







# Electrical Military Workshop

Infrastructure Systems
Conference
August 05

#### **Electrical- Military Workshop**



#### **Professional Development Hours**

**Monday Through Thursday** 

19 PDHs

#### **Electrical - Military Workshop**



#### **Today (Wednesday)**

8:00-9:30 Tri-Service Criteria Overview

10:30-12:00 Lighting Criteria

**Information Technology Criteria** 

2:00-3:30 Mass Notification System

**Electronic Card Access Locks** 

4:00-5:30 Lightning Protection

#### **Electrical - Military Workshop**



#### **Thursday**

8:00-9:30 Electronic Security

Airfield Lightning Protection, Grounding & Lighting

10:30-12:00 Electrical Safety and Arc Flash Electrical Infrastructure in Iraq

#### **Electrical - Military Workshop**



#### **Thursday**

**Training Session** 

1:00-5:00 2005 NEC Code Changes









# Tri - Service Electrical Criteria

Infrastructure Systems
Conference
August 05

#### **Tri-Service Electrical Criteria**



- Origin of Tri-Service Criteria Mandate
- Introduction of Electrical Working Group
- Review of UFC and UFGS Initiatives
- Whole Building Design Guide
- Non-Government Standards Contract
- Questions

#### **DOD Unified Facilities Criteria**



- Implemented by 29 May 2002 letter from USD E.C. Aldridge
- MIL-STD-3007B, 1 April 2002, Standard Practice for Unified Facilities Criteria and Unified Facilities Guide Specifications

### **Tri-Service Electrical Working Group**



- Corps of Engineers
   Bob Billmyre
   Bob Fite
- Navy

John Peltz Richard Cofer

Air Force

Larry Strother Daryl Hammond



- Design Criteria to replace TMs, AFMANs, MIL-HDBKs, etc.
- Updates true Tri-Service documents
- Some existing Documents have been renumbered
- See UFCs on WBDG (http://65.204.17.188/report/doc\_ufc.html)

### **UFC - Progress Overview**



Series 3-500 Elect *	5 / 03	7 / 05	<b>200X</b>
<b>Total Scheduled</b>	<b>57</b>	42	22
- Unified	45	23	22
- Air Force Only	5	2	0
- Army Only	4	5	0
- Navy Only	3	12	0
Total Published	2	14	22
- Unified	2	5	22
- Air Force Only	0	0	0
- Army Only	0	3	0
- Navy Only	0	6	0

<sup>\* (5/03</sup> incl 2 in 4-020 Sec 7/05 incl 7 in 4-0xx Sec )

### **UFC - Progress Overview (Cont'd)**



Series 3-500 Elect	5 / 03	7 / 05	200X
Total In Progress	17	17	0
- Unified	5	14	0
- Air Force Only	5	0	0
- Army Only	4	1	0
- Navy Only	3	2	0
Total In Planning	38	11	0



#### Published, Tri-Service:

3-510-01	Foreign Voltages
3-520-01	Interior Electrical Systems
3-570-06	Cathodic Protection O&M
3-580-10	<b>NMCI Std Constr Practices</b>
4-021-01	<b>Mass Notification Systems</b>



#### **Published, Not Tri-Service:**

3-501-03 N	<b>Elect Eng Prelim Des Consid</b>
3-540-04 N	Diesel Elect Gen Plants
3-550-03	Exterior Elect Distrib - 2 vers
3-560-10 N	<b>Electrical Safety</b>
3-570-02	Cathodic Prot Des- 2 vers.
4-020-04 FA	<b>Electronic Security Systems</b>
4-021-02N	<b>Electronic Security Systems</b>



#### Completed, in approval process:

3-530-01 **Lighting** 

3-535-01 Airfield Lighting (Vol I)

3-580-01 Telecom, Inside Plant



#### **Final Draft in Review:**

3-575-01

3-500-10N	Elect Design (incl design-build)
3-500-05	RF Shielded Enclosures
3-560-01	<b>Electrical Safety</b>

**Lightning Protection** 

4-021-02N Electronic Security Systems



#### In Progress:

3-500-04	<b>Battery Rooms</b>
3-500-10	<b>Electrical Design</b>
3-535-02	Airfield Lighting, (Vol II)
3-550-01	<b>Exterior Electrical Distribution</b>
3-570-07	<b>Cathodic Protection Design</b>
3-580-02	Telecom, Outside Plant
4-021-XX	<b>Electronic Security PV</b>
4-021-XX	<b>Electronic Security Testing</b>
4-021-02 A	<b>Electronic Security System</b>



