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# Safety Release & Safety Confirmation Process

## Perspectives on Rapid Fielding

(for NDIA Joint Power 2011 Expo)

### Presented By:

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# Purpose



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To provide a brief overview of the DTC  
safety verification process,

and

To give the perspective of:

Government Tester

Government Rapid-Developer

(...to avoid surprises in the fielding process.)



# How is This Brief Relevant to Me?



- Companies want to sell equipment to DOD!
- Most companies are addressing a need... or a perceived need.
- The government - organization buying it wants to provide solutions!
- We will use the case study and detailed ATEC information to help you further develop your project plan.



# Unit Setting:



- “Delivery” DOES NOT EQUAL “Fielding”
- FIELDING (or Rapid Equipping) includes:

## Soldiers + Equipment

- + Mission relevance
  - + Training
  - + Testing
  - + Documentation
  - + Designated “Recipient Unit”
  - + Maintenance
- (+ sometimes a helpful Catcher/Coach along the process)



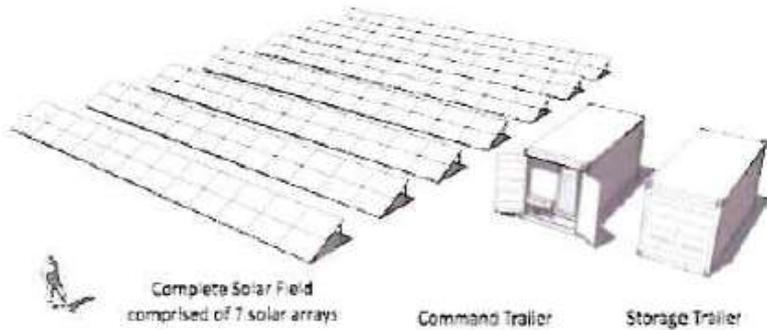
**The ARMY is PEOPLE.** (but a few persons do not represent the whole Army)



# Samples of items Involving Safety Confirmation.



## Deployed System Overview





# Case Study Overview



- CENTCOM & RDECOM were sending a renewable energy system to AFG to conduct an operational assessment and ROI and provide this to the PM to help facilitate modernization strategies for tactical power.





# Requirement

## (Case study)

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- **Operational Need:** Reduce Forward Fuel Consumption & Provide Tactical Power for Partners
- **Technology Provided:** NATICK assessed PowerFilm product as reliable and durable but didn't have a Safety Release
- **Operational Deployment:** Power Shade would be helo-transported to an enduring Combat Outpost (COP) for Soldier Assessment



# Details

## (Case study)



- ATEC testing would subject Solar Shade system to wind loads, electrical discharge safety, assembly, carry, durability, etc.
- RDECOM FAST paid for testing, and data was used to ensure product would meet rigors of the operational deployment.
- It does not pay to skip this step!

**Safety Releases & Safety Confirmations:  
Alert People to Hazards and Risks,  
Identify Restrictions,  
& Mitigations for Safe Use.**



