BUSINESS CONTINUITY PLANNING

The Unexpected Happens … Be Ready

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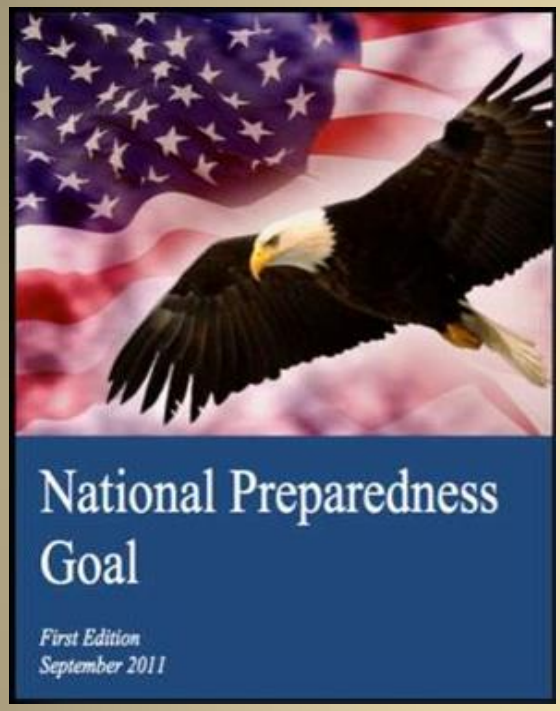
RISK

Risks to National Security



" A secure and resilient Nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risks "

Presidential Policy Directive 8

Private Sector Preparedness (PS - Prep)

Congress authorized a voluntary private sector preparedness certification program based on recommendations of the 911 Commission Act of 2007

(Title IX a section of Public Law 110-53 / PS-Prep)

Business Financials

One of the first victims

Accidental
vs
Intentional

Prior Warning
vs
No Prior Warning

- **Natural**
- **Man Made**
- **Technological**

Controllable
vs
Uncontrollable

Internal
vs
External

Disasters Impact

- ☑ People
- ☑ Financials
- ☑ Technology
- ☑ Operations
- ☑ Facilities & Assets
- ☑ Reputation

What is Business Continuity Planning ?

- ☑ Respond
- ☑ Restore
- ☑ Recover

Why Business Continuity Planning?

Strategic Business Value

- Employee Safety
- Trust - Customers & Investors
- Standards of Care & Due Diligence
- Survival - Financial Stability / Faster incident response


S.S. TITANIC
"A team meeting in 20 minutes seems appropriate."


