



SPIDERS

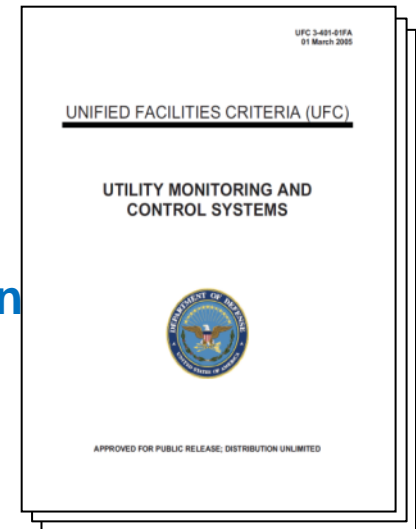
Fort Carson Industry Day Presentation

Steven Guzinski, P.E.
NAVFAC EXWC

4/25/2014

Transition Plan

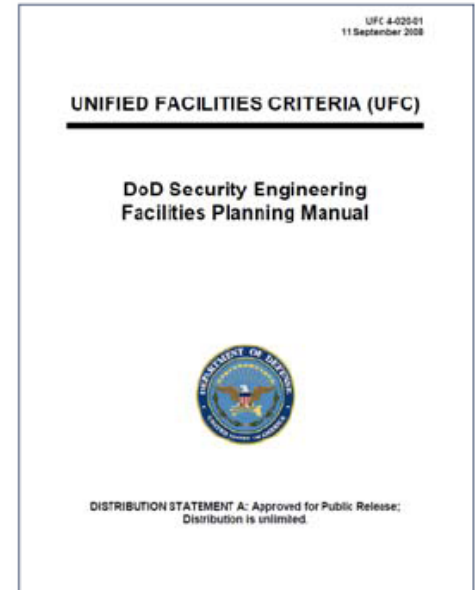
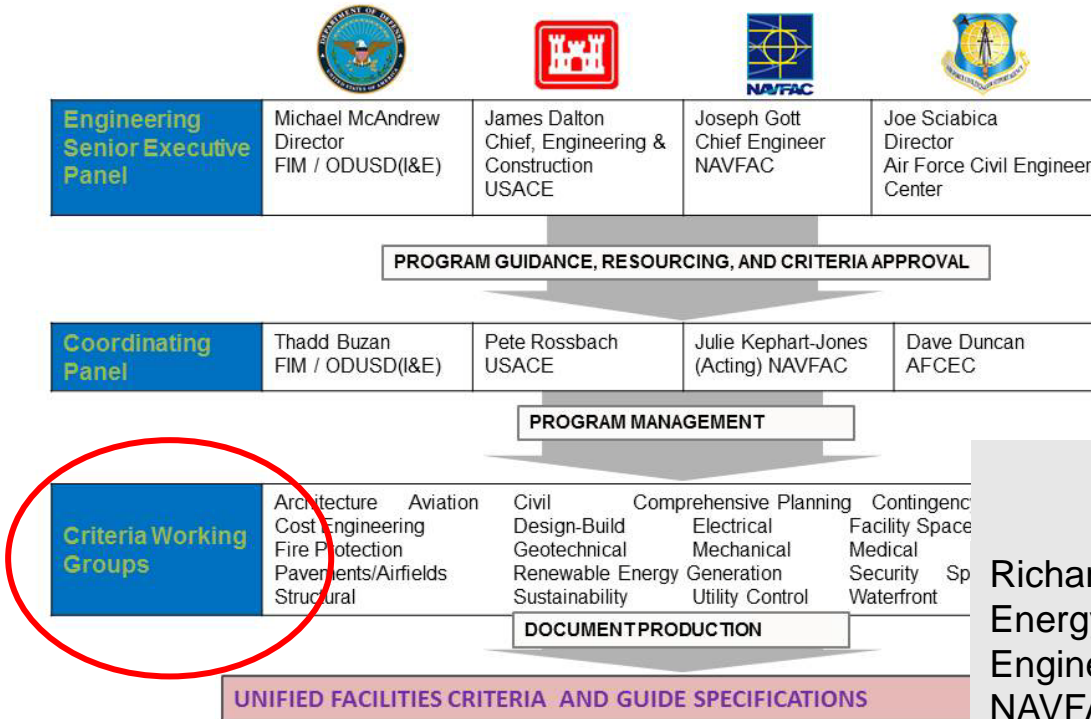
- **Transition Products and Deliverables**
 - NAVFAC Lead; Pacific Northwest Nat'l Lab (PNNL) support
 - DIACAP certification, Platform IT accreditation
 - Reports, CONOPS and TTP
 - HW and SW system specification and architecture packages
 - Training Package, Safety Requirements, O&M Manuals, Spares
 - Demonstration Results, Performance Data, Business Case Data
 - Residual Equipment
- **Key Transition Steps, Actions and Activities**
 - Determine Key End-User Performance Metrics
 - DoD Unified Facilities Criteria (UFC) Review
 - DoD UFC Change Requests; New UFC Development
 - Data Delivery to DOE, DHS, Industry
- **Industry Transition**
 - Utility Reps: APPA, EEI, EPRI, NRECA
 - Policy/Regulatory: FERC, NERC, NARUC, NASEO, MEG
 - Standards: NIST
 - Equipment Manufacturer Assoc: UCA, NEMA



