



Maintaining Effective Security During Decommissioning

Overview

- Current decommissioning landscape in U.S.
- Case Study: A phased approach to security modifications
- Lessons learned
- Protecting to the risk and messaging security modifications for stakeholders



Decommissioning

CURRENT LANDSCAPE IN UNITED STATES

Decommissioning Strategies

- DECON (immediate dismantling)
 - Upon closure, equipment, structures, and portions of the facility containing radioactive contaminants are removed or decontaminated to a level that permits release of the property and termination of the NRC license.
- SAFSTOR (deferred dismantling)
 - a nuclear facility is maintained and monitored in a condition that allows the radioactivity to decay; afterwards, the plant is dismantled and the property decontaminated.
- ENTOMB
 - radioactive contaminants are permanently encased on site in structurally sound material such as concrete.

U.S. Plants in Various Stages of D&D



U.S. Decommissioning Regulation

- During the decommissioning process licensees can request:
 - Exemptions from specific security requirements in rule
 - Amendments to its license regarding the implementation of the physical protection program
 - Use of alternate measures in lieu of meeting a physical security requirement
 - Or, licensee can submit changes to their security plans that do not decrease the effectiveness of the plan



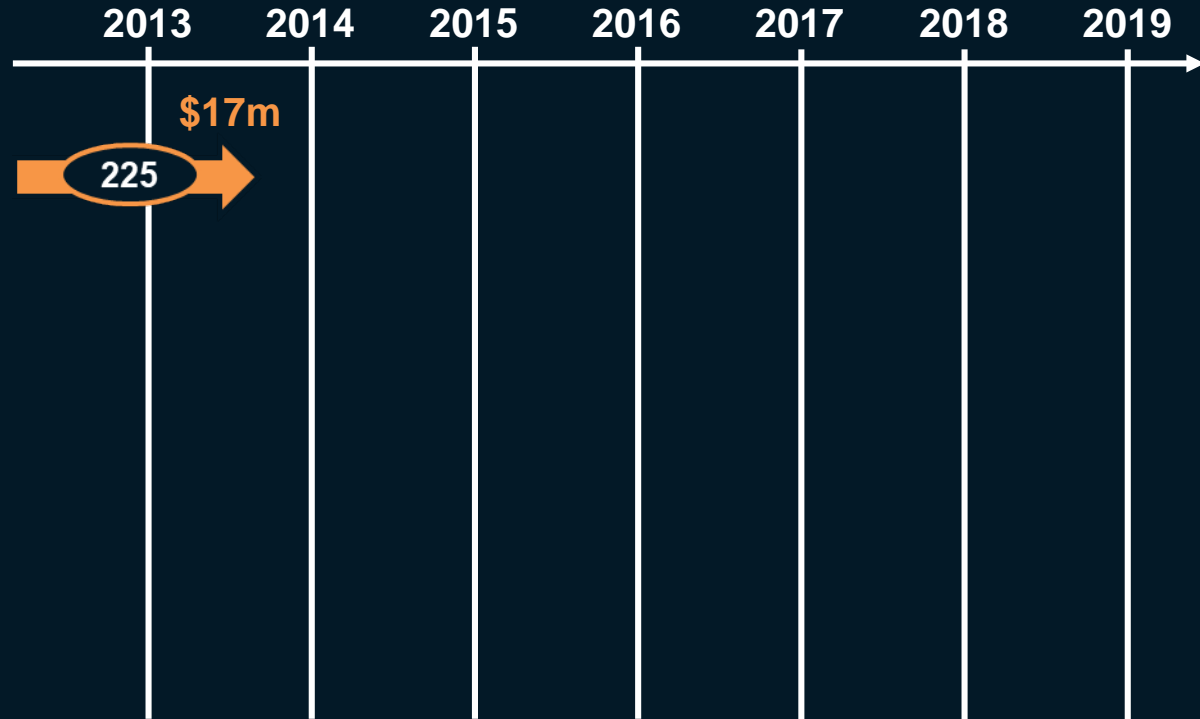
Case Study

SECURITY CHANGES – A PHASED APPROACH

Security Staffing Impacts

Phase I

- Target Set reduction
- Operational & site configuration changes
- Security Plan Revision – reduction of posts, associated procedure changes and security officer training