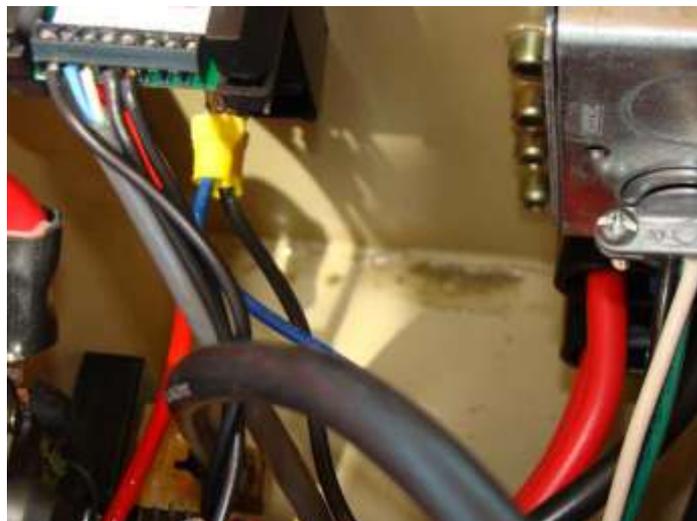
# Assessment

## (Case study)





# Assessment (Case study)





# Results

## (Case study)



**Bottom Line: PowerFilm Power Shade demonstrated Safe performance, while provided power, in rain/wind environment.**

**Staking system modified. Better seals applied to Balance of System (BOS) electrical box to eliminate water intrusion**

**System granted “Safety Confirmation” and thus deployed on schedule to a Field Artillery Unit**





# What Was Learned (Case study)

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- CENTCOM
  - Must add cost and schedule for Safety Confirmation in technology program planning
- RDECOM/PM MEP
  - NATICK component had done its homework
- The Contractor: PowerFilm
  - Had a better understanding of Test Evaluation Mentality and how their product performed
- Down Range Deployment Managers
  - Confidence the technology was safe!



# Safety Release

(AR 70-1, AR 73-1, DA-PAM 73-1, ATEC/DTC Reg 73-1)



- A Formal Document issued by DTC to a user/test organization **before** any hands-on testing, training, use, or maintenance **by Soldiers**
  - **Issued for a specific event**
    - **At a specified time**
    - **A specified location**
    - **Under Specified Conditions**
- **Describes the specific hazards** of the system based on
  - Test Results
  - Inspections,
  - System Safety Analysis
- **Operational limits** and precautions are identified to minimize risk to Soldiers
- All signed by Director, DTC.

• Does not authorize use of materiel in theaters where hostilities are present.  
• Not intended to support materiel release decisions

• Information System Engineering Cmd, Army Network Enterprise Technology Cmd, Health Services Cmd and Medical Research and Development Cmd – Provide their own SR



# Safety Confirmation

(AR 70-1, AR 73-1, DA-PAM 73-1, ATEC/DTC Reg 73-1)



- A Separate Document that provides the Materiel Developer and Decision Maker with DTC safety findings and conclusions
- The Safety Confirmation
  - Classifies Residual Hazards (Severity and Probability)
  - Uses the Approved Risk Acceptance Model
- Supports all Milestones, Type-Classification, Materiel Release, and Fielding decisions, or as requested.
- Provided to AEC for attachment to the ATEC Milestone Assessment Report (OMAR) or OTA Evaluation Report (OER)
- All signed by DTC Director

**The S.C. Is NOT a Permission Slip.  
SC describes risks and mitigations.**



# Safety Documentation Matrix

(DTC Pam 73-1)



## Safety Release/Confirmation Matrix

Activity	Testing, Pre-Test Training, or Demonstrations Using Soldiers	MS B	MS C (LRIP)	Full-Rate Production Decision	Material Release Decision (Full or Conditional Training)	Urgent Material Release (UMR)	Interim Material Release	RFU REFI IED	System Changes (Modifications and Upgrades)
DTC Document									
Safety Release	<b>SR</b>								
Safety Confirmation		<b>SC</b>	<b>SC</b>	<b>SC</b>	<b>SC</b>	<b>SC</b>	<b>SC</b>	<b>SC</b>	<b>SC</b>

### Safety Release

- Issued for a specific event
- At a specified time
- A specified location
- Under Specified Conditions
- Describes Safety Hazards & Operational Limits

### Safety Confirmation

- Supports Milestones & Material Releases
- A separate document to AEC & Material Developer
- Provides Safety Findings & Conclusions
- Classifies any Residual Hazards



# Supporting Documentation



- System Description
- Technical/Operational Manuals
- Safety Assessment Report
  - Prepared by PM or Prime Contractor
  - Include Software Safety Risk Analysis
- Health Hazard Assessment Report
  - Prepared by Public Health Command (Prov.)
- Government or Contractor Test Data
  - Test Incident Reports
  - Fault Tree Analysis
- DTC Test Center Recommendations support:
  - Safety Release Recommendation
  - Safety Confirmation Recommendation

RISK Acceptance Levels per DODI 5000.02, 8 Dec 08  
 Risk Assessment Levels & Definitions per  
 Tables A-I thru A-IV of MIL-STD 882D, 10 Feb 00

