

# ROCKY FLATS CLOSURE LEGACY SECURITY RECONFIGURATION



SNM CONSOLIDATION AND A REDUCTION OF THE SECURITY PERIMETER  
IMPROVED EFFICIENCY FOR D&D WORKERS PREVIOUSLY REQUIRED TO  
TRANSIT SECURITY CHECKPOINTS.

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## INTRODUCTION

Security Reconfiguration at the Rocky Flats Site (Site) is the term that has been applied to maintaining appropriate Safeguards and Security protection for Department of Energy (DOE) assets and classified matter, while at the same time reducing security-related landlord costs to facilitate the transfer of resources to closure projects. The Security Reconfiguration was a team effort involving DOE (both the Field Office and various DOE headquarters offices) in its oversight and regulation of closure activities, and Kaiser-Hill (K-H) through its closure planning and technical support.

Much of the success of the Closure Project came from identifying ways to do work more efficiently and applying savings to accelerate closure. This section describes the Security Reconfiguration approach within the Closure Project leading eventually to the elimination of all security interests, with consequent reductions in overhead costs when all nuclear materials were eliminated from the Site. It also describes other security issues and approaches that the Site addressed during closure.

Security at the Site had always been driven by the necessity for the protection of DOE assets including special nuclear materials (SNM) and classified matter. This protection was governed by a number of DOE Orders and Directives, and enforced through numerous reviews, surveys, assessment, and inspections. Therefore, the first requirement in the reconfiguration of security at the Site was to ensure that nuclear material and classified matter always remained protected in accordance with established departmental protection policy.

The DOE Policies and Directives were developed and refined over decades to cover ongoing operations in a production environment. This guidance can reasonably be extended to cover conventional closure of individual facilities within an on-going Site – i.e. remove all security assets, and once the facilities are virtually clean, then downgrade the security and safeguards requirements. However, the Policies did not lend themselves readily to the decommissioning and demolition of a complete operating Site containing thousands of kilograms of SNM and hundreds of thousands of classified documents, parts, and special tooling, spread across numerous facilities.

Security reconfiguration represented an opportunity during accelerated closure, in that earlier removal of security restrictions allowed more activities to be performed concurrently, with a substantial improvement in the facility closure schedules and decommissioning productivity. Alternatively, waiting until a facility was completely empty and clean to reduce security carried an enormous cost and schedule penalty. The

ACCELERATED CLOSURE CONCEPT  
CONGRESSIONAL SUPPORT  
REGULATORY FRAMEWORK  
CONTRACT APPROACH  
PROJECTIZATION  
  
SAFETY INTEGRATION  
SPECIAL NUCLEAR MATERIAL  
DECOMMISSIONING  
WASTE DISPOSITION  
ENVIRONMENTAL RESTORATION  
**SECURITY  
RECONFIGURATION**  
TECHNOLOGY DEPLOYMENT  
END STATE AND STEWARDSHIP  
FEDERAL WORKFORCE  
STAKEHOLDER INVOLVEMENT

*The ability to make proactive changes and provide operational flexibility within the context of the DOE Orders enabled accelerated progress towards Site closure.*

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challenge at the Site became how to reinterpret, within the scope and intent of the directives, the methodology of compliance to DOE Orders to allow for closure with the undiminished and continuous protection of security assets.

### ***DISCUSSION***

#### Initial Site Focus

Active weapons production operations at the Rocky Flats Plant were curtailed in December 1989, followed by a period during which the systems were developed to allow production operations to be resumed. Prior to curtailment of operations, the Site was organized based on the weapons production needs with “operations” such as plutonium pit production, plutonium recovery, or waste management functionally defined with activities in numerous buildings. There was one large Protected Area (PA) encompassing the north half of the Site industrial area and including all of the plutonium operations and storage. A smaller PA surrounded a single uranium facility on the south half of the Site. The workforce consisted largely of cleared personnel. Security, as a support organization, provided the guidance and direction to the Site for compliance to DOE Orders on Security as well as the Safeguards for Special Nuclear Material (SNM). This was accomplished by conducting numerous reviews, assessments, surveys, and inspections by contractor, DOE’s Rocky Flats Field Office (RFFO), and DOE HQ personnel. The emphasis was on total compliance with requirements and guidance.