Phase 1 – Initial Security Modifications

- Operational Modifications
 - Force on Force Exercise requirement eliminated
 - Minimize pathways (e.g. access doors, delay barriers, closing stairwells)
 - Site configuration changes to eliminate compensatory posts
 - Reduce vehicle traffic, reduce staffing for vehicle and personnel access
- Engineering analyses
 - Blast calculations
 - Target set reduction

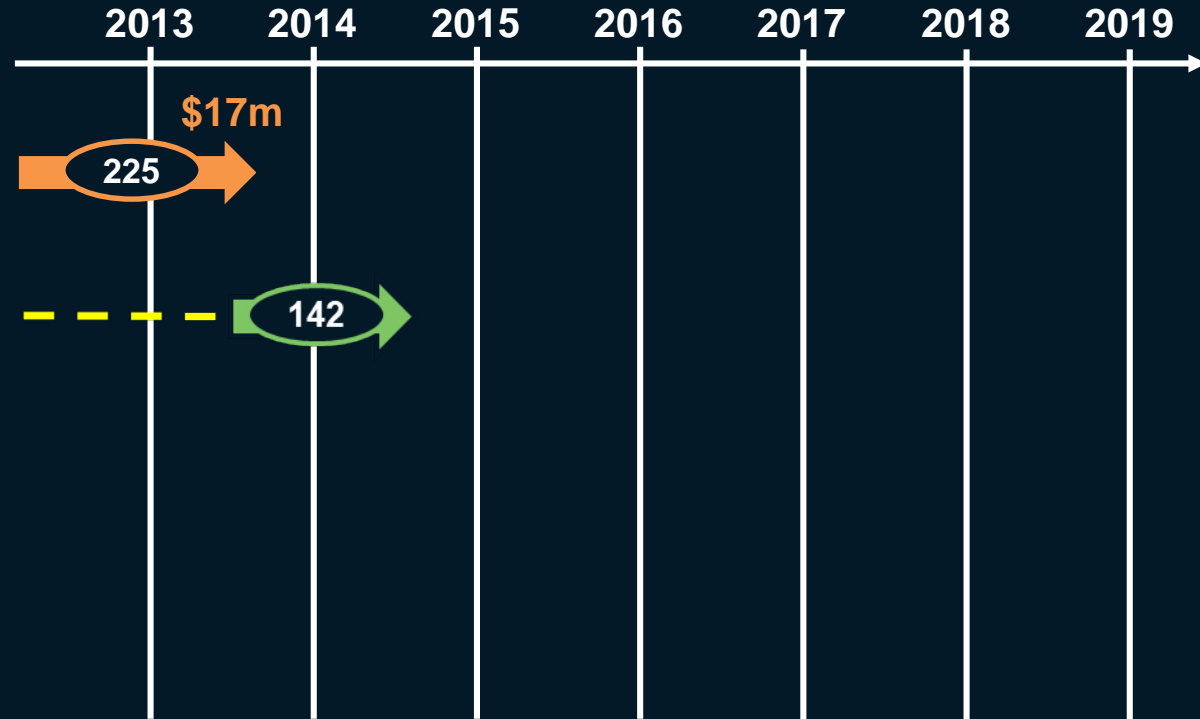
Security Staffing Impacts

Phase I

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Phase II

- OCA footprint changes & defensive security position enhancements
- System abandonment
- Security Plan and procedure revision and security officer training



Phase II – Physical Security Modifications

- Major Physical Modifications
 - Major site configuration changes (including Protected Area and Owner Controlled Area changes)
 - System abandonment
- Several Defensive Security Position changes
 - Revisions to the Physical Security Plan, training and site procedures
- Phase(s) 1 and 2 variables
 - May be combined as one phase in certain circumstances
 - Cost savings can be realized within the first year if broken into 2 phases
 - ◆ Site modifications (i.e., elimination of positions reduces overall FTE's)

