Integrated Safety and Security Management (ISSM)

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John Blair Woods biography

• Currently Manager, Program Analysis and Evaluation, Safeguards, Security & Emergency Services at Y-12 National Security Complex

• B.A. in Foreign Service and International Politics and an M.A. in International Relations from The Pennsylvania State University

• Commissioned a Second Lieutenant of Armor in the Regular Army in June 1971 as a distinguished military graduate

• Retired from active duty in July 1991

• Began a second career at Y-12 as a security specialist and has since served in varied managerial positions
Why ISSM at Y-12?

- Safety and security events and incidents
- ISSM = Integrated Safety Management (ISM) core functions and principles
- New security technology deployment after 9/11
- Emphasis on safety and security together
- B&W Y-12 senior management objective for effective performance
- Major initiatives began in 2005
Senior management commitment (2005–present)

• Structured and disciplined process
• B&W Y-12 senior management key to reach milestone
  – provided direction and support
• Six Sigma team with senior experienced team participation
  – senior management champion
  – Engineering
  – safety disciplines
  – Production
  – Safeguards and Security (S&S)
Approach

• Establish common understanding and communication among team

• Identify
  – existing safety and security commonalities
  – program and process gaps
  – required integrated change controls

• Develop and issue implementation plan/milestones
  – site
  – S&S
  – education and training
Management mechanisms/communication

- S&S and Production team to work issues
- Site- and facility-specific operational safety boards (OSBs)
- S&S Integrated Management Planning and Prioritization Team (IMPPT)
- S&S Operations Center (SSOC)
- Security area owners
## Safety and security commonalities

<table>
<thead>
<tr>
<th></th>
<th>SAFETY</th>
<th>SECURITY</th>
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<tbody>
<tr>
<td><strong>DESIGN BASIS</strong></td>
<td>postulated accident scenarios</td>
<td>Graded Security Protection (GSP) policy</td>
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<tr>
<td><strong>ANALYSIS</strong></td>
<td>accident analyses</td>
<td>vulnerability assessments and options analyses</td>
</tr>
<tr>
<td><strong>REQUIREMENTS</strong></td>
<td>• site-wide SAR&lt;br&gt;– plant-wide safety SSCs &amp; features&lt;br&gt;• facility BIOs or SARs&lt;br&gt;– facility-specific safety class &amp; safety-significant systems, etc.&lt;br&gt;• technical safety requirements (TSRs)</td>
<td>• SSSP&lt;br&gt;– credited plant-wide systems and equipment&lt;br&gt;• security plans&lt;br&gt;– credited facility-specific security design features&lt;br&gt;• predetermined compensatory measures</td>
</tr>
<tr>
<td><strong>DOCUMENTATION &amp; OUTPUTS</strong></td>
<td>• USQD process&lt;br&gt;  • integration of screenings and USQDs with “trigger” work control procedures.&lt;br&gt;  • NNSA approval thresholds</td>
<td>• security checklist for certified security areas&lt;br&gt;  • integration of screenings with “trigger” work control procedures&lt;br&gt;  • NNSA approval thresholds</td>
</tr>
<tr>
<td><strong>CHANGE IMPACT EVALUATIONS</strong></td>
<td>• DCNs used to incorporate approved changes for annual updates</td>
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<tr>
<td><strong>ANNUAL UPDATES</strong></td>
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</tbody>
</table>
ISSM/ISMS integrated model

S&S Directive Requirements (Contract)

Y-12 Site ES&H Programs & Processes

GSP/VAs SSSP Protection Strategies

S&S Programs, Processes and Systems

Risk Management/Graded Approach

Site Work Processes

- Maintenance
- Projects
- Construction
- Engineering
- Site Command Media
- Operations/Production
- Safety

Integrated Change Control Processes
S&S and Safety

ISSM/ISMS integrated model
Major Change Control Process Steps

Proposed Changes

- Complete Screening Form
- Submit Intent Change Part B to Physical Security
- Complete/Issue S&S Spec. Doc
- Develop Implementation Plan
- Initiate DCN/Revise Security Plan

Compensatory Measures May Be Required
Deviation Request May Be Required

- Security area owner/designee
- Security area owner/designee
- Safeguards and Security
- Security area owner/designee
- Security area owner/designee

Field Validation and Verification (V&V)

- Security area owner/designee
- Led by Safeguards and Security
- Include YSO when Cat I or II Plan

Complete V&V Follow-Up Actions
Implement (Change Effective)

- Security Area Owner
- Security area approval certification letter
- DCN or revised security plan approval (YSO Approval Cat I or II)
- Technical and safety requirements met
- Intent changes training completed
Design Basis Threat
CM/Security Areas/Security Plans
Process Integration

Integrated Requirements Identified

Change Driven by New GSP

SSSP/VA Projects

ID S&S requirements/integrate into Project Plan

Y19-51-006
- S&S Team
- Walkdowns
- S&S Spec. Document

Project executed per Y13-007

New OR Modified structures or equipment owned by S&S in CM

Yes

Security area/plan impacted


Y19-51-006

New OR Modified?