During the early 1990s, Security was initially focused on correcting procedural, technical basis, and training deficiencies. The ultimate goal was to “resume” nuclear operations in a safe and compliant condition, including compliance with increasingly stringent DOE Orders governing Security. Despite changes in the scope of Site operations, the Site security mission remained the protection of DOE assets, i.e., SNM and classified matter. As “resumption” progressed, numerous physical conditions were identified that presented unacceptably high nuclear safety risks. Once it became clear that the changing world situation made the weapons production mission unnecessary and Site closure inevitable, the Site focused on remedying these nuclear safety risks, and adjusted priorities to not resume general operations and to proceed to closure of the Site.

#### Performance Based Integrating Management Contract

The original [K-H Performance-Based Integrating Management Contract \(PBIMC\)](#)<sup>37</sup> was awarded in 1995. K-H, as the prime contractor, became

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the “integrating” contractor responsible for overall management and planning. Four major subcontractors with specific areas of expertise were responsible for execution within their scope boundaries: nuclear operations; waste management, environmental restoration and decommissioning; infrastructure; and security services. There were numerous lower-tier subcontractors, typically contracted through the four major subcontractors, which provided specific services or staff.

### Site Conditions During the Beginning of the Integrating Contract

The Site contained four major plutonium operations buildings: Building 771, Building 776/777, Building 707, and Building 371, all of which were actively engaged in reducing the risks and potential consequences of nuclear accidents involving residual liquids, equipment, and stored wastes. Buildings 707 and 371 additionally were the locations of “operations” to stabilize plutonium residues, oxides, and metal prior to storage or eventual disposition off site (Building 707 restarted limited nuclear operations, initiating residue stabilization in 1995). While there were various other activities such as some decommissioning, environmental restoration, and waste management, the focus of the Site was on the plutonium building activities. Minor closure work was performed where there was a clear path forward. This included the disposition of some enriched and depleted uranium metal and production equipment to other DOE facilities, and the disposition and consolidation of classified items, which led to the general reduction in security interests and closure of some of the secondary limited and exclusion areas. The larger picture was that the opening of WIPP looked more certain, transuranic (TRU) waste acceptance criteria was beginning to stabilize, there was a consensus to dispose of residues as waste, and DOE Standard 3013 was being developed for long-term storage for SNM. The path forward to remove these materials from the Site was becoming clear, and it led through these plutonium buildings, especially Building 707 and Building 371.

Lack of storage space was one of the most vexing challenges. Storage had always been a problem. The entire Site had been designed and operated as a production facility; it emphasized throughput, not storage. The FBI raid and cessation of operations in 1989 turned the Site into a “storage facility” almost overnight. Storage of both high-level plutonium materials (metal, oxide, and weapons parts) and wastes (“residues,” mixed wastes, and low-level materials) contributed to overall space and logistics problems. Drums took up much of the space in the plutonium buildings, including hallways and utility areas, and shuffling drums while maintaining adequate material controls became a significant effort in itself. It was a case of “gridlock.”

*Lack of storage space was one of the most vexing challenges... With the “gridlock” created by the storage only limited decommissioning of the most critical buildings could occur.*

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The majority of these materials had no location to which they could be dispositioned, and in many cases represented a security vulnerability and nuclear safety risk that required active maintenance of safety systems and operating protocols to prevent or mitigate accidents during storage or transportation. While it was clear that the Site could not achieve closure with these materials remaining on site, it was unclear when they would leave the Site and where they would go. What was clear was that only limited decommissioning of the most critical buildings could occur, and that the waste generated by the decommissioning would exacerbate the problem. Concomitantly, security requirements did not lessen, nor did perceived threat to SNM and classified matter change.