#### **Simple Concept**

**■ Existing:** UFGS 16xxxN

**UFGS 16xxxA** 

- Updated to: UFGS 16xxx
- Master Format upcoming
- Current Listings on WBDG

http://www.wbdg.org/design/ufg\_specs.php



#### **Master Format Overview**

- Current #'s per 1995 Const Specs Institutes (CSI)
- CSI rev and exp #'s in 2004, see (http://www.csinet.org/s\_csi/docs/9400/9361.pdf).
- Previous 16 Divs exp to 49 Divs for rapid dev areas
- Div 13 Sec to Div 28
- Div 16 Pwr Most to Div 26, Some to 33
- Div 16 Telcom & Spec Syst Most Div 27, Some 33
- Div 16 Fiber and VFDs to Div 40



#### **Master Format Overview (Cont'd)**

- Navy, Army, Air Force and NASA to MasterFormat 2004
- UFGS sect #'s use new syst to level 4 (XX XX XX.XX)
- Additional level 5 planned to replace the "A" and "N"
  - Instead of "A" use XX XX XX.XX 10
  - Instead of "N" use XX XX XX.XX 20
- Other agencies (NASA, VA, EPA, GSA) joining UFGS would carry extensions (30, 40, 50, etc)
- Goal Revised #'s early as Oct 2005

### **UFGS - Progress Overview**



	2003	2005	200X
Div 13 Spec Syst			
- Total	20	21	14
- Unified	2	5	14
- Army Only	9	7	0
- Navy Only	9	9	0
Div 16 Electrical			
- Total	77	64	49
- Unified	2	19	39
- Army Only	36	29	<b>0</b> (10cw)
- Navy Only	39	16	0



#### **Highlights**

- 16050N, Basic Elect Materials & Methods will be eliminated and content incorp in individual specs
- 16081, Apparatus Inspection & Testing adopted by all services



#### **Interior Electrical**

- 16402 incorp / replaced 16415A & 16402N
- Separate lighting specs & plates
  - Interior 16510 & Exterior 16520
- Separate sw board & sw gear spec 16442
- Separate VFD spec16261 in progress
- Unified UPS spec 16262 in progress



#### **Exterior Electrical**

- **UG 16302 in progress incorp 16375A**
- Aerial 16301 in progress incorp 16370A

With separate supporting specs for:

- 3 ph transformers 16272
- 1 ph transformers 16273
- SF6 padmount switchgear 16341N
- Secondary unit substations 16360
- Primary unit substations 16361N



#### **Engine Generators**

- Upcoming Merge 16237N with 16263A & 16264A to create one or two UFGS
- 16230N, 16231N, 16232N, 16233N, 16234N have been eliminated
- 16236N MG sets used by waiver only



#### **Electronic Systems**

- Electronic Security Merge 13720A & 13721A with 13702N & 13703N (in final new draft)
- **CCTV** new 16751 in progress
- Telecom Interior 16710 & Exterior 16711 replaced previous Army and Navy versions



#### Miscellaneous Merges

- Airfields 16522N, 16525A, 16526 A Planned
- LP- 13100N & 13100A Final draft in prog
- Cath Prot 13110-12N, 13110-12A Planned
- ATS 16410N, 16410A In progress
- Intercom 16721A, 16822N Final draft in rev
- Shielding 13092N, 13090A Planned

