...as much as I'm enjoying playing with the tiny boats, gentlemen, let's cut to the chase—when can I get more shiny things for my jacket?!
Energy Conservation: Energy Audits and Project Development
Live Free or Conserve Hard
**WWJD – What would John McClane Do?**

**Summary**

- Starting your Program
- Choosing an Energy Auditor
- Statement of Work
- Before the auditors arrive
- When the auditors arrive
- Reviewing the Concept Report
- Reviewing the Pre-Final Report
- After the audit is done
Come out to the Coast, we’ll have a few laughs
Starting your program

- EO13423, EISA 2007, EPACT 2005, Command Memos, AF Doctrine

- End Goals
  - 30% reduction in Consumption
  - 1.5% increase per year in renewable energy (25% by 2025)
  - 15% increase in high performance buildings
  - 30% reduction in water consumption
  - 100% of new facilities to be net zero by 2030
  - 20% reduction of petroleum use by 2015

- Decisions to be made
  - Control of the Program
  - Drawing the Box around your Program
  - Working with others

- Create a baseline

  – “Wow, that’s a large undertaking.”
I didn’t say Park Drive, I said, through the Park.

Choosing your Energy Auditor

- Some energy auditors will only show you where the bad guys are
  - Identify problems: “You need to reduce solar heat load.”
- You want an auditor that will:
  - Show you where the hostages are (Identify Problems)
  - Point out how to neutralize them (Identify Solutions)
  - Help you find the guns, explosives the bad guys left behind (Identify Costs)
  - Watch your back as you jump from the top of the building/subway/cargo jet/JSF (Provide Justification)
  - “You need to reduce solar heat load at X buildings, by installing these Y technologies, costing Z to install, and should show a payback of Q years.”
- The end goal of the auditor is to provide a list of “feasible” projects with justification that can be planned, programmed, funded, and executed as funds become available.
That’s what makes you that guy. Preparing the statement of work

- Pick the buildings to be audited
  - 25%/75% rule
  - Standardization is your friend
  - Square footage does not an energy hog make
- Decide what you want evaluated
  - Water/Fuel
  - Whole Building
  - Renewable Energy
  - Energy Security
  - Base Infrastructure
    - Airfield/Parking Lighting
    - Generators/Transformers/Line sizes
- Commit to involvement
  - Review
  - Provide information
You gotta send the cavalry in…
Before the auditors arrive

- Utility Bills, DUERS reports, sub-metering data (if available)
- Building Drawings
  - As-builts
  - Fire Plans/Layouts
- Base Infrastructure
  - Maps
  - Equipment Lists
    - HVAC
    - 400hz
    - Process
    - Generators/Transformers
- Prior Energy Studies
- Energy Management Control System
Al, put down that Twinkie and grab a pen. When the Auditors arrive

- **Base Access**
  - Foreign Nationals
  - Escorts
  - Access to restricted facilities
  - Access to data
  - Access to secure facilities
  - Flight line access
  - Access to CE staff

- **Information Flow**
  - In-brief
  - Informing staff
  - Informing facility managers
  - Providing assistance
  - Minimizing impact to operations
  - Out-brief
Or would that be under “M” for Miscellaneous
Reviewing the Concept Report

- Opportunity for Holistic view
- No Financial Data
- Provide Feedback on Technologies Presented
  - Likes
  - Dislikes
- Increase communication
  - Upcoming projects (Facility Action Board)
  - Demolished/Decommissioned/Under Construction Buildings
- Data gaps
  - Anecdotal information from staff
  - Data Calls
- Education
There’s gold in the federal reserve and they just took a ton of it...

Reviewing the Pre-Final Report

- Programming
  - No-Cost
  - Low-Cost
- Grouping of Like Projects
  - Horizontal
  - Vertical
- Execution Strategy
  - Design
  - Design/Build
  - MILCON/ECIP
  - SABRE
  - O&M
  - ESTCP
  - Further Studies
  - Third Party Financing
Oh, the weather outside is frightful…
After the audit is done.

- Programming into ACES
- Answering Data Calls
- Further studies
  - Ground Source Heat Pump Feasibility
  - Renewable Energy Feasibility
  - Wind to Hydrogen Feasibility
  - Net-Zero Feasibility
- Designs
  - Decentralization
  - Centralization
- Construction
  - Design Build
  - Third Party Financing
- Measurement and Verification
Yippee-Kye-Yaa…

Conclusion

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You know, I was always partial to Roy Rodgers. I really liked those sequined shirts.

Any More Questions?

See me after.

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