic Goals of enhanced safety, security, and system efficiency of the NAS.

6. **EXPLANATION OF CHANGES**. This revision updates Air Traffic organizational changes, defines categories of NAS electrical power service, updates the appendix, and provides guidance for assigning power categories at NAS facilities.

7. **AUTHORITY TO CHANGE THIS ORDER**. The Director of Technical Operations ATC Facilities, issues changes to this order that do not set policy, delegate authority, or assign responsibility.

8. **POLICY**. NAS facilities must have reliable and economical electrical power sources to provide safe, secure, and efficient air traffic control. The primary and backup systems must provide power availability commensurate with functional and operational requirements. ATO personnel should consider the following when appropriate.

Distribution: A-W (AF/OS/NI/SR/OP/VN/FZ/ND/SD/SU/AS/FS)-3; A-X (AF)-3; A-Y (DE/AY)-2 copies; A-Z (CB-200/300/400/500/600/700/800)-2 copies; A-FAF-0 (STD)

Initiated by: ATO-W (AOS-1000)

a. Continuous Power Airports (CPAs). These provide continuous operation in the event of area-wide utility power failure. CPA airports must have backup power to operate runway lighting and NAS services. The backup power must be available to supply power for at least 4 hours to the runway lighting as well as navigation, landing and communication equipment.

b. Compatibility. Do not connect new or modified NAS equipment to NAS power systems until it has been proven that the new or modified equipment will not negatively affect the operation of existing NAS equipment. Procure new or modified equipment within the specifications of FAA G-2100, Electronic Equipment, General Requirements, and test the equipment to ensure the required compatibility. FAA Order 6950.2, Electrical Power Policy Implementation at National Airspace System Facilities, provides power parameters and limits to validate compatibility with other NAS systems.

c. Environmental. Power systems must comply with the environmental requirements of:

- Executive Order 12088, Federal Compliance with Pollution Control Standards;
- Executive Order 12873, Federal Acquisition, Recycling, and Waste Management;
- 40 CFR, Environmental Protection Agency (EPA);
- National Environmental Policy Act (NEPA);
- Department of Transportation (DOT) environmental directives;
- FAA environmental directives;
- Applicable state, and local environmental laws and regulations.

d. Energy Efficiency. Power systems must comply with:

- The Energy Policy Act of 1992;
- Executive Order 13212, Actions to Expedite Energy-related Projects, 5/18/01;
- FAA Standard 033
- Use of renewable power sources must be considered when cost-effective.

e. Electrical Safety. Design, install, operate, and maintain electrical power systems to provide a safe and hazard-free work environment. Train facility personnel in safety practices and guidelines. Design power systems to comply with Occupational Safety and Health Administration regulations and the safety requirements of the National Fire Protection Association, National Electrical Code.

f. Security. With current national security threats and the critical role electrical power plays in the successful operation of the NAS, all FAA personnel and contractors must take physical, personal, and NAS information security very seriously. To this end:

- Apply FAA Order 1600.6, Facility Security Policy, in the designing and operation of NAS Power Systems.
- Power system operating personnel must follow FAA Order 1600.1, Personnel Security Program.
- Use FAA Order 1370.82, Information Systems Security Program to maintain information security.

- Apply FAA STD 026, Software Development for the National Airway Facilities, for software that provides a control function for FAA Power Systems.
- Follow FAA Order 1600.72, Contractor and Industrial Security Program.

g. Cost-Effectiveness. When specifying electrical power system requirements, you must take care to avoid unnecessary expenditures. Under-specifying reliability requirements will result in poor equipment performance and availability. Over-specifying reliability will result in excessive life-cycle costs. You can achieve cost-effectiveness by specifying accurate reliability requirements and selecting designs and equipment with respect to both the initial and life cycle costs.

9. CATEGORIES OF ELECTRICAL POWER SERVICE.

a. NAS Services are categorized by the severity of impact that loss of service will have on safe separation and control of aircraft. These NAS services, listed in Table 3-6 of the NAS-SR-1000, System Requirements Document, are:

(1) Critical Services: Services, if lost, **prevent** the NAS from exercising safe separation and control over aircraft.

(2) Essential Services: Services, if lost, **reduce** the capability of the NAS to exercise safe separation and control over aircraft.

(3) Routine Services: Services, if lost, **would not** significantly degrade the capability of the NAS to exercise safe separation and control over aircraft.

b. Electrical Power Services that support the NAS services are:

(1) Critical power is that portion of a facility electrical distribution and generation system that provides power to the equipment operating in support of critical air traffic control functions or services.

(2) Essential power is that portion of a facility electrical distribution system and generation system that provides power supporting essential air traffic control functions or services.

(3) Routine power is that portion of a facility electrical distribution system that provides power to the equipment supporting routine functions or services.

