File

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ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

SUBJECT: A FUEL/ENERGY CONSERVATION GUIDE FOR AIRPORT OPERATORS

1. PURPOSE. This advisory circular identifies potential areas where fuel and energy usage can be conserved to assist airport operators in their voluntary actions in reducing fuel and energy consumption. Appendices 1 and 2 contain specific suggested areas.

2. GENERAL.

   a. The Nation faces a critical shortage of fuel and other forms of energy. To meet this situation, the Nation must take strong effective countermeasures. The President has set as a national goal, the independence of the United States from reliance on other nations for fuel, the development of new domestic sources, and the expansion of those already in production. Actions have already been taken through legislation to enable greater production and to spur the development of fuel and energy resources to meet these goals. As an interim measure, the President has launched a nationwide energy conservation drive with a goal of seven percent reduction in energy consumption by the Federal Government and a five percent reduction by the general public within the next year.

   b. Recent actions, such as the passage of the Alaskan Pipeline legislation, to increase domestic supplies have been implemented. However, oil from the large North Slope reserve is not anticipated to be delivered by the pipeline until 1977. In the meantime, efforts such as allocation of fuel oil and conversion to coal burning systems are being taken where possible to keep essential facilities and industries in operation.

   c. The Administrator has stated that the FAA will review its air traffic control procedures to see what changes can be made to expedite traffic flow and thus conserve fuel from that direction. In addition, he has encouraged airports to use the FAA airport grant-in-aid programs to increase airport operational capacities.

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3. USE OF GUIDELINES. Airport operators, in their review of their operations and procedures to identify areas where fuel and energy can be conserved, should use these guidelines as an aid to stimulate ideas for further savings. In the implementation of these energy conservation measures, only those changes that will not lower the level of safety should be implemented. The services of local FAA Airports District Offices and Regional Offices (see AC 150/5000-3B) personnel are available to assist in this effort.

4. HOW TO OBTAIN ADDITIONAL COPIES OF THIS CIRCULAR AND OTHER REFERENCES. Additional copies of this circular, AC 150/5240- , A Fuel/Energy Conservation Guide for Airport Operators, as well as reference a below, may be obtained free of charge from the Department of Transportation, Distribution Unit, TAD-484.3, Washington, D.C. 20590.

   a. Advisory Circular 150/5000-3B, Address List for Regional Airports Divisions and Airports District Offices.

   b. The Asphalt Handbook (MS-4) may be obtained from the Asphalt Institute, Asphalt Institute Building, College Park Maryland 20740.

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APPENDIX 1. GUIDELINES FOR FUEL/ENERGY CONSERVATION ON AIRPORTS

Following are areas where possible fuel/energy savings may be achieved.

1. LIGHTING.

   a. Street lighting.

   b. Auto parking area lighting.

   c. Lighting in public waiting areas, concourses, concession areas, and administrative areas.

   d. Apron and aircraft parking area lighting.

   e. Taxiway and runway lighting.

   NOTE: Airports which have grant agreements, surplus property agreements, or certification agreements with the Federal Government should consult the local FAA Airports District Office or Regional Airports Division personnel if changes will affect those agreements prior to making the changes. It is of utmost importance that users be advised of changes in the airfield lighting arrangements, such as going from runway lights being on all night to lights on by request or by radio control operation. To accomplish this notification, an appropriate Notice to Airmen (NOTAM) should be issued as well as using other effective means, such as state aviation publications.

2. POWER, HEATING, AND AIR CONDITIONING.

   a. Adjust heating and air conditioning controls to reduce demand on fuel and electrical power.

   b. Reduce use of escalators, people movers, and elevators during period of low activity.

   c. Install dock curtains at cargo loading docks to prevent heat loss around rear of trucks and door openings.

   d. Install shades and/or curtains on windows to reduce heat loss/gain in building areas.

   e. Make prudent use of all motor driven equipment, such as baggage handling conveyors and tractors.

   f. Keep heating and cooling equipment in good operating condition.

   g. Determine need for improving building insulation, including installation of storm windows/doors and weather stripping.

h. Reduce washroom and kitchen water heat temperature consistent with local health authority requirements.

3. ADMINISTRATION.

a. Review airport operations manual to determine if requirements or procedures can be changed that will provide a fuel savings.

b. Review fire department training and practice procedures for potential fuel savings.

c. Review airport procedures to determine what actions can be deferred or time intervals extended between actions where energy or fuel savings can be achieved.

d. Pursue an active energy conservation program with concessionaires, tenants, and Fixed Base Operators.

APPENDIX 2. GUIDELINES FOR FUEL/ENERGY CONSERVATION ON AIRPORTS - CONSTRUCTION AND MAINTENANCE

The following are examples of where fuel/energy savings may be achieved. An engineering analysis for each project should be conducted for identifying savings.

1. Construct taxiways, aprons, holding aprons, or other facilities that will expedite the movement of aircraft on the ground.

2. Substitution of asphalt emulsions in lieu of cut-back asphalts and road oils.

3. Reduction of mixing temperatures for hot-mix asphalt concrete mixtures. Normally, hot-mixes are produced at the lowest practical temperature that will permit proper mixing, lay-down, and compaction. Unfortunately, as a practical matter, the temperature of mixing is further controlled by the temperature needed to dry the aggregate. For maximum energy conservation, the contractor must employ all practical methods to produce and supply aggregates to the dryer at the lowest possible moisture content. This will permit dry-aggregates to enter the pugmill at the lowest possible temperature, but not less than 225 degrees Fahrenheit. The mixing temperature can then be further adjusted so that the particular asphalt cement being used will have a kinematic viscosity near 300 centistokes at the mixing temperature. Data on the temperature-viscosity relationship is most important to consideration of lower mixing temperatures and should be obtained from the producer of each asphalt cement used. Manual Series 4 (MS-4) titled "The Asphalt Handbook" contains more information and is published by the Asphalt Institute. When using lower temperature mixes, it may be necessary to require insulation of trucks or other hauling units in order to retain enough heat for spreading and compaction.

4. Avoiding cold weather operations that would require heating of aggregates and mixing water for concrete production.

5. Using asphalt-rejuvenation and light scarification in lieu of heater-planer operation.

AC 150/5240-7

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