

Jack Adams  
26 April 2007

# *MTS Technologies, Inc.*

Management and Technical Services

**2007 Joint Service Power Expo**

**Data Systems for Enhanced  
Power and Energy Management**

***MTS Technologies, Inc.***

Management & Technical Services

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***MTS Technologies, Inc.***

# *MTS Technologies, Inc.*

Management and Technical Services



- **Founded in July 1991**
- **Minority/veteran-owned**
- **Dedicated staff of experienced management and technical professionals**
- **Strategically located throughout the U.S.**
- **Solid history and past performance**

# Energy Sector Support Areas

**Disaster Management  
and Recovery**

**Systems Analysis  
and Integration**

**Energy Assurance  
and Reliability**

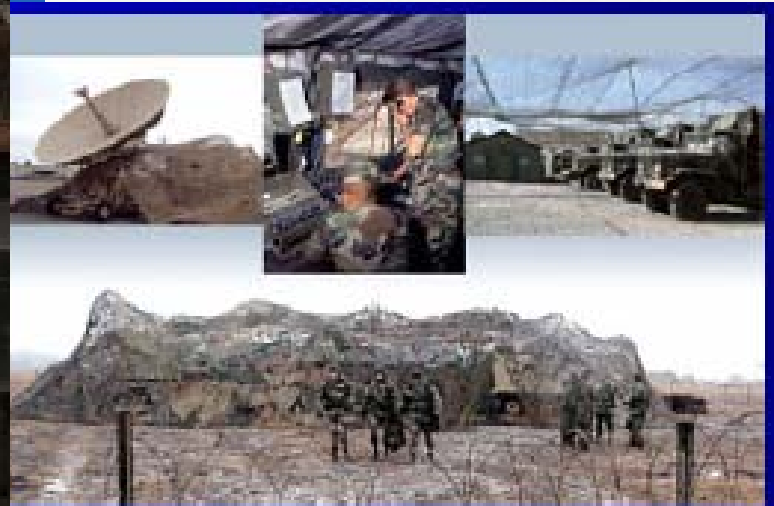
**Training, Simulation, and  
Scenario Planning**

# Briefing Outline

## Use Data Systems to:

- Effectively manage power and energy systems
- Monitor and correlate power and energy availability and demand
- Optimize power and energy availability using alternative energy technologies
- Accrue Benefits for Enhanced Power and Energy

# Energy Needs Differ

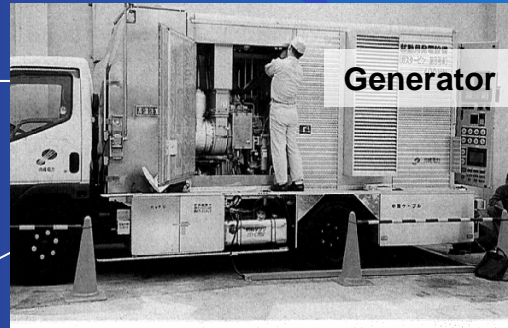


# Energy Supply Differs



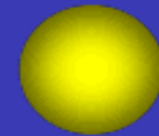
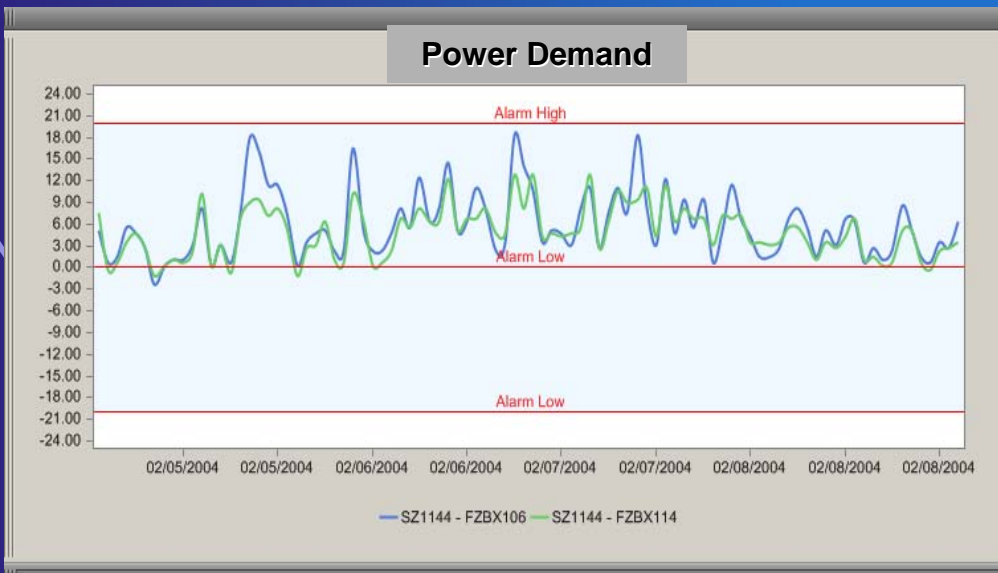
# Energy Needs and Supply