#### **Tri-Service Electrical Criteria**

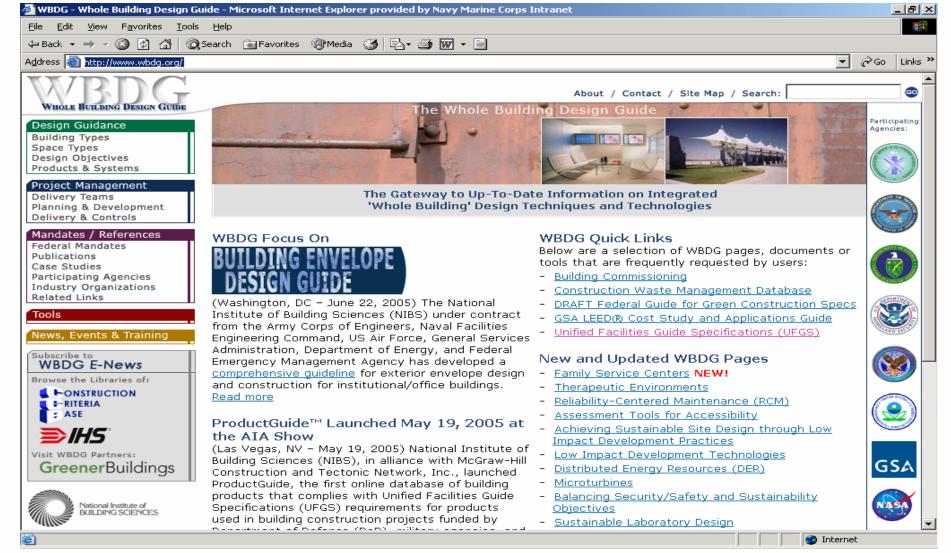


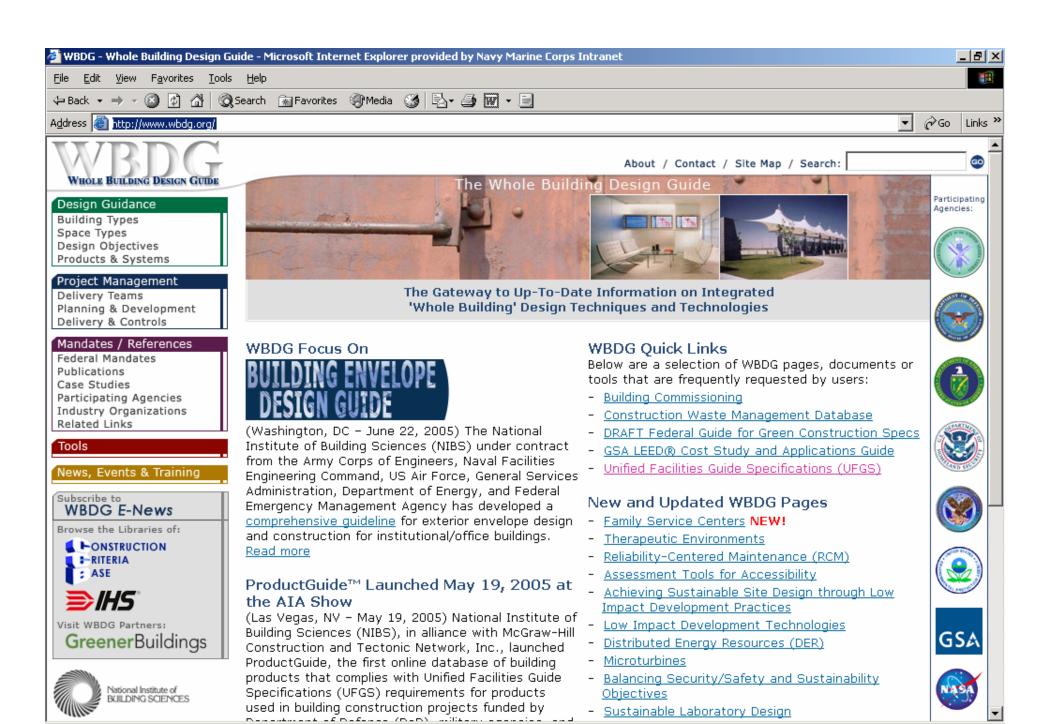
## Whole Building Design Guide "htttp://www.wbdg.org/"

- Links to UFC, UFGS, and Non-Government Standards Contract (IHS)
- IHS has most standards referenced in UFGS and UFCs
- Link to IHS via Army: "http://www.wbdg.org/pdfs/army\_ihs\_brochure.pdf"
- Link to IHS via Navy: "https://login.ihserc.com/cgi-bin/ihslogin?"

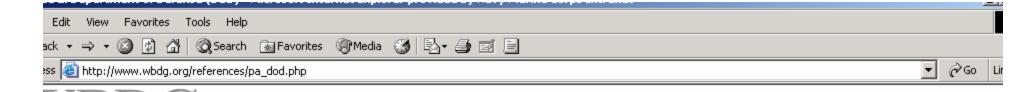
### Whole Building Des Guide (wbdg.org)











HOLE BUILDING DESIGN GUIDE

#### sign Guidance

Iding Types ice Types sign Objectives ducts & Systems

#### ject Management

ivery Teams nning & Development ivery & Controls

#### ndates / References

leral Mandates plications e Studies ticipating Agencies ustry Organizations ated Links

#### Events & Training



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#### Department of Defense (DOD)

Participating Agencies Index > Department of Defense

#### Unified Facilities Criteria Program

Unified Facilities Guide Specifications (UFGS) Unified Facilities Criteria (UFC) Technical Publications Criteria Change Request (CCR) Unified Facilities Space Program Spreadsheets

The Department of Defense (DoD) and the military services have initiated a program to unify all technical criteria and standards pertaining to planning, design, construction, and operation and maintenance of real property facilities. The objective of the Unified Facilities Criteria (UFC) program is to streamline the military criteria system by eliminating duplication of information, increasing reliance on private-sector standards, and creating a more efficient criteria development and publishing process. Both technical publications and guide specifications are part of the UFC program. Previously, each service had its own publishing system resulting in criteria being disseminated in different formats. UFC documents have a uniform format and are identified by a number such as UFC 1-300-1.