Under the PBIMC the Site was still organized around operations functions, not closure functions, many of which involved SNM and classified materials. Identifying and shutting down functions and operations no longer needed for closure was not an easy task. Often an organization's overall justification would disappear, but imbedded functions that were previously a minor focus were still needed, resulting in multiple reorganizations that left parts of operations and staff scattered across the Site. Many of these operations had security requirements, including protection of classified mater and lower-attractiveness level materials. This complicated the determination of the current and future security requirements for a facility. Understanding and then addressing these diverse security functions and organizations was a major challenge for K-H that took considerable time and effort to work through.

### Closure and Security Planning

Concurrent and associated with the implementation of the PBIMC in 1995, greater emphasis was placed on Site closure and the role of planning in that effort. Several preliminary versions of the closure project baseline were produced between 1997 and 1999, each with an increased level of detail and certainty and each with a shorter schedule to completion of Site Closure.

Initial closure planning efforts considered how best to accommodate both the plutonium and residue stabilization (prior to offsite disposition), and the decommissioning activities occurring in adjacent areas. For a variety of reasons, the decision was made to reconfigure the PA (surrounding the major plutonium buildings) to provide the necessary protection for the stabilization activities while allowing more open access to the buildings where initially the greatest decommissioning effort would occur. This decision resulted in a number of secondary activities that became a major focus of the security reconfiguration effort.

*The decision was made to reconfigure the PA to provide the necessary security for stabilization activities while allowing more open access to buildings where D&D would occur.*

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As primary closure activities and sequences became better defined, the security activities and approaches necessary to achieve acceptable compliance were defined, and impacts of these activities evaluated. In cases where the impacts resulted in significant project conflicts, the Site began to investigate innovative security methodologies that deviated from existing Orders, but that nevertheless met the intent of the protection philosophy by “alternative-but-equivalent” approaches. Where equivalent security approaches were identified and accepted, variances were requested and obtained from the established DOE Orders. Where nonstandard conditions that deviated from Safeguards and Security directives existed, the protection rationale was supplemented with compensatory measures and deviations from the DOE Orders were obtained. In all instances, continuous and effective communication between all affected parties and management support facilitated the ability to manage the protection of SNM and classified matter in compliance with DOE orders, while allowing for innovative alternatives to their protection in support of closure activities.

*The acceptance of a graded approach meant that the amount of security and safeguards protection could be tailored to the risk.*

### Security and Safeguards Considerations at the Start of Closure

Part of the success of Site closure, and accelerated closure in particular, rested on the principles of maintaining adequate security, accountability of nuclear materials, graded safeguards approach, and qualified measurement systems for the determination of the amounts of nuclear materials present. As long as the SNM remained at the Site, the requirements for its protection could not be and were not compromised. This resulted in the Site keeping largely the same levels of security protection support, e.g., guards, guns, gates, and support staff, as had existed during the days of weapons production through this period.

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### Security and Safeguards Actions to Support Closure

As progress was made towards closure, and security and decommissioning needs were being reconciled, the Site initiated several key actions that facilitated the ability of Safeguards and Security to support accelerated closure. These actions are summarized below, although in many cases the relevant reference or additional narrative detail is omitted as it would be classified or have other concerns regarding release to the general public. Authorized individuals seeking more specific information are encouraged to contact the Safeguards and Security organization within EM Headquarters or at the EM Consolidated Business Center (EMCBC).

The utilization of the graded Safeguards and Security approach - The utilization of a graded approach by the separate responsible DOE and

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contractor organizations meant that the amount of security and safeguards protection could be tailored to the risk.

Consolidation of SNM - The consolidation of SNM into Building 371 was a prerequisite to reducing the PA, and is described later in this section.