THE TIME TO PREPARE … BEFORE

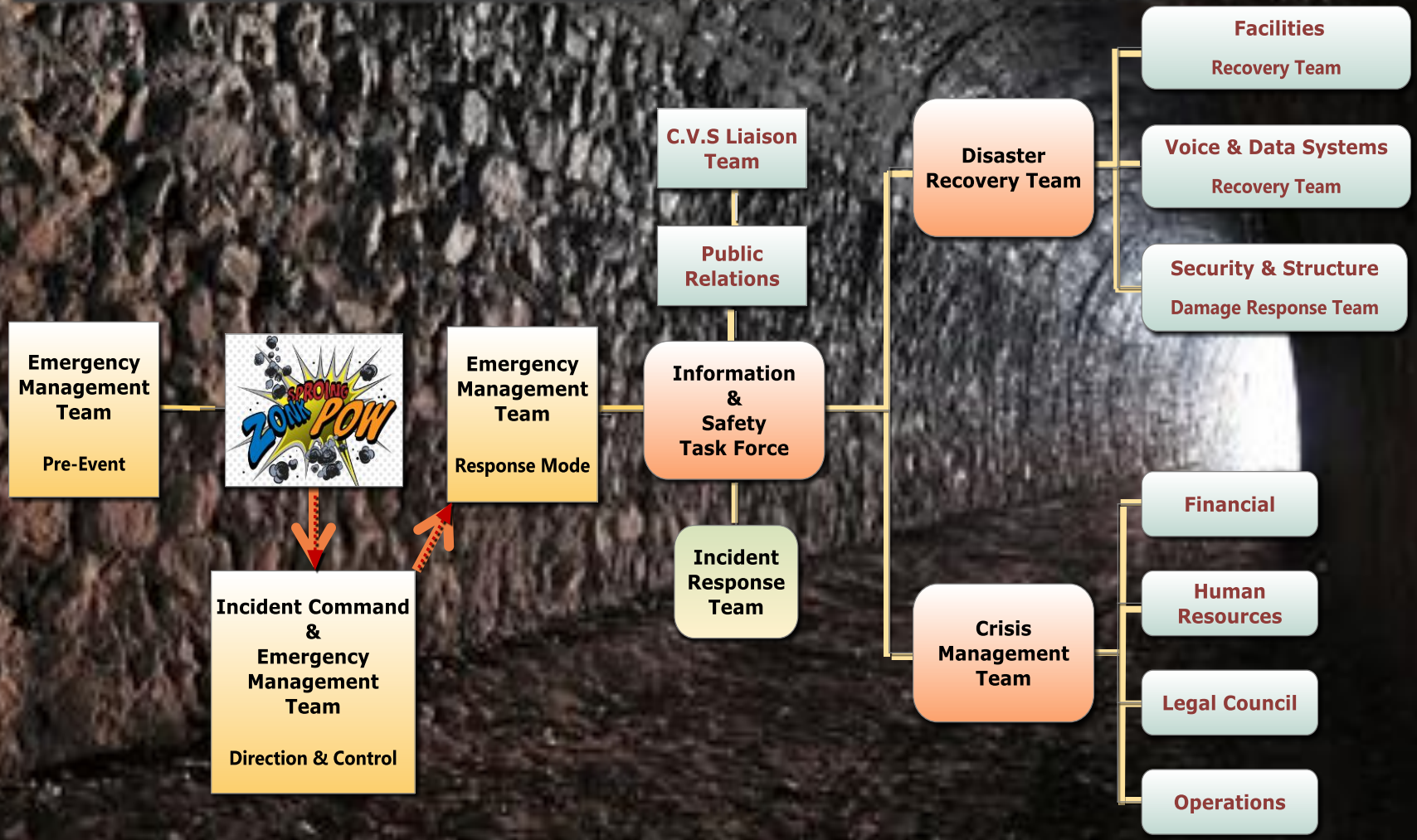
CONTINUITY - A BUSINESS ISSUE

Business Continuity Plan

10 - Professional Practices

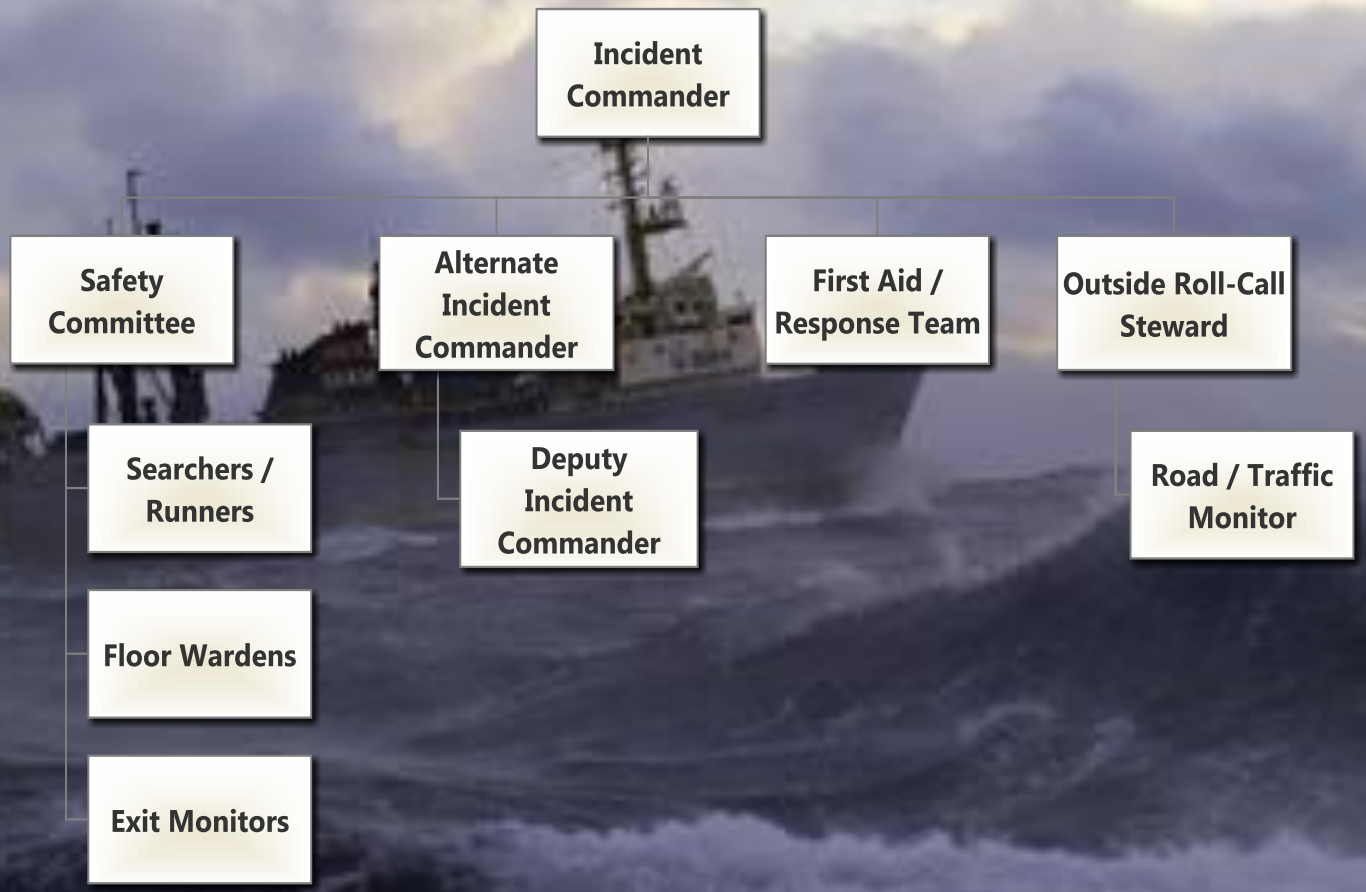
PROGRAM INITIATION & MANAGEMENT

Emergency Management Team



INCIDENT RESPONSE TEAM

Chain of Command



RISK EVALUATION & CONTROLS

Business Unit Level

Enterprise Level

People

Compliance

Supply Chain

Reputation

Policy & Procedures

Information Technology

Security

Risk Evaluation & Controls - *What Could Happen?*

- **Identify & Prioritize** - *Critical Business Functions*
  - ✓ What is essential to your operations ?
  - ✓ What critical process or systems are important. Why?
  - ✓ How long can you operate if a critical function is damaged? If key personnel are unavailable?

- **Evaluate Risks**
  - ✓ What has occurred in the past ?
  - ✓ Risk related to building design or location ?
  - ✓ What can be done to mitigate risk ?