- Monitor generation
- Optimize
  - fuel use
  - availability
  - reliability
  - risk
- Correlate
  - traditional (gensets)
  - alternative (fuel cell)
  - renewables (solar, wind, fuels)



# Monitoring and Correlation

- Comprehensive Monitoring
- 24x7x365 Alert Notification



Source: Profile Systems, LLC



# Monitoring and Correlation



# Monitoring and Correlation

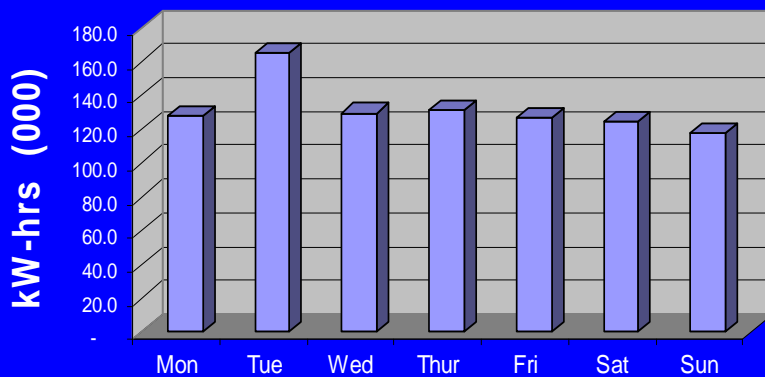
Energy Use per Day

	kW-hrs	% Tot	Cum %
Mon	127,587	13.8%	13.8%
Tue	164,746	17.9%	31.7%
Wed	129,599	14.1%	45.8%
Thur	131,054	14.2%	60.0%
Fri	126,926	13.8%	73.8%
Sat	124,347	13.5%	87.3%
Sun	117,381	12.7%	100.0%
Total	921,640	100.0%	100.0%

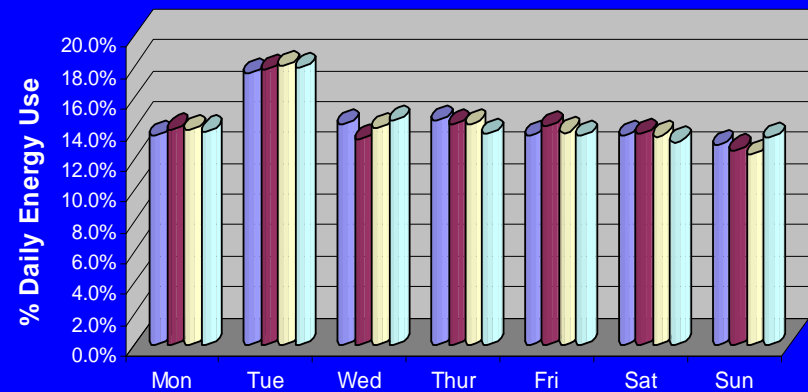
Energy Use per 6-Hour Period

	12 - 6 am	6 - 12 am	12-6 pm	6 - 12 pm
Mon	13.6%	14.0%	13.9%	13.9%
Tue	17.6%	17.8%	18.1%	17.9%
Wed	14.3%	13.4%	14.1%	14.5%
Thur	14.5%	14.3%	14.3%	13.7%
Fri	13.6%	14.2%	13.7%	13.5%
Sat	13.6%	13.7%	13.5%	13.1%
Sun	12.9%	12.6%	12.4%	13.4%
Total	100.0%	100.0%	100.0%	100.0%