Consolidation of classified matter - Consolidation of classified matter allowed for the elimination and/or reduction of classified storage areas. Also, the elimination of classified matter became a major effort in the reduction of security areas, e.g., in 1997 over 250,000 pounds of classified parts, tooling, and scrap was determined to be excess and was then dispositioned to non-classified configurations or shipped to other DOE sites. This allowed for the reduction of several major security areas at the Site, thus reducing costs and manpower.

The Variance for the Site Safeguards Termination Limits (STL) of Attractiveness Level D & E materials - This variance allowed for the storage of Attractiveness Level D & E materials outside of the PA under reduced security and safeguards requirements. The ability to store materials previously in Building 371 and elsewhere in the PA under requirements that would have much lower security costs was a prerequisite to moving materials from Building 371 to make room for higher attractiveness-level materials from other buildings. This in turn allowed the removal of all SNM from Building 707, Building 776/777, and Building 771 and thus for closing that portion of the PA.

The termination on-Site of STL materials - This is described further in the *Special Nuclear Material Removal Project* section, and also supported the storage of materials previously under security and safeguards protection outside of the PA under much less stringent requirements.

Splitting of the materials accounting system into both classified and unclassified systems - The separation of the materials accounting system into both a classified and an unclassified system allowed for the reduction of total number of classified items and their consolidation to Building 371. The unclassified portion of this system could then be managed outside of the previous strict security regime.

Advancements in the measurement and accountability of hold-up materials (characterization)<sup>198</sup> - Advancements in the measurement capability and hold-up accountability allowed for a reduction in the total uncertainty of hold-up material present. This resulted in security and safeguards requirements being more effectively tailored to specific situations.

*The Safeguard Termination Limit variance allowed for the storage of materials outside of the PA under reduced requirements ultimately allowing the closure of that portion of the PA.*

*Advancements in the measurement capability and hold-up accountability allowed for a reduction in the total uncertainty of hold-up material present. This resulted in security and safeguards requirements being more effectively tailored to specific situations.*

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Material Access Area (MAA) reductions - Material Access Area reductions was a necessary pre-step in the closure of buildings and the eventual reduction of the PA.

Limited Area (LA) reductions - A beneficial pre-step in the closure process, although not a precursor for the closure of the PA.

Protected Area (PA) reduction and reconfiguration - This was the biggest step and probably the most significant step in the security reconfiguration, especially since it was completed in July 2001, before the attack of September 11, 2001. With the reconfiguration, the PA became approximately 25% of its former size and a number of the former plutonium production buildings became more accessible outside of the PA. This allowed for uncleared workers to have better access to D&D areas, and thus led to reduced cost and higher efficiency. From the purely security point of view, the reductions in security costs were partially offset by more stringent requirements, e.g., new Orders, actions in response to the terrorist attacks of September 11<sup>th</sup> 2001, etc. However, the logistics to performing D&D activities was certainly enhanced.

The importance of these actions was that they reduced overhead costs and reduced the impact of security and safeguards requirements. The end result was that valuable resources were released to accelerate closure operations in other areas.

### A Creative Security and Safeguards Approach

It was a requirement that all of these actions would be performed within the compliance framework of the DOE Orders for the control and protection of security assets and SNM. However, all parties recognized that the guidance had not considered the need to define the means for reducing safeguards and security activities to reflect diminishing security risks, while concurrently facilitating closure operations and maintaining an acceptable level of Safeguards and Security. Although it was recognized that closure would eventually reduce security requirements, with no guidance to cover many first-of-a-kind situations, like a PA that would only be required for a few years, all major closure actions needed to be considered for their security impact.

Critical to this success was the creative thinking of personnel involved in the planning and execution of these activities, to recognize potential vulnerabilities, but also to identify more cost effective ways to meet the intent of the compliance requirements. Since the guidance was not always directly applicable, it became even more important to develop the

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necessary justification and documentation and move it through the approval process in a way that avoided hindering closure progress. This required active participation from all parties. Also, the support of upper management, both from the DOE and contractor, helped to convey the concept to the general plant population that maintenance of Safeguards and Security was a necessary component of the closure process.