Uniform Facility Criteria and Guide Specifications A Tri-Service Program



UFCs are highest criteria level for DoD Facilities Planning



**SPIDERS is Engaged w/
Discipline Working Groups**

Richard Tyler CIV NAVFAC LANT, CI
Energy Criteria Manager
Engineering Criteria and Programs Office
NAVFAC Atlantic

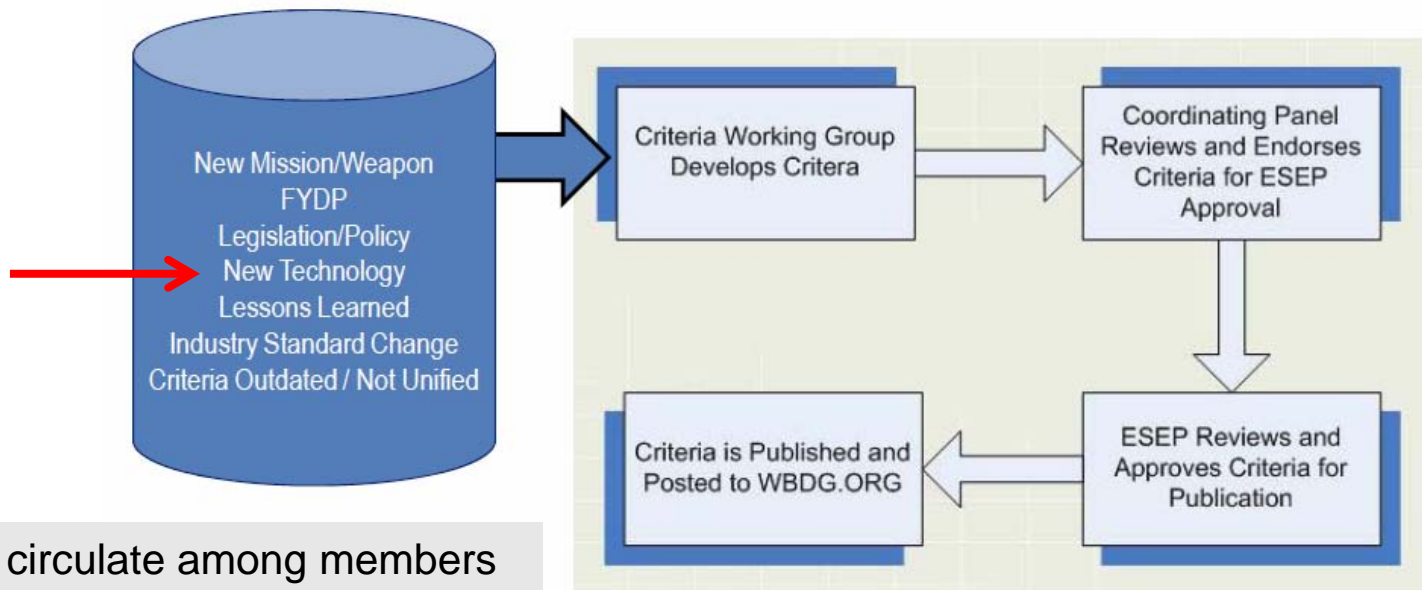
- John Peltz, Electrical DWG
- Emil Consolacion, Mechanical DWG
- Julie Kephart-Jones, Sustainability DWG