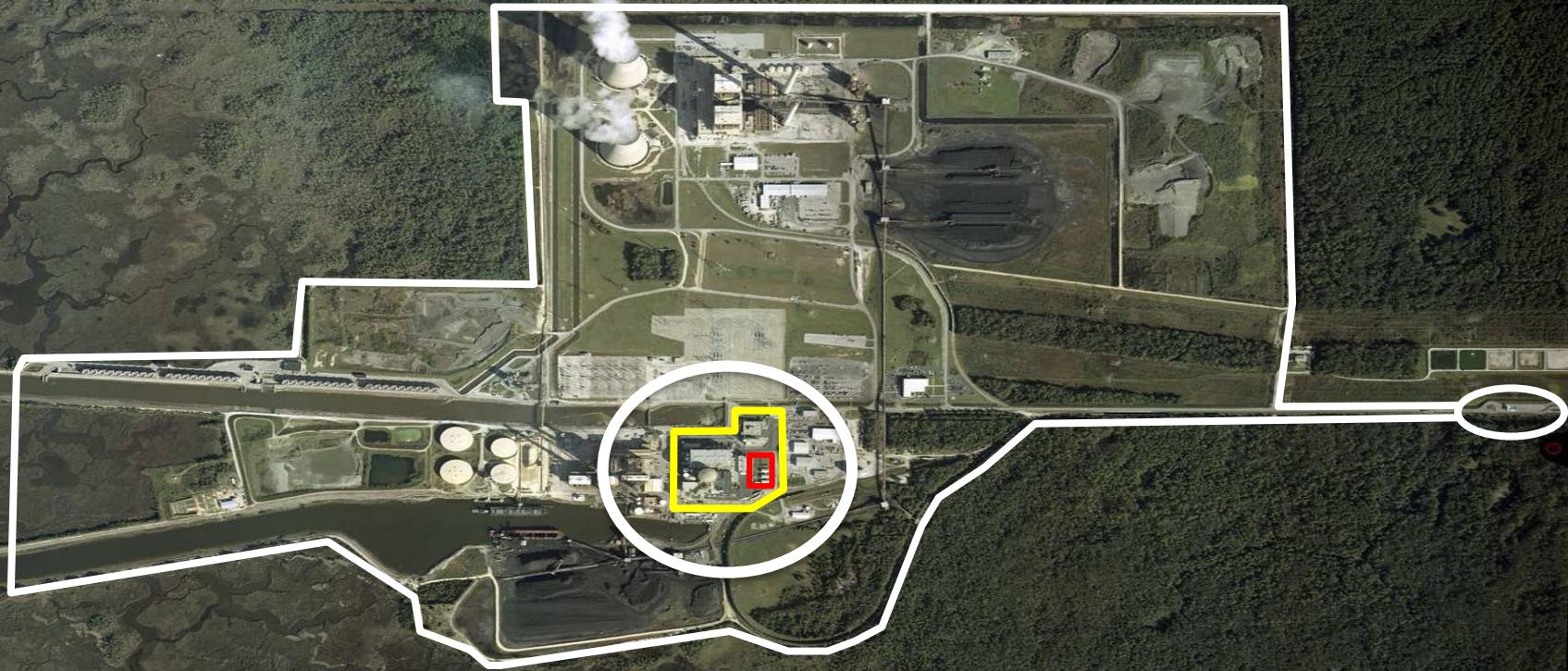
Example Phase II Physical Modification



Intake & Discharge Tunnel Solution:

- 12' long x 8' tall
- Filled w/ concrete
- Eliminated hourly patrols by 2 officers (24/7)