### The Waste Conundrum

One particular challenge as the Site culture evolved towards that of a Closure Site was the difficulty of effectively conveying the idea that Safeguards and Security must always be paramount in the decommissioning and demolition of the Site. A widespread attitude within the hourly workforce was that, “it’s only waste, nobody wants it”. However, what was waste to Rocky Flats was not necessarily waste to a potential adversary. Since significant residues and low level waste material remained even after all Category I & II nuclear materials had been removed, the Site had to continue to maintain adequate Safeguards and Security until all potential security targets had been removed. Communication efforts by the security organizations helped to mitigate this attitude and ease the transition from production to closure while maintaining Safeguards and Security. Perhaps a more effective effort at communicating this concept earlier in the project would have resulted in ensuring that appropriate Safeguards and Security requirements were addressed earlier in the planning process.

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## ***PROTECTED AREA RECONFIGURATION PROJECT FEATURES***

### Initial PA Configuration

Since the early 1980’s, the Rocky Flats approach for protection of nuclear materials relied on a 140-acre PA covering the north portion of the industrial area. It contained almost all of the SNM handling and storage locations and the material access areas. A separate and much smaller PA located in the southeast portion of the industrial area contained one single building (Building 886, the Critical Mass Laboratory). Surrounding the primary (or larger) PA were security fences, towers, and intrusion detection devices. There were three access “portals,” two of which allowed vehicle traffic. Access was restricted based on access authorizations and identification, guard force inspections, and other controls. While this was an efficient means of implementing security controls in an operating environment – an established workforce, cleared personnel, and modest vehicle traffic through the portal – it was a major

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source of inefficiency in a closure environment and also a symbol of the status quo operating-type environment.

Early in its closure planning the Site recognized that the majority of the decommissioning work would be done in the four plutonium buildings, and that to make an accelerated schedule the two oldest – Buildings 771 and Building 776/777 - would have to start first. The layout of the protected area was such that these two and a third, Building 707, were clustered close to each other. Several hundred yards separated these three from the fourth, Building 371. Building 371 was newest and the biggest individual building, and located in areas with little soil or groundwater contamination. If all work that involved processing of accountable quantities of material (mostly storage, packaging and shipping, and residue processing) could be relocated to Building 371, then the PA could in principle be “shrunk” to surround just that building with no loss in control. The question was whether the benefits of decommissioning the three older plutonium buildings in the “reduced security” area outside the modified PA outweigh the cost and schedule penalties of modifying the PA. An alternative, to create “bubbles” of fenced areas inside the PA where uncleared individuals could move freely, had been tried on the Building 771 and Building 779 projects. The “bubble” approach had mixed success in that it avoided the excessive use of cleared escorts and allowed sufficient manpower to be applied to the decommissioning but still severely restricted personnel and vehicle movement compared to normal construction.

### Reconfiguration Pros and Cons

The initial advantages of decommissioning in a reduced-security area was obvious, including unrestricted vehicle and personnel access, a reduced number of security “lockdowns” that result in work stoppages, and reduction in clearance requirements. The disadvantages were also obvious. Before the new PA could become operational new physical barriers and detection systems would have to be designed and installed and the approval and acceptance processes would have to be completed. Before the old PA could be eliminated substantial SNM, residue, and waste activities would need to be relocated and existing material access areas would have to be sufficiently cleaned up and downgraded, sometimes while containing significant inaccessible inventory. Critical path activities such as stabilization of SNM and residues would be disrupted, a counterproductive effort. With the Closure Project completion schedule a major concern, it was clear that delay in implementation would reduce the benefit. After some preliminary analyses, the decision was made to go forward.