**HAZARD SEVERITY**

				Catastrophic	Critical	Marginal	Negligible	
				Could result in death, permanent total disability, loss exceeding \$1M, or irreversible severe environmental damage that violates law or regulation.	Could result in permanent partial disability, injuries or occupational illness that may result in hospitalization of at least three personnel, loss exceeding \$200K but less than \$1M, or reversible environmental damage causing a violation of law or regulation.	Could result in injury or occupational illness resulting in one or more lost work days(s), loss exceeding \$10K but less than \$200K, or mitigatable environmental damage without violation of law or regulation where restoration activities can be accomplished.	Could result in injury or illness not resulting in a lost work day, loss exceeding \$2K but less than \$10K, or minimal environmental damage not violating law or regulation.	
				1	2	3	4	
<b>HAZARD PROBABILITY</b>	Frequent	Likely to occur often in the life of an item, with a probability of occurrence greater than $10^{-1}$ in that life.	Continuously experienced	A	1-A HIGH AAE	2-A HIGH AAE	3-A SERIOUS PEO	4-A MEDIUM PM
	Probable	Will occur several times in the life of an item, with a probability of occurrence less than $10^{-1}$ but greater than $10^{-2}$ in that life	Will occur frequently	B	1-B HIGH AAE	2-B HIGH AAE	3-B SERIOUS PEO	4-B MEDIUM PM
	Occasional	Likely to occur some time in the life of an item, with a probability of occurrence less than $10^{-2}$ but greater than $10^{-3}$ in that life	Will occur several times	C	1-C HIGH AAE	2-C SERIOUS PEO	3-C MEDIUM PM	4-C LOW PM
	Remote	Unlikely but possible to occur in the life of an item, with a probability of occurrence less than $10^{-3}$ but greater than $10^{-6}$ in that life	Unlikely, but can reasonably be expected to occur	D	1-D SERIOUS PEO	2-D MEDIUM PM	3-D MEDIUM PM	4-D LOW PM
	Improbable	So unlikely, it can be assumed occurrence may not be experienced, with a probability of occurrence less than $10^{-6}$ in that life	Unlikely to occur, but possible	E	1-E MEDIUM PM	2-E MEDIUM PM	3-E MEDIUM PM	4-E LOW PM



# Follow-up



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**DTC POC:**

**ATEC**

<http://www.atec.army.mil>

**DTC “Request For Test Services” RFTS:**

<https://adss.atec.army.mil/Public/RFTS/TestRequests/Request.aspx>

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# BACKUP



# System Commodity Areas Tested At DTC Ranges



**Direct Fire  
Live Fire  
Vehicles  
Small Arms  
Gen & Indiv Eq**



**Air Systems  
Air Worthiness**

**Missiles  
Ballistic Msl Def**



**Small Missiles  
& Rockets  
Guidance Sys  
HE Warhead  
& Fuzes**

**Chem Bio  
NBC Surviv  
Smoke &  
Obscurants  
Methodology**



**Indirect Fire  
Air Delivery  
Air Armaments  
Vehicle/Support Equip  
Imp Explosive Dev**

**C4I  
Info Assur**





# SAFETY ASSESSMENT REPORT (SAR)

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- Formal summary of **safety and health data collected during the life of the system**. Provides hazard potential and corrective actions to avoid personnel injury and equipment damage during testing.
- Includes The Surgeon General's (TSG) Health Hazard Assessment (if available).
- PM Responsibility.
- To be provided 60 days prior to the start of DT/OT testing/demonstration:
  - Facilitates SOP preparation
  - Provides focus to safety testing



# HEALTH HAZARD ASSESSMENT (HHA)

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- The application of biomedical and psychological knowledge and principles to identify, evaluate, and control the risk to the health and effectiveness of personnel who test, use, or service Army systems.
- Prepared by The Surgeons General's (TSG) Office at customer request.
- Based on the following:
  - User provided data
  - Previous testing
  - CHPPM studies (Ionizing/Non-ionizing radiation, toxic fumes)
  - Other TSG collected data.
- HHA Requests electronically submitted via the Public Health Cmd.