DoD Unified Facilities Criteria Process



INPUTS Criteria Change Request (CCR)

**SPIDERS Team
UFC Reviews
(CCR Forms)
Submitted
March 5 '14**



1. CCR forms circulate among members of tri-service team
2. One form per UFC
3. Comments are reconciled
4. UFC is modified

~ 3 to 5 year cycle or as needed

UNCLASSIFIED NAVFAC Northwest November 2012

UFCs Reviewed



UFC Document Review & Comment Form		DATE:
FROM (Agency or Command):		
CODE:		
DOCUMENT: UFC 1-200-02: HIGH PERFORMANCE AND SUSTAINABLE BUILDING REQUIREMENTS		VERSION: 1 March 2013
REVIEWER:		E-MAIL ADDRESS:
COMM PHONE NUMBER:	DSN PHONE NUMBER:	FAX NUMBER:

NO	PAGE	PARA	C/S/A	COMMENT (Recommendation and Rationale)	RESOLUTION OF COMMENT
1	6 (16 of 69) 15 (25 of 69)	2-2.1, 3-2.1	S	<p>Recommendation: Add bullet point to Integrated Design sequential approach to "Determine whether the facility will be Microgrid Essential, Supported, or Discretionary. Select and integrate into the design strategies to support the microgrid."</p> <p>Rationale: The addition of microgrid capabilities is equivalent to adding a major building system and potentially integrates with all other major building systems such as Architecture, HVAC, plumbing, and structural. It can potentially impact high performance criteria such as indoor air quality, indoor environmental quality, and energy.</p>	
2	8 (18 of 69) 17 (27 of 69) 35 (45 of 69)	2-4.2, 3-4.2, 4-4.2	C	<p>Recommendation: replace "limit the risk to" with "ensure that the renewable system enhances"</p> <p>Rationale: Properly executed, renewable systems enhance reliable, timely, and cost-efficient delivery of energy.</p>	

UFCs Reviewed

UFC Number	Name	Comment
ufc_1_200_02	HIGH PERFORMANCE AND SUSTAINABLE BUILDING REQUIREMENTS	Comment form submitted ufc_1_200_02_CCR(2) 13.11.26
ufc_3_501_01	ELECTRICAL ENGINEERING	Comment form submitted ufc_3_501_01_CCR(2) 13.11.26
ufc_3_401_01	MECHANICAL ENGINEERING	No Comments
UFC 3-410-01	Heating, Ventilating, and Air Conditioning Systems	Comment form submitted ufc_3_410_01_CCR(0) 14.03.05
UFC 3-410-02	Lonworks (R) Direct Digital Control for HVAC and Other ...	No Comments
UFC 3-470-01	Lonworks (R) Utility Monitoring and Control System (UMCS)	No Comments
ufc_3_520_05	STATIONARY BATTERY AREAS	No Comments
ufc_3_540_04n	DIESEL ELECTRIC GENERATING PLANTS	No Comment. This UFC is due to be deleted as per UFC 3-501-01 Appendix B Future Plans.
ufc_3_550_01	EXTERIOR ELECTRICAL POWER DISTRIBUTION	Comment form submitted ufc_3_550_01_CCR(0) 14.03.05
ufc_3_560_01	ELECTRICAL SAFETY, O & M	Comment form submitted ufc_3_560_01_CCR(0) 14.02.28