Example Phase II Site Reconfiguration



Security Staffing Impacts

Phase I

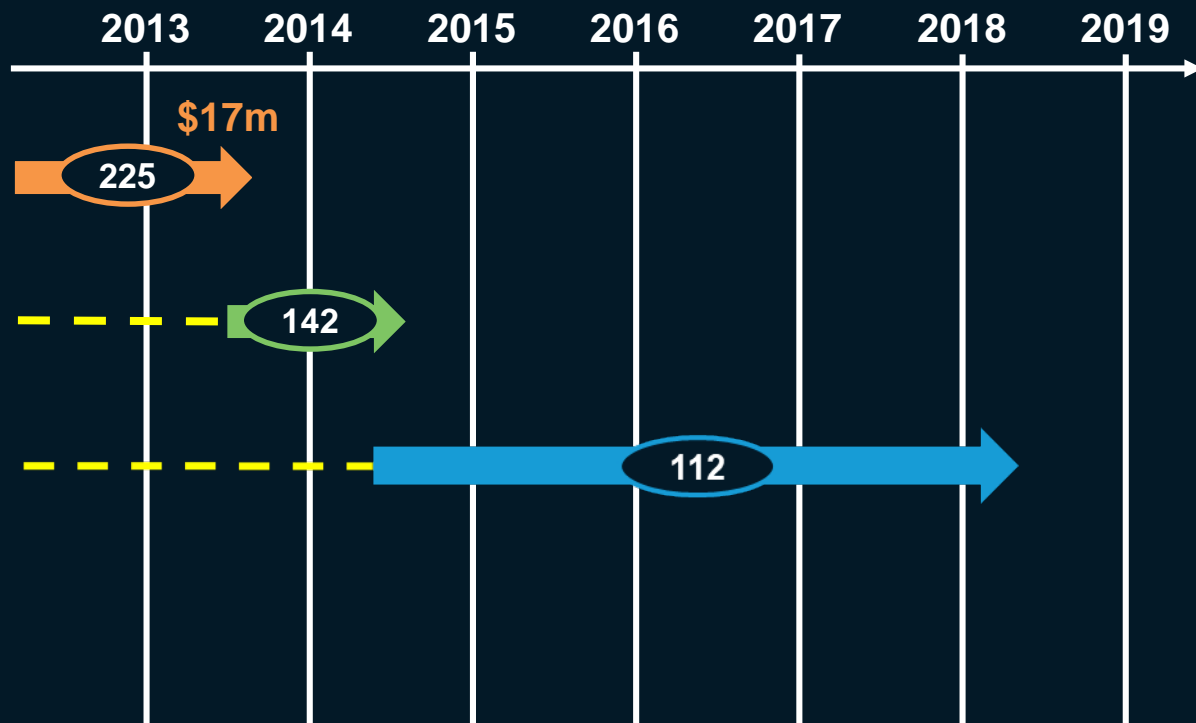
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Phase II

- OCA footprint changes & defensive security position enhancements
- System abandonment
- Security Plan and procedure and security officer training

Phase III

- Independent Spent Fuel Storage Installation Project
- Site configuration changes
- Security Plan and procedure revision and security officer training



Phase III – Spent Fuel Installation Project

- Phase 3 typically is the longest part of transition from operating to safe storage
 - Installation of spent fuel pad for storage of fuel
 - ◆ Time and resource consuming (nearly 8 months)
- Continued physical security modifications and reductions
- NRC review and approval of sites license amendment request for security plan changes took 2 years

Fuel Storage Facility Location



- Area approximately 550' x 300' and will need to be raised 30' for pad and fuel
- Constructed inside existing Protected Area;
- Reduction of security Protected Area
- All new equipment
- Large reduction in equipment maintenance/testing cost