BUSINESS IMPACT ANALYSIS

- ☑ General Operations Information
- ☑ Procedures & Standards
- ☑ Risk Management & Insurance
- ☑ Contacts & Licenses
- ☑ Technical Documentation

MTR = *Mean Time to Recovery*

- Actual time that elapsed

RTO = *Recovery Time Objective*

- Maximum time of unavailability

RPO = *Recovery Point Objective*

- How much data can be lost

MTD = *Maximum Tolerable Downtime*

- Catastrophic level of downtime


Every Business Disruption not a
“ Smoking Hole ”

Disruptive Events

"Just how bad is it ?"

Emergency

Hazard / Vulnerability

Disruption

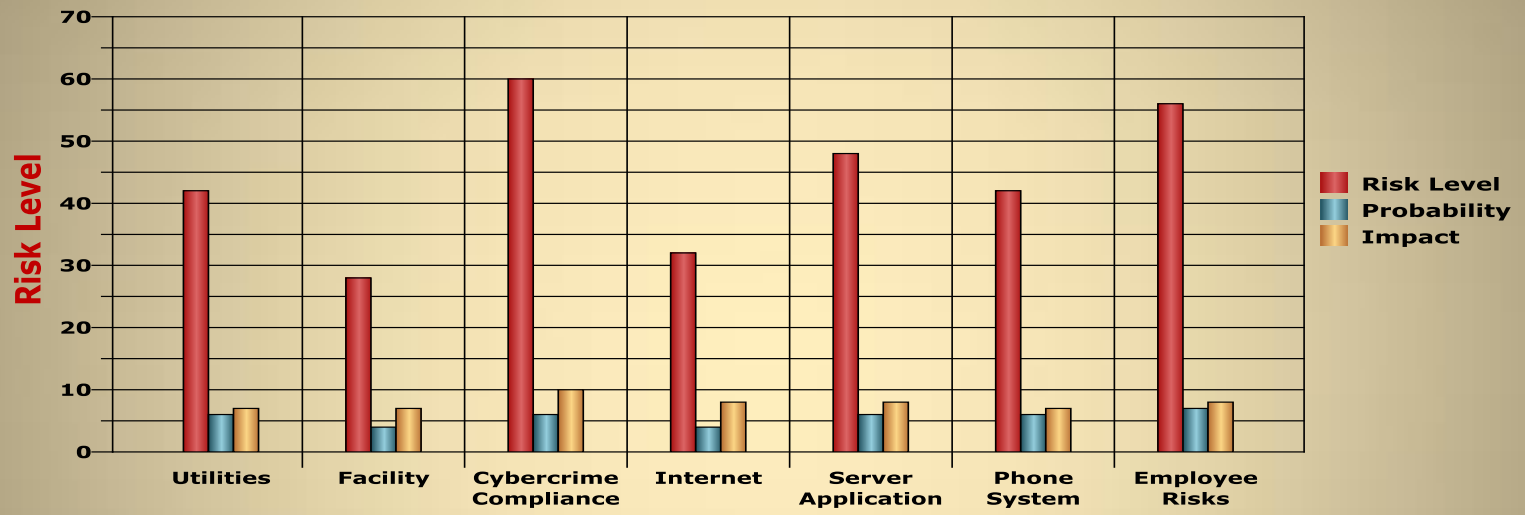
Disaster

CATASTROPHE

BUSINESS IMPACT ANALYSIS

Sample – Enterprise Risk Map

Impact Level Scale: [1]-Lowest - [100]-Highest



Business Resource or Functionality Lost

	Utilities	Facility	Cybercrime Compliance	Internet	Server Application	Phone System	Employee Risks
Risk Level	42	28	60	32	48	42	56
Probability	6	4	6	4	6	6	7
Impact	7	7	10	8	8	7	8