CCR Sample

Future direction - New UFCs



- Two new Criteria Working Groups have recently been established



DISCIPLINE WORKING GROUP

Electrical Working Group	Elaine Wales USACE	John Peltz NAVFAC	Rex Belleville AFCEC
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FUNCTIONAL WORKING GROUP

Renewable Energy Generation WG	CDR Matt McCann ODUSD(I&E)	Elaine Wales USACE	David Gillikin NAVFAC	Rex Belleville AFCEC
Utility Control WG	Daryl Haegley ODUSD(I&E)	Elaine Wales USACE	Tony Ammons NAVFAC	Tarone Watley AFCEC

DOCUMENT PRODUCTION

UNIFIED FACILITIES CRITERIA AND GUIDE SPECIFICATIONS

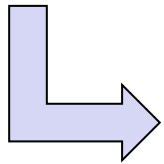
Industry Transition



IEEE tends to be an important Industry Standard

IEEE Std 1547 [2003 updated 2012]

Standard for interconnecting Distributed Resources with Electrical Power System



IEEE Std 1547.4 – 2011

Guide for Design, Operation, and Integration of Distributed Resource Island Systems with Electrical Power Systems

Distributed Resource Islands = Microgrid

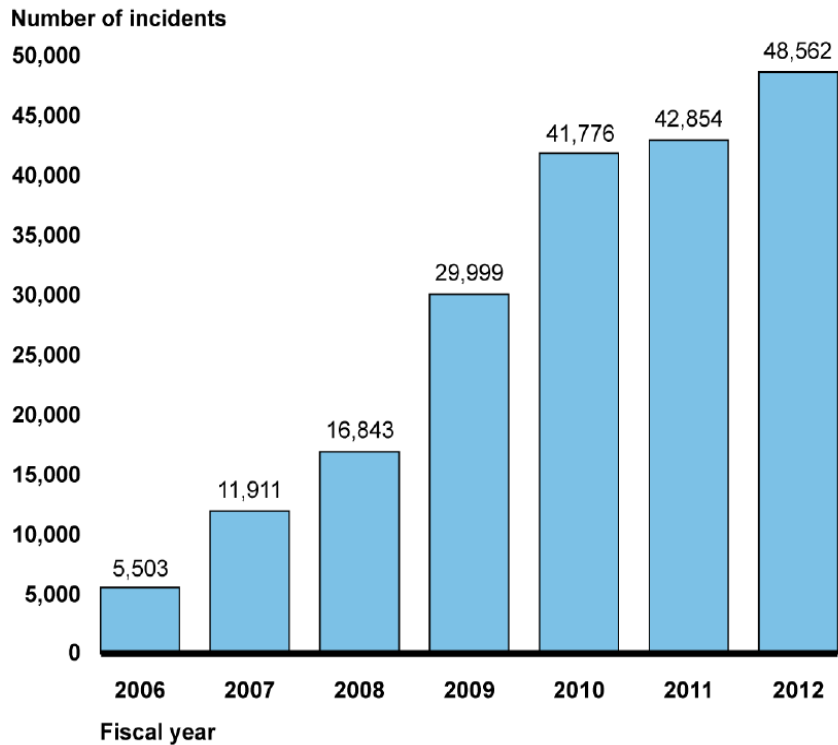
IEEE 1547.4 Introduction

(for reference)