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Phase II

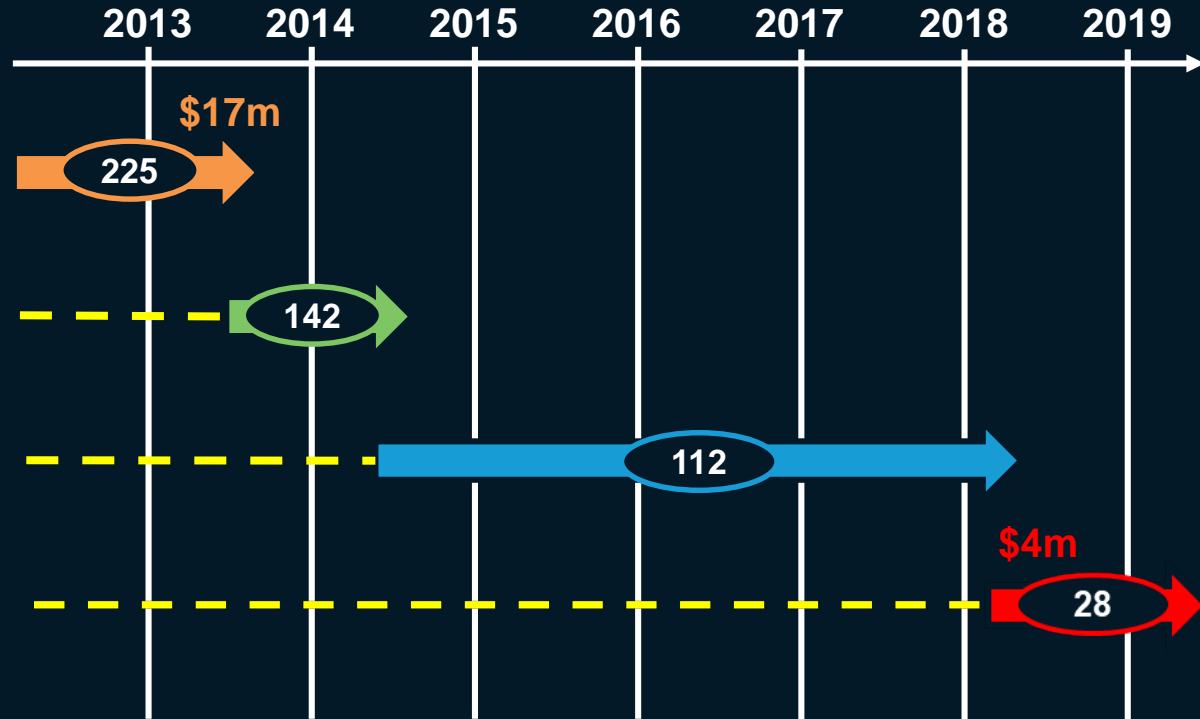
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Phase III

- Independent Spent Fuel Storage Installation Project
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Phase IV

- Fuel Storage Facility and Security Operations Center
- Protected Area footprint changes
- Security organizational changes
- Security Plan and procedure revision and security officer training