Energy Use per Day



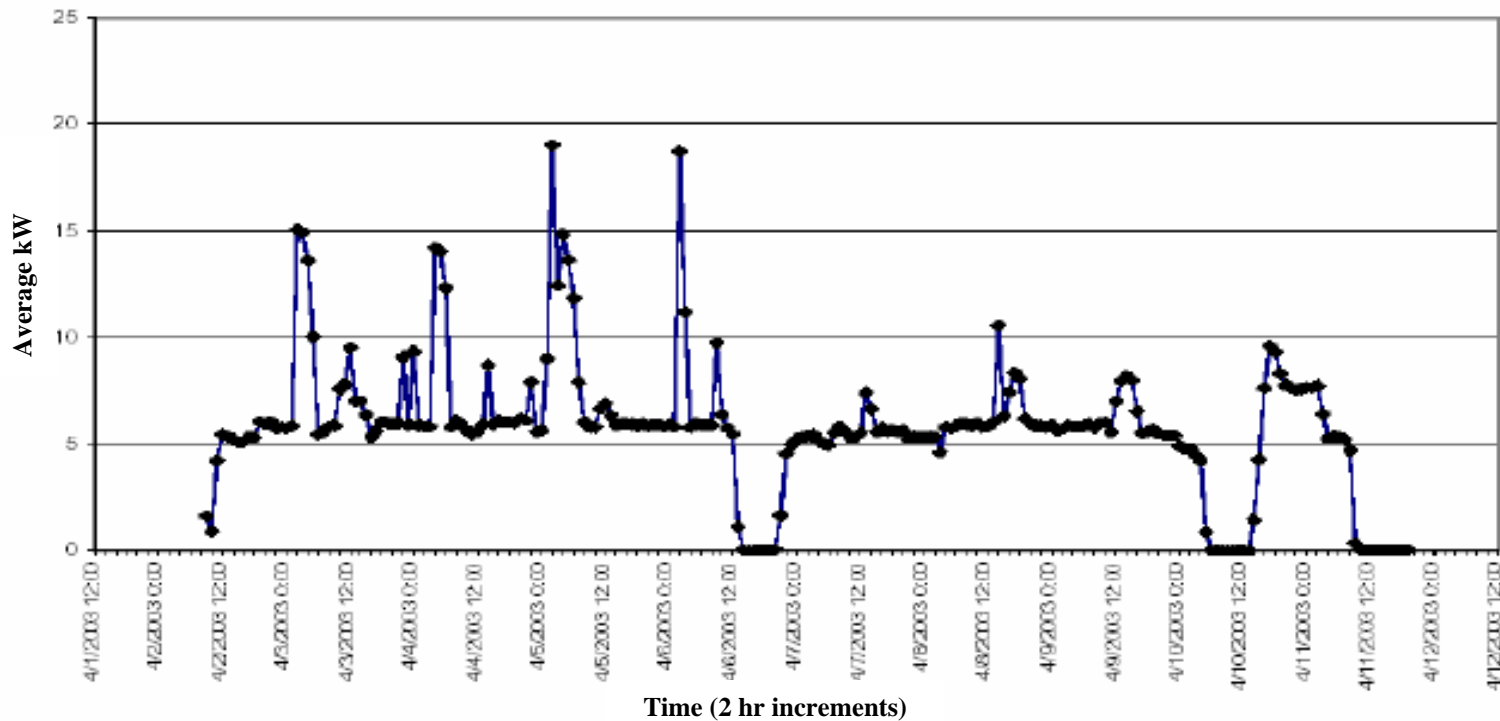
Energy Use per 6-Hour Period



Source: U of Miami

# Monitoring and Correlation

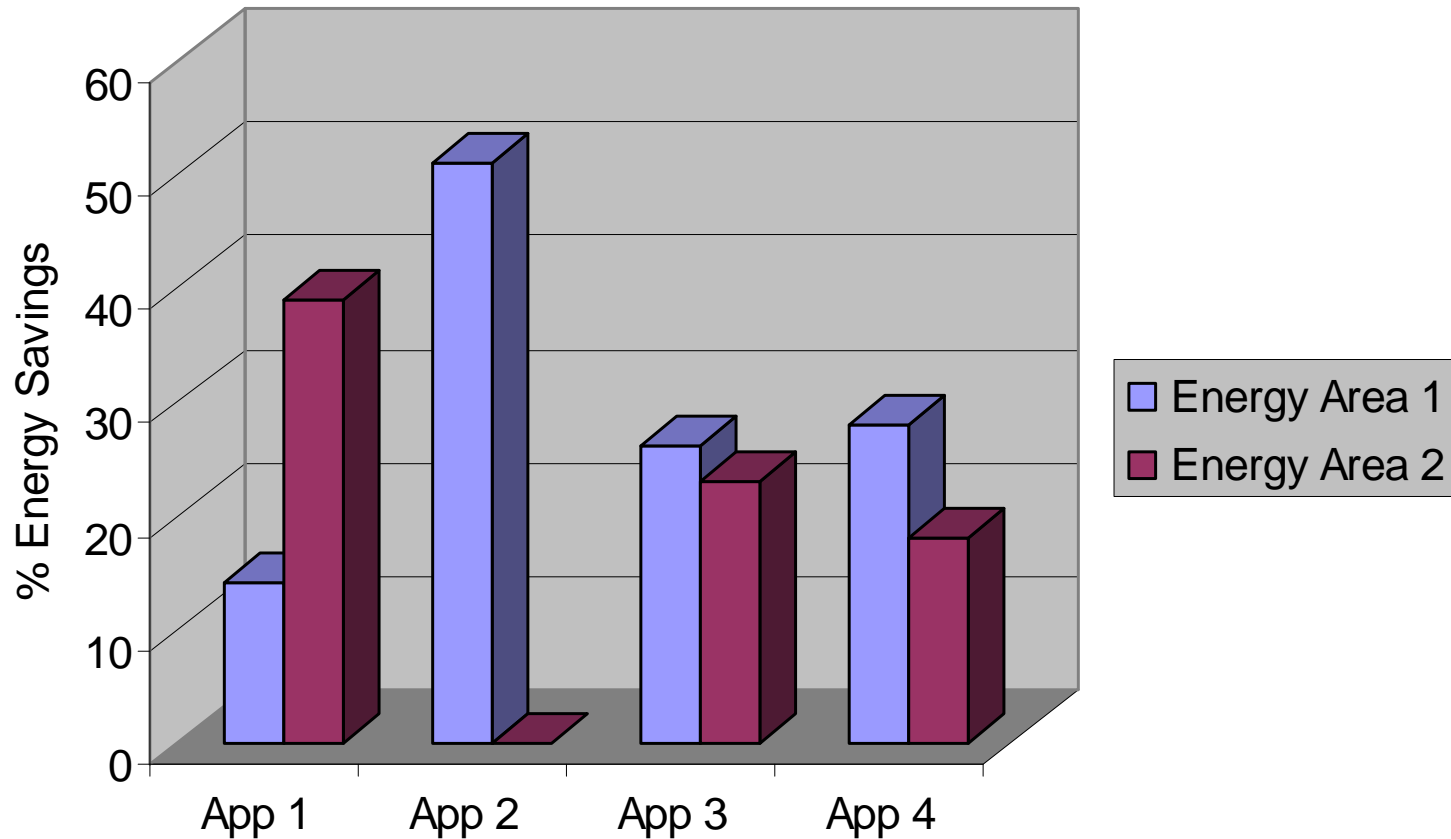
## Actual Tactical Operations Center (TOC) Load Profile



Source: CERL - ERDC

# Benefits of Effective Power and Energy Management

## Measurement and Verification Results



Source: Profile Systems, LLC

# Optimize Generation Alternatives



- Fuel storage
- Fuel availability
- ‘Local’ resources



# Benefits of Effective Energy Data Management

- **Enhanced Awareness**
- **Improved Reliability / Assurance**
- **Improved Logistics**
- **Reduced Maintenance**
- **Archived Supply / Use Data**
  - Events
  - Trends
- **Reduced Costs**

# Discussion

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