*There will often be “yet one more” item found in facilities that had years of classified operations – people didn’t realize what they had.*

*In retrospect perhaps the greatest justification for the PA Reconfiguration was risk mitigation for closure project circumstances that never actually occurred.*

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In retrospect perhaps the greatest justification for the PA Reconfiguration was risk mitigation for closure project circumstances that never actually occurred. At the time the decision was made there were significant uncertainties associated with stabilization and shipment of SNM. The Plutonium Stabilization and Processing System (PuSPS) was an automated, unproven, technologically-elegant system designed to be installed in Building 707, the DOE Standard 3013 was not final, and major roadblocks needed to be removed before the Savannah River Site could accept the SNM even if it could be stabilized. Delays in stabilizing or shipping the SNM could easily have added years to the disposition of the SNM, perhaps even requiring prolonged storage of the material onsite. The PA Reconfiguration was expected to mitigate the impact that prolonged delays in the disposition of SNM would have caused, allowing the decommissioning and environmental restoration to proceed on a largely independent track. However, since most of these SNM problems were solved through other means, the PA Reconfiguration had less impact than expected.

### Impact of PA Reconfiguration on Response Times

While the planning and design for the PA reconfiguration revealed additional problems, there were also some additional advantages. Isolating Category I & II SNM within a smaller PA provided an additional security benefit. Minimizing the target areas reduced the risk of possible theft or diversion and the Protective Force personnel being concentrated within the much smaller PA reduced the average response time. The operational efficiencies that were achieved through more expedient personnel access to facilities outside the reconfigured PA were also greater than anticipated. The change allowed for a decrease in the number of personnel assigned to support roles and an increase in the number of personnel performing decommissioning and demolition. Finally, the reduction of the PA reinforced the realization of the workforce that closure was in progress.

### Impact of PA Reconfiguration on the Number of Security Clearances

The reduction of the PA substantially reduced the number of Q-clearances and L-clearances required for routine access into controlled areas. However, the PA reconfiguration did not *completely* eliminate the need for clearances. The personnel security function needed to remain largely in place onsite as long as SNM was still onsite, which continued until August 2003. The reduced requirement for higher-level clearances produced little direct cost savings to the building project managers. Substantial benefits did accrue to the government due to a reduced need for security reinvestigations and lower level (“Q” vs. “L”) reinvestigations. Other

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efficiencies such as workforce management and material movement at the Site also saw some benefit, but these are difficult to quantify.

### PA Reconfiguration Project Execution

The achievement of readiness for this significant change in the Site security posture required the removal and/or relocation of large quantities of classified matter and SNM throughout the Site. Specifically, the consolidation allowed for the eventual closure of security areas, and the reduction of the PA. Much of the classified matter associated with the non-nuclear production activities at the plant was either shipped off site to other DOE facilities, or was reconfigured to non-classified forms and treated as waste materials. The remainder of the more highly attractive SNM was consolidated from a high of seven MAAs (historically) to one remaining MAA within Building 371. Remaining classified matter was located within DOE Order compliant repositories.

The development of the PA Reconfiguration project began during 1995, and despite changes in scope and several redesigns, came to fruition in a November 2000 final design that the Site then implemented in July 2001. Prior to initiating implementation, the K-H Vulnerability Analysis Team was asked to establish a relative “risk value” for implementing the preliminary design for the modified intrusion detection system.

With its high visibility and the importance of its success to Site closure, the PA Reconfiguration project attracted substantial K-H management attention. The success of the project resulted in increased efficiency of conducting closure work within the former PA, and therefore supported the accelerated closure schedule. The net result was an identifiable reduction in the cost of overall Site safeguards and security compliance and a less quantifiable but very real savings resulting from increased efficiency and culture change.