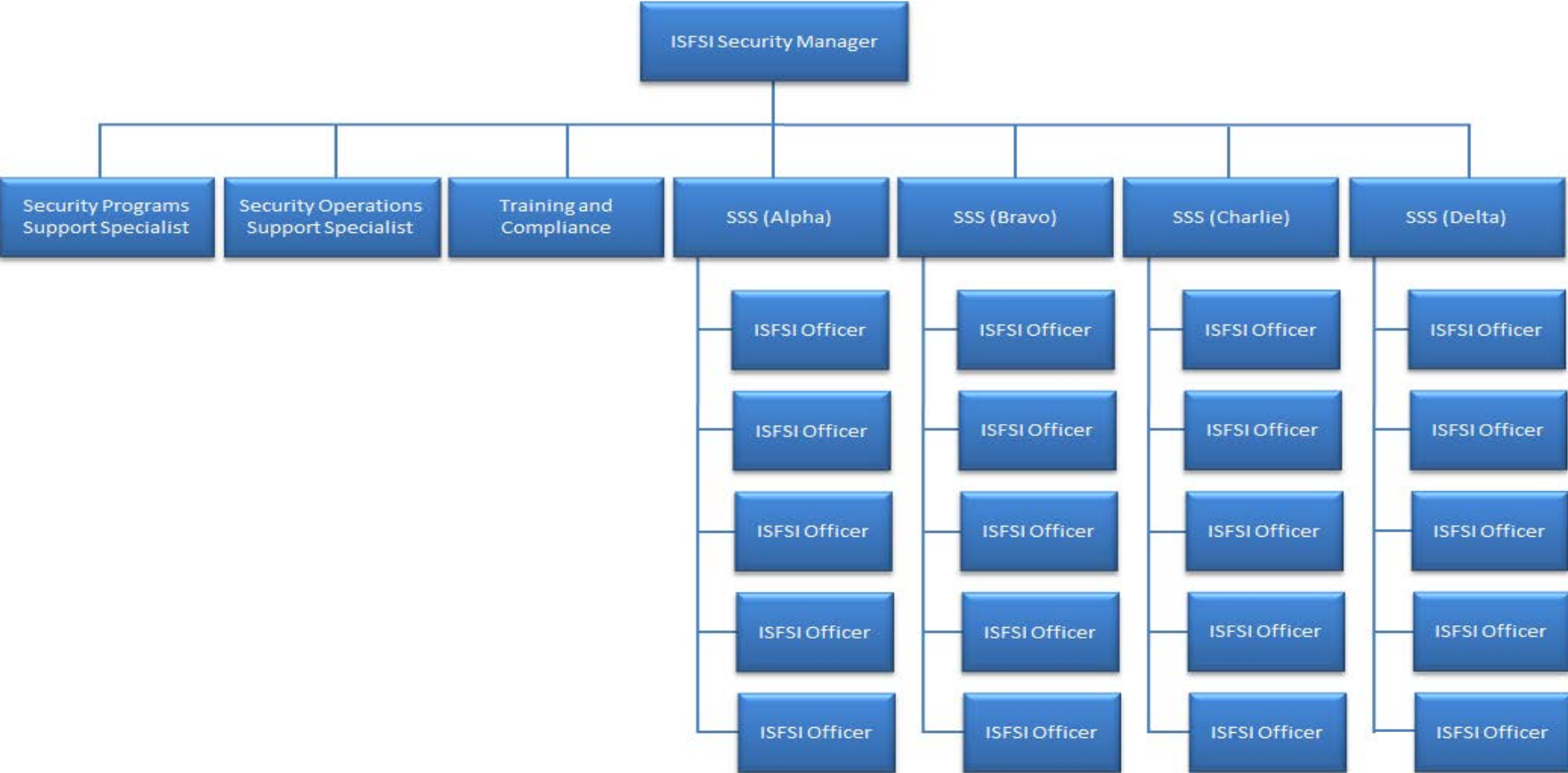
Phase IV – Transition to Fuel Storage Building Only

- Security Strategy Changes
 - Detect, Assess, Notify
 - Depend on local law enforcement to interdict
- Protected Area Changes
- Security Organization Changes

Fuel Storage Facility with Adjacent Security Operations Center



Security SAFSTOR-II (ISFSI)



Lessons Learned

- Pre-plan well *BEFORE* shutdown with the end in mind
 - Educate executive leaders on security regulation
 - Include regulator review time
 - Specialized contractor/vendors availability is limited
- Retain the right personnel resources on site for knowledge management
 - Dismantling decades of nuclear security experience
 - Need to know basis for security plan/strategies and licensing commitments made in order to justify changes



Protecting to the Risk

MESSAGING SECURITY MODIFICATIONS FOR
STAKEHOLDERS

Activist Urges More Monitoring Of Wisconsin Nuclear Power Plant That's Shut Down

By CHUCK QUIRMBACH • SEP 26, 2019

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The former Kewaunee Power Station, as of Sept. 24.

CHUCK QUIRMBACH

Source:<https://www.wuwm.com/post/activist-urges-more-monitoring-wisconsin-nuclear-power-plant-thats-shut-down#stream/0>

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