No

Stop

Develop documentation to support operational CM

- Initiate change request per Y15-013
- Revise documents to reflect config. change

Change Control Processes for AB & Security Areas/Plans

Facility Safety and Security SSCs

AB Facilities

Y19-009 screening

Y19-013 involves
- USQD screening
- Y19-009 screening

Non-AB Facilities

Security area screening

Y19-009

Facility Security SSCs

Work Scope/Walkdown Decisions
Y19-009 & Y19-51-006

Temporary work or condition compensatory measures *

Security area reapproval*

Special security plan*

DCN/security plan revision*

Execute Work

Work executed per Y19-009/205

* Follow decision/action steps in Y19-009
Integrated options analysis flow diagram

1. Prepare for Integrated Options Analysis
   - Background and Planning

2. Identify and Assign Members to Integrated Options Analysis Team
   - Interests/Expertise

3. Prepare Options Analysis Statement
   - Selection Decision and Goal Described

4. Establish MUST and WANT Criteria

5. Generate Alternative Options

6. Determine Yes/No for All MUST Criteria

7. Determine Relative Scores for WANT Criteria

8. Assign Relative Weights to WANT Criteria

9. Determine Total Weighted WANT Scores

10. Identify Associated Risks and Determine Risk Scores

11. Compare WANT Scores with Risk Scores

12. Select Option from Top Alternatives

13. Prepare and Approve Options Analysis Report

14. Track Implementation of Selected Option

15. Provide Feedback

- Options Not Meeting MUST Criteria Eliminated
- Weighted Ranking Created
- Options Analysis Report
- Selection Decision and Goal Described
- Importance Determined by Pair Wise Comparison
- Probability/Seriousness Risk Correlation
- Top Alternatives
- Decision Documented Lessons Learned
- Single Option
- Relative Ability to Satisfy Criteria Determined by Forced Comparison

List of Criteria
List of Options
Short List of Options
S&S work planning (specifications document)

Projects
- New security areas
- Intent changes
- Sec. plans/areas
- Etc.

Assigned lead S&S functional area → Define work scope → Form integrated team, as appropriate → Team walkdown facility/job site, as appropriate → Team ID integrated requirements

- S&S
- ES&H
- Emergency response
- Operating areas

Prepare specification document → Analyze need for impact to work scope → Issue specification document

- Deviations
- Compensatory measures
- Systems in Configuration Mgmt
- SSSP
- Certified security areas
- Etc.

Prepare Implementation Plan, as appropriate → *In-progress reviews, as appropriate

Verification/readiness reviews, as appropriate → Resolve issues → Operational Startup Approval → Cancel specification document

*Cancel specification document and repeat appropriate steps of process if a specification document requires an update before its cancellation.

7/21/2008
Immediate actions/compensatory measures

Security Event or Temporary Work or Condition
Immediate Actions/Compensatory Measures

**SSOC/PSS coordinates with Info. Sec. IOSC reporting/owners

Owner takes immediate action to protect security interests

Owner/employee notifies PSS

Phys. Sec. identifies comp. measures if not predetermined in configuration management book

Owner completes corrective actions/ temp. work or condition

Phys. Sec. verifies completed actions or work

Phys. Sec. notifies owner/SSOC to remove comp. measures

Owner removes comp. measures

*SSOC/Owner tracks comp. measures status

Owner/employee notifies PSS

Owner implements comp. measures

** Safeguards and Security Operations Center (SSOC)

* Safeguards and Security Operations Center (SSOC)

** ISOC reporting not applicable for temporary work or condition
Configuration management goals

- Design Requirements
- Change Control Processes
- Security System
- System Documentation
IMPPT oversight of system design basis

IMPPT Oversight of Documenting System Design Basis AND Ensuring System Operability

ENGINEERING TASKS
- Identify Critical Design Features
- Define Boundaries & Issue GWS
- Develop SDDs & TBISs
- Collect & Evaluate TBIS Documents
- Field-verify Documents

INTEGRATED WORK MANAGEMENT SYSTEM (IWMS) TASKS
- Develop Equipment Lists
- Equipment Labeling
- Add Equipment to IWMS
- Identify Maintenance Requirements & Frequencies
- Develop & Process Work Packages
- Update IWMS

PERFORMANCE ASSURANCE (PA) TASKS
- Review & Identify PA Requirements
- Maintain Status & Accuracy of PA Reports
- Conduct PA Actions
- Resolve Issues

OPERATIONAL DOCUMENTATION
- Review Need for Operational Procedures, etc.
- Prepare Procedures, Validate, Distribute
- Conduct Training
- Record Operator Qualifications

* CSE, SS, and DID features

NOTE: The S&S Operations Center monitors and reports status of systems and ensures notification/response as appropriate.
Security project flow diagram