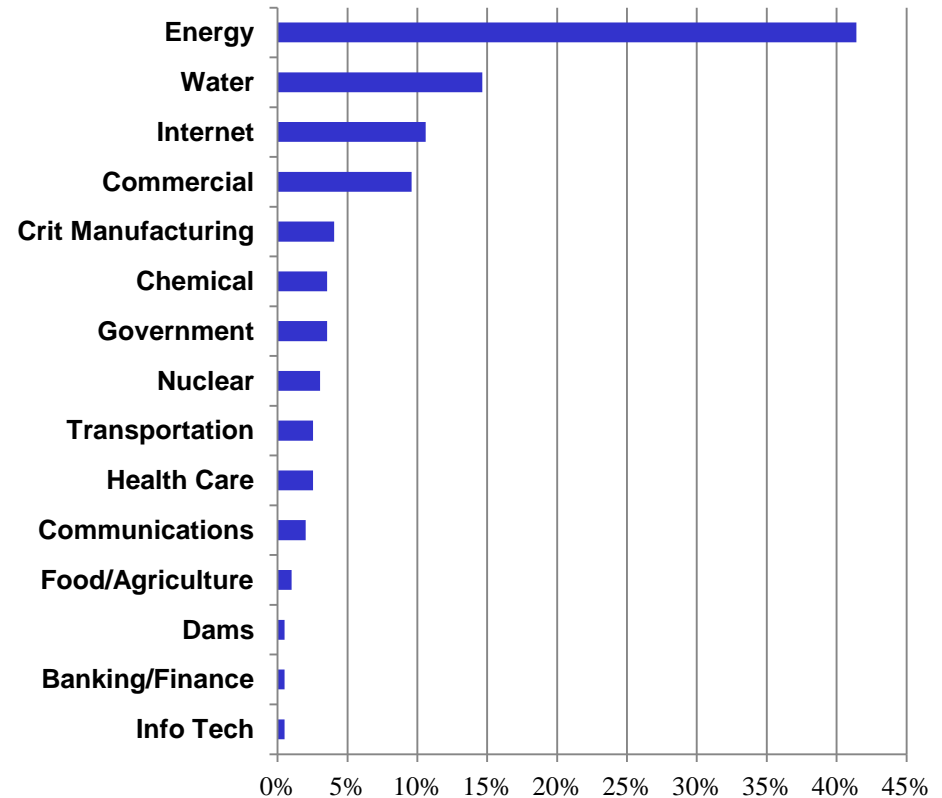
IEEE Std 1547.4 is part of the IEEE 1547™ series of standards. The IEEE 1547 series of standards was created to develop a national consensus on using distributed resources (DR) in electric power systems (EPSs). IEEE Std 1547.4 was specifically developed to address the lack of information included in IEEE Std 1547-2003 regarding intentional islands. This document covers intentional islands in electric power systems (EPSs) that contain DRs. IEEE created a new term *DR island systems* to generically refer to all intentional island systems that could include local and/or area EPS. The term DR island systems, sometimes referred to as *microgrids*, is used for these intentional islands. DR island systems are EPSs that: (1) have DR and load, (2) have the ability to disconnect from and parallel with the area EPS, (3) include the local EPS and may include portions of the area EPS, and (4) are intentionally planned. DR island systems can be either local EPS islands or area EPS islands.

Incidents Reported by Federal Agencies



Source: GAO Report 13-187, "Cybersecurity," February 2013

Major Incidents Reported in FY12



Source: DHS ICS-CERT Monitor Oct-Dec 2012



SPIDERS Partners

- **USPACOM, USNORTHCOM
DOE, and DHS**
- **5 DOE National Laboratories**
- **USACE/ERDC-CERL**
- **Military Services**
- **Naval Facilities Engineering
Command**
- **Local Utility Companies**
- **States of Hawaii & Colorado**
- **Private Sector**



US Army Corps of Engineers
Engineer Research and Development Center
Construction Engineering Research Laboratory



U.S. AIR FORCE



U.S. ARMY



Hawaiian Electric Company



Colorado Springs Utilities
It's how we're all connected