(4) Conditioned power is that portion of a facility electrical distribution and generation system that provides conditioned power to equipment to achieve the required system equipment performance.

c. Electrical Power Buses are identified by the highest level of NAS service they support. A bus supplying power to a critical NAS service is a Critical Bus. A bus supplying power to an essential NAS services is an Essential Bus. A bus configured for the purpose of improving the

supplied power quality is a Conditioned Power Bus. FAA Order 6950.2, Electrical Power Policy Implementation at NAS Facilities, identifies NAS service system power by facility type.

10. **IMPLEMENTATION**. Select electrical power designs based on the facility NAS service criticality, power source reliability, and cost effectiveness. Consider required in system reliability, cost effectiveness, system specific characteristics and local conditions. Implementation directives provide guidance for the following:

a. Critical electric power to the equipment supporting critical air traffic control functions or services.

b. Essential electrical power to the equipment supporting essential air traffic control functions or services.

c. Routine electrical power to the equipment supporting routine functions or services.

d. Conditioned power to equipment requiring it to achieve the required service equipment performance.

e. Backup power sources for CPA runways to sustain services for the safe landing of aircraft in case of area wide failure.

11. **RESPONSIBILITIES**.

a. Technical Operations Service:

(1) Establishes subordinate policies, directives, standards, specifications, and maintenance orders ensuring uniform policy application.

(2) Designs, procures, installs, operates, and maintains NAS facility power systems.

(3) Reviews and approves proposed ATC systems being introduced into the NAS via the NAS Change Proposal (NCP) to assure compatibility with current equipment and the existing power systems.

(4) Coordinates proposed changes to the list of CPA runways (Appendix 1, Continuous Power Airports and Current Runway Codes, provides the listing of specific CPA airports and runways).

(5) Regional Service Areas provide all necessary field and technical support for recommending modifications and power sources, or combinations, based on knowledge of local conditions and facility performance requirements, quality of power sources available, and changing facility conditions.

b. System Operations Service:

(1) Identifies and coordinates air traffic operational requirements with all services or offices affected by this order.

(2) Reviews and validates new and/or proposed changes to the list of CPA runways (Appendix 1).

c. En Route and Oceanic Service; Terminal Service; and Flight Services Service identify requirements and authorize funding for power system requirements for all facilities in their line of business.

d. Office of Airport Safety and Standards issues guidelines to ensure implementation of this policy for facilities funded under the Airport Improvement Program.

e. Flight Standards Service coordinates flight operational requirements with other services and offices affected by this order.

f. FAA Logistics Center provides support for managing the nationwide tracking, distribution, relocation, transportation, engineering, and repair services for NAS power system equipment, components, and supplies.

g. Regional Service Areas contract for utility services for all NAS facilities with the local provider.

h. Acquisition and Business Services, Workforce Development determines the need for and type of training on related equipment.

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APPENDIX 1. CONTINUOUS POWER AIRPORTS AND CURRENT RUNWAY CODES [1]

Airport (Code)	Runway (Code)	Airport (Code)	Runway (Code)
Albuquerque (ABQ)	8	Milwaukee (MKE)	1
Andrews AFB (ADW)	1L	Minneapolis (MSP)	30L
Anchorage (ANC)	06R	Nashville (BNA)	2L
Atlanta (ATL)	9R	Newark (EWR)	4R
Baltimore (BWI)	10	New Orleans (MSY)	10
Bismarck (BIS)	31	New York (JFK)	4R
Boise (BOI)	10R	New York (LGA)	22
Boston (BOS)	4R	Oklahoma City (OKC)	35R
Chicago (ORD)	14R	Omaha (OMA)	14R
Charlotte (CLT)	36L	Ontario, California (ONT)	26L
Cincinnati (CVG)	36	Philadelphia (PHL)	9R
Cleveland (CLE)	6R	Phoenix (PHX)	8
Dallas/Fort Worth (DFW)	17C	Pittsburgh (PIT)	10L
Denver (DEN)	35R	Reno (RNO)	16R
Des Moines (DSM)	31	Salt Lake City (SLC)	34L
Detroit (DTW)	3R	San Antonio (SAT)	12R
El Paso (ELP)	22	San Diego (SAN)	9
Fairbanks (FAI)	1L	San Francisco (SFO)	28R
Great Falls (GTF)	3	San Juan (SJU)	8
Honolulu (HNL)	8L	St. Louis (STL)	30R
Houston (IAH)	26	Seattle (SEA)	16R
Indianapolis (IND)	5L	Tampa (TPA)	36L
Jacksonville (JAX)	7	Tulsa (TUL)	35R
Kansas City (MCI)	19R	Washington (DCA)	1
Los Angeles (LAX)	24R	Washington (IAD)	1R
Memphis (MEM)	36L	Wichita (ICT)	1L
Miami (MIA)	9L		

Note 1
Appendix 1 provides a listing of specific CPAs and runways. Changes to a CPA runway designation must be coordinated, in writing, between Systems Maintenance Office (SMO), Air Traffic Manager (Operations), and the Airport Authority (Airport Manager). The SMO is responsible for the proper notifications, listing the new runway, change date, and the complete required coordination.