Probability: 1 = Low Probability 10 = High Probability

Impact: 1 = Low Impact 10 = High Impact

Probability * Impact = Risk Level

BUSINESS CONTINUITY STRATEGIES

Enterprise

Multiple Sites

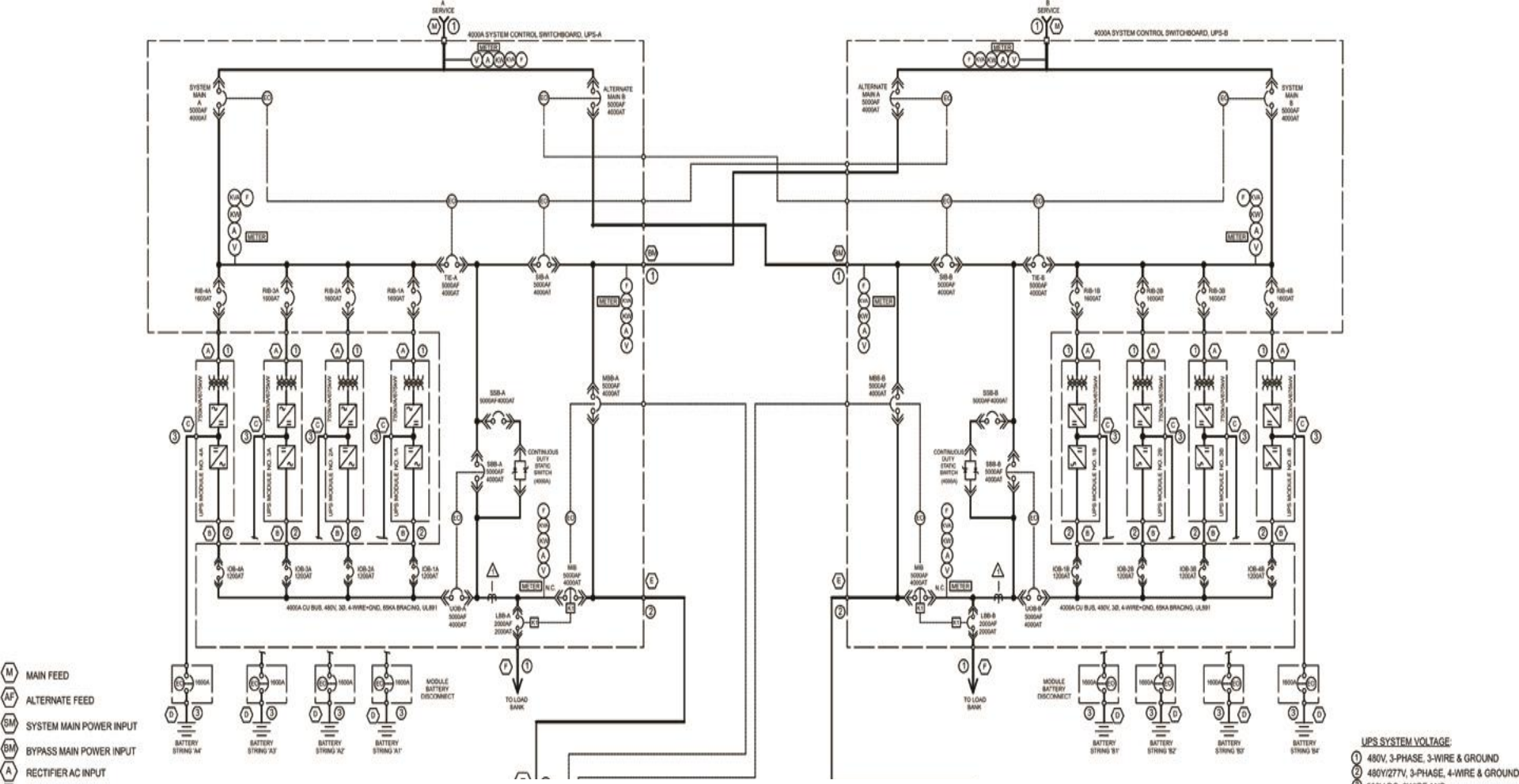
Enterprise

Single Site

Business Unit Only

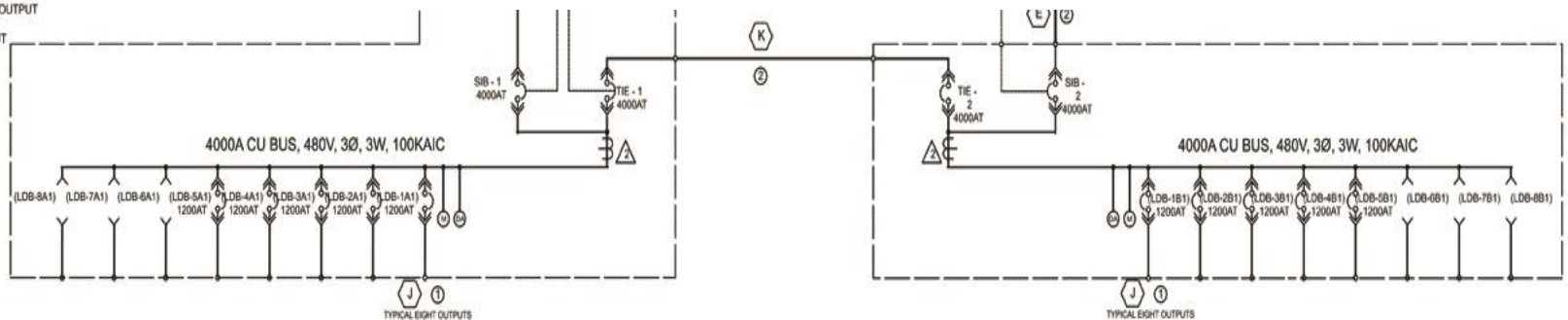
Enterprise & Business Unit

Process Level



- (M) MAIN FEED
- (AF) ALTERNATE FEED
- (SM) SYSTEM MAIN POWER INPUT
- (BM) BYPASS MAIN POWER INPUT
- (A) RECTIFIER AC INPUT
- (B) UPS MODULE AC OUTPUT
- (C) UPS MODULE DC INPUT
- (D) MODULE BATTERY DISCONNECT TO BATTERY STRING
- (E) TIE SWITCHBOARD INPUT
- (F) LOAD BANK BREAKER OUTPUT
- (G) CRITICAL LOAD OUTPUT
- (K) POWER TIE