Though unification of all DOD criteria is the ultimate goal, there are instances when a particular document may not apply to all services, or some documents may have not been fully revised to reflect all service requirements before being issued in the UFC system. In these instances, the UFC or UFGS document number will be followed by an alphadesignator, such as UFC 1-300-09N or UFGS 01320A. Alpha-designators are as follows:



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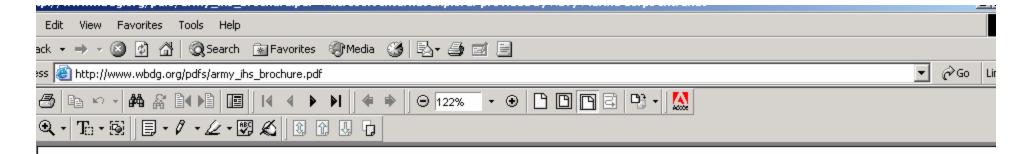
Non-Government Standards-IHS



IHS Technical Solutions



A USACE





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#### Accessing IHS Products

Go to the Whole Building Design Guide Website:

#### http://www.wbdg.org

Choose the DoD Seal from the right. This will open the DoD Unified Criteria Program web page. A link to Information Handling Services is contained in the drop-down menu beneath the USACE seal - "Non-Government Standards - IHS". Click on this link. The web site will automatically log you into the IHS subscription via your omail addross

U.S. Army Corps of Engineers Point of Contact

Robert Billmyre robert.b.billmvre@hg02.usace.armv.mil

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#### **Technical Information Solution**

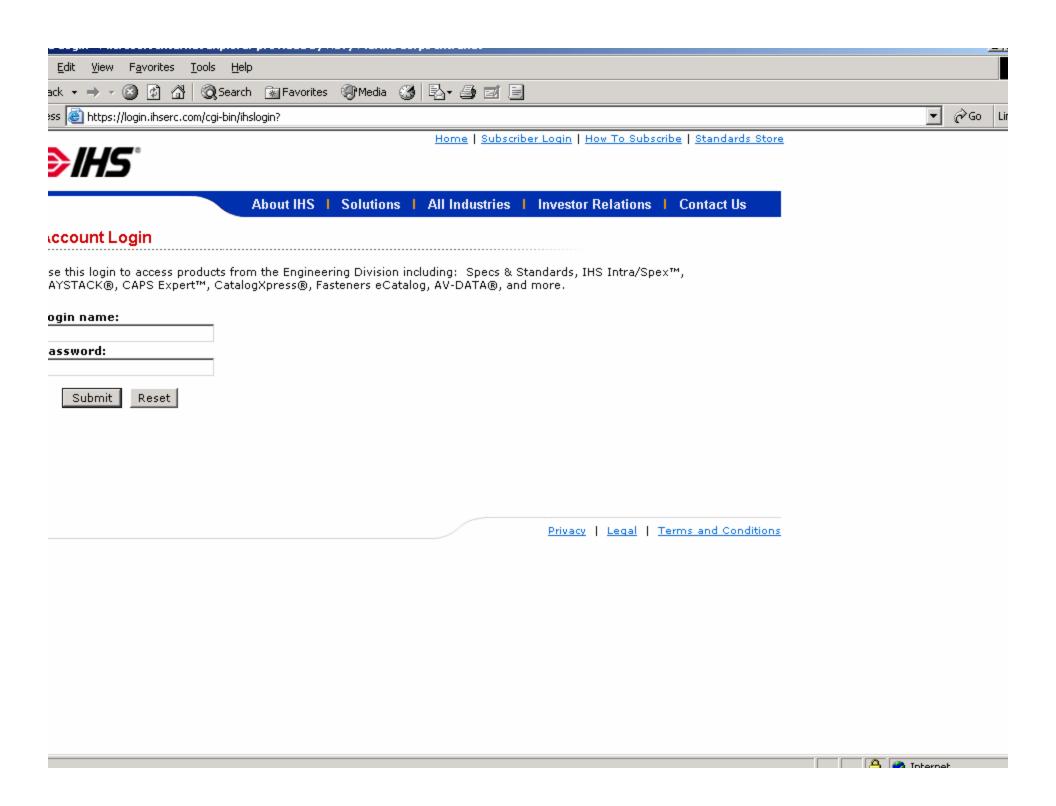


Specs & Standards

**ASME Boiler Pressure** and Vessel Code

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#### **Tri-Service Electrical Working Group**



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### **Tri-Service Electrical Working Group**



#### Any Questions ??

Thank - You!!