RESILIENCY BY DESIGN



UPS SYSTEM VOLTAGE:

1. 480V, 3-PHASE, 3-WIRE & GROUND
2. 480Y/277V, 3-PHASE, 4-WIRE & GROUND
3. 500V DC, 2WIRE AND GROUND

NOTES:

- (3) CTS FOR LIEBERT USE ONLY
- BUS DUCT PROVISION
- CONDUIT LANDING

AVAILABILITY

- Maintenance
- Operations

DISASTER RECOVERY PLAN

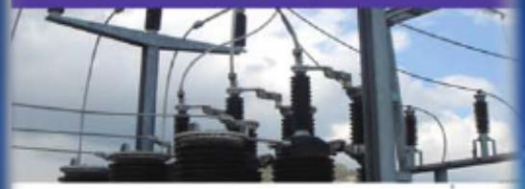
- **Technology Survival Playbook**

  - ☑ One Line Verification & Update
  - ☑ Design Audit & Asset Inventory
  - ☑ Short Circuit & Breaker Coordination Study
  - ☑ Arch Flash Analysis
  - ☑ Power Quality Assessment
    - Grounding Test
    - Harmonic Load Analysis
  - ☑ IR Scans
  - ☑ Breaker & Load Bank Testing

Eliminate Single Points of Failure ...


.... Everywhere Possible

Supply



MV Transformer and Switchgear

Genset

ATS

UPS

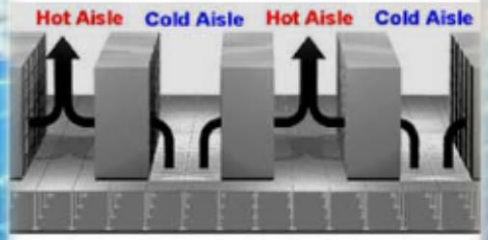
Switchgear

Cooling

Chillers

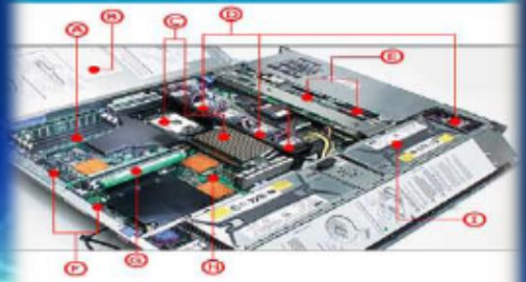
Distribution

Power Distribution

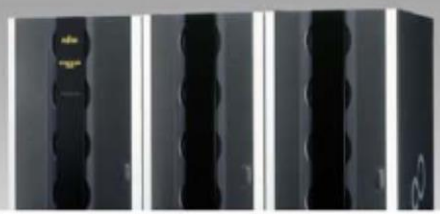


Cooling Distribution

Demand



Server

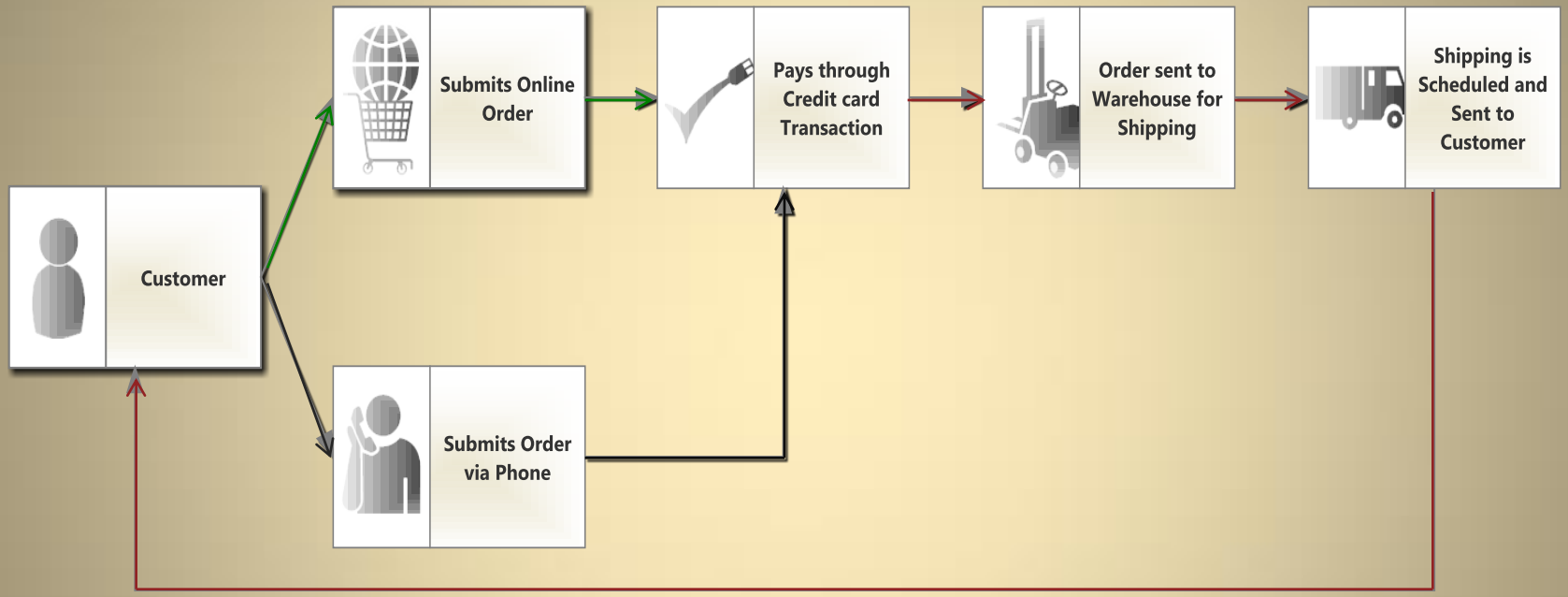


Storage

Communications

Data Center - Critical Power Path

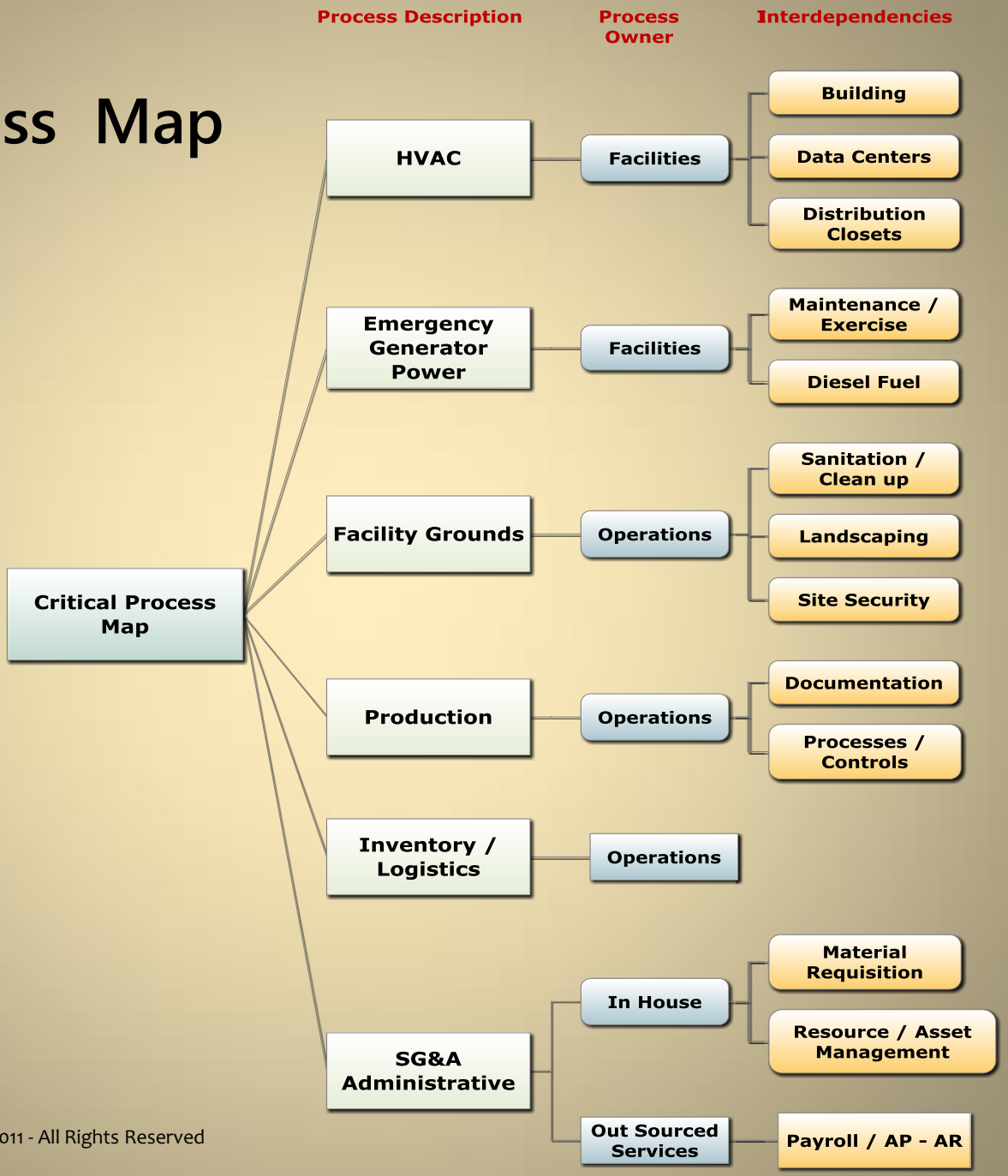
Sample Workflow : E-Commerce



Basic Black Box - Process Map

Critical Process Map

- Sample Map



EMERGENCY RESPONSE & OPERATIONS

Incident Response Plan

Emergency Operations Center

OSHA / TOSHA

- **Emergency Action Plan**
- **Fire Prevention Plan**
- **Emergency First Aid**

EMERGENCY OPERATIONS CENTER

Building: **Accessible**

EOC location: **On-Site**

Building: **NOT Accessible**

EOC location: Off-Site - **Close Location**

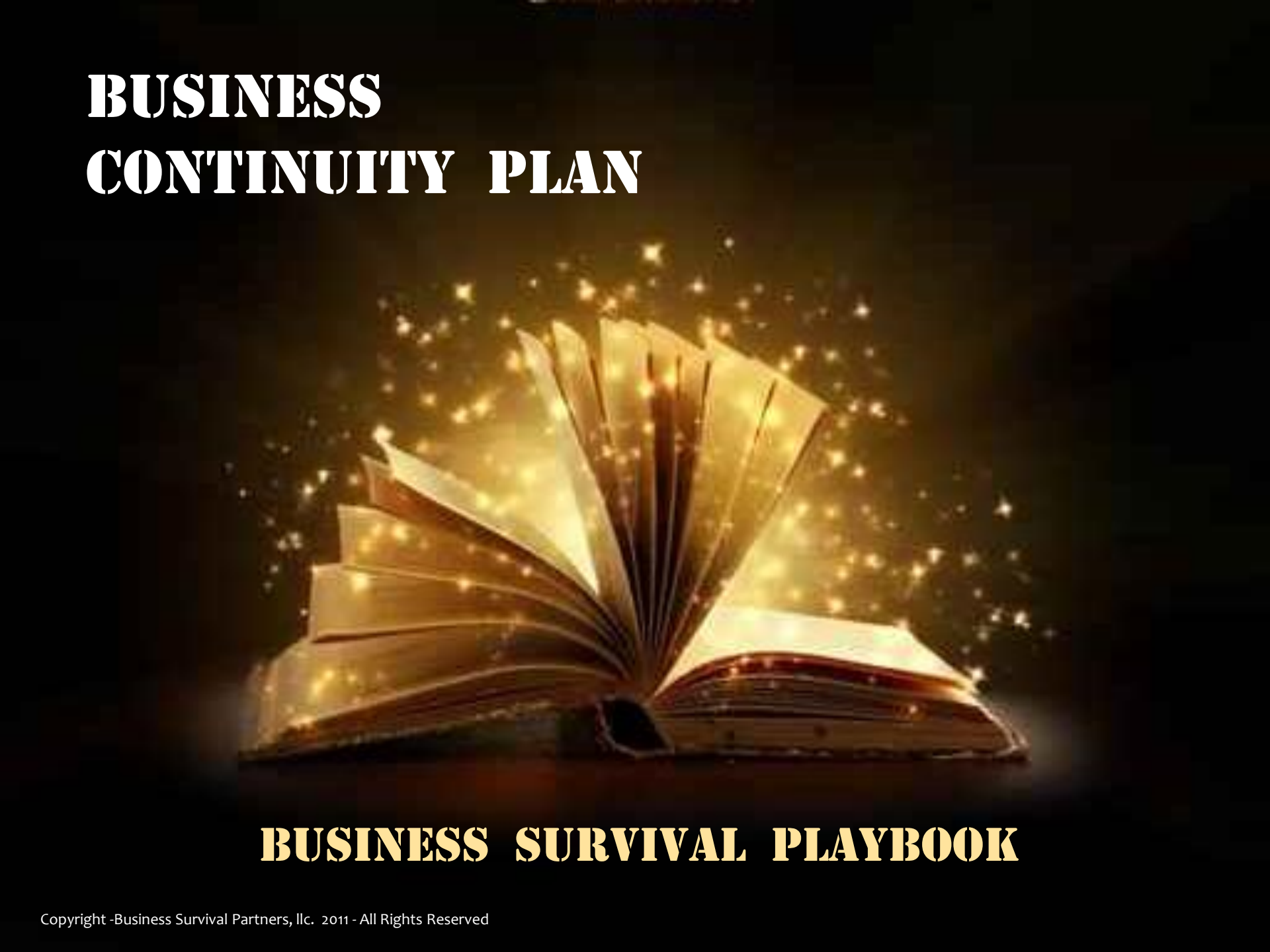
Building: **NOT Accessible**

EOC location: Off-Site - **Distant Location**

Building: **NOT Accessible**

EOC location: Off-Site - **Virtual**

BUSINESS CONTINUITY PLAN



BUSINESS SURVIVAL PLAYBOOK

TCP / IP - 4th Utility

HVAC - SNMP / BACnet

Lighting Systems - MODBUS

Security / IPS - HTTP / TCP - IP

Building Management - MODBUS

Energy Management - LonMark

Fire Control System - DTMF / TCP-IP

Industrial Control Systems
Cyber Emergency Response Team *(ICS-CERT)*

TLP = WHITE

ICS-CERT MONITOR

January/February/March 2013

INCIDENT RESPONSE ACTIVITY

ATTACKER LEVERAGES PUBLIC INFORMATION TO CUSTOMIZE SPEAR-PHISHING CAMPAIGN

A recent spear-phishing campaign started and ended in October 2012, using publicly available information from an electric utility's Web site to customize an attack against members of the Energy Sector. Employee names, company email addresses, company affiliations, and work titles were found on the utility's Web site on a page that listed

http://ics-cert.us-cert.gov

OPERATIONAL READINESS

Exercise ▪ Audit ▪ Maintain


CRISIS COMMUNICATIONS
Respond ▪ Restore ▪ Recover


Public Relation Messages
- Proceed With Caution

COORDINATION : EXTERNAL AGENCIES

No Plan ? Here's how to get started

- ✓ **Meet with external agencies**
- ✓ **Assess and document - Capabilities & Hazards**
- ✓ **Review codes & regulations that impact your company**
- ✓ **Identify critical operations / Dependencies**
- ✓ **List potential emergencies / Human impact**

Use What's Available

☑ **Expand current incident response / EH&S plans**

- Leverage to build conceptual business case

☑ **Identify core responsibilities**

- Safety of personnel
- Statutory & Regulatory requirements
- Operational & contractual commitments

☑ **Establish your team / Roles & responsibilities**

- Create & document clear chain of command
- Provide command & control structure - Crisis Communications
- Establish Emergency Operations Center capabilities

Build a Conceptual Business Case

Start like any other project

- Identify objectives, scope of work, assumptive budget & conceptual business case
- **Insure alignment of project with business objectives**
- Identify critical resources & inter-dependencies

Keys to Success:

- Acquire support of multiple members of management
  - **Present conceptual business case in terms of:**
    - ✓ Capital Expenditures or Operating Expenses
    - ✓ **Implications:** Moving forward vs. Not moving forward
    - ✓ Impact on Critical Resources

Engaging Executive Management

☑ **Identify your executive team's "Business Vision"**

- Driving the process
- Primarily focused on the implications

☑ **Implications - Four General Motivators**

- **Governance** - Policy & Procedure Driven
- **Compliance** - Statutory & Regulatory Framework Driven
- **Technological** - Service Continuity & Recovery Driven
- **Resilience / Revenue** - Availability & Recovery of Critical Operations

☑ **What are their most important motivators?** *Speak their language*

Business Resiliency

☑ **Business Resiliency & Individual Preparedness**

- Prepare your family for emergency situations
- Develop employee preparedness training programs
- Establish mutual assistance agreements
- Join or create joint action committees within your company

Thank You

The Unexpected Happens … Be Ready ®

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