### ***OTHER SECURITY AND SAFEGUARDS FEATURES***

#### Vulnerability Analyses As A Tool for Accelerating Closure

The Site Safeguards and Security Plan – Vulnerability Analysis (SSSP-VA) identifies potential targets, establishes target priorities, develops protection strategies, determines adversary paths, develops risk determinations, and recommends compensatory measures. The results of these activities were documented in the Site Safeguards and Security Plan (SSSP), updated annually.

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The SSSP-VA team was comprised of representatives from the main contractors at the Site and DOE, RFFO. The SSSP-VA team had specific roles and responsibilities to:

- Conduct the modeling analyses to determine risks and consequences of the perceived threats, i.e., the DOE Design Basis Threat (DBT).
- Characterize facilities and Safeguards & Security measures and systems at the Site and evaluate the effectiveness of controls against the DBT.
- Propose probable adversary paths for neutralization modeling and performance test requirements. Incorporate results into the Vulnerability Assessment Report (VAR) as a part of the SSSP.
- Determine Probability of Neutralization of proposed scenarios.
- Assist in evaluating the creditability of scenarios and adversary paths.
- Participate in analyses to provide response data and support to scenario development.

All planned and/or proposed changes to the SSSP with respect to security areas, protective force deployment, and nuclear material movement or storage were evaluated within the framework of a Vulnerability Analysis (VA). The same analysis was used to evaluate actions that accelerated closure. Both changes as a result of PA reconfiguration and proposed changes in the security posture to achieve accelerated closure efficiencies were evaluated. Since it was an iterative process, the VAs required time to perform, evaluate the results, and rework the analysis depending on the scope and objectives of the proposed changes in the Safeguards and Security systems at the Site, and must be included reasonably early in the planning process. However, the increased efficiencies identified and eventually implemented in process operations in support of an accelerated closure schedule more than compensated for the time spent on this activity.

VAs were written for all changes in security configuration, either as formal documents or to supplement to existing VAs. Most importantly, the collected VAs became a part of the analyzed upgrade case for the yearly submittal of the Site Safeguards and Security Plan (SSSP). In 1999, the consolidation of nuclear materials and classified matter were issues addressed in the upgrade case of the SSSP. In 2000, the reconfiguration of the PA was addressed. With the validation, approval, and acceptance of these documents, approval was also received for alternate or non-standard approaches to security and safeguards issues. Examples of actions covered in the VAs were such issues as storage of Pipe Overpack Containers (POC) outside of a PA, use of limited security

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controls in Building 906 storage area for waste, removing residues/wastes from PA, etc. Once approved in the updated SSSPs, the changes were implemented through the subsidiary Site plans and procedures (e.g., the Material Control and Accountability Plan).

### Waivers and Variances

Of the variances and waivers obtained supporting security reconfiguration, there were a few that were notable in their affect on managing security at the Site. The most important of these are listed below, and as described earlier, can only be referenced or detailed to a limited extent:

Safeguards Termination Authorization for All Attractiveness Level D Waste Derived from Plutonium Bearing Residues - This variance request (VR) allowed for the termination of safeguards controls for waste materials on Site prior to shipment. The benefit was that the protection and short term storage of these materials could be accomplished at a much-reduced cost than would be required for accountable nuclear materials.

Determination of Attractiveness Levels within Material Access Area – This VR facilitated the ability to efficiently downgrade material categorizations and consequently the MAAs leading to the eventual reconfiguration of the PA.

Use of Type III Degausers for Tape Sanitization – This VR provided a more efficient but equally acceptable method for sanitization of computer magnetic tapes leading to an overall reduction of classified matter at the Site.

Allowing Site Employees Holding Active Access Authorizations (AAs) Under a Classified Contract to Transfer Between Classified Contracts Within the Same Company Without Formally Transferring the AA – The implementation of this VR provided a mechanism for easing the burden of transferring clearance from one contract to another within the same company. With the pressure of meeting closure schedules, many employees found themselves moving to different contracts within the same company as specific tasks were completed.

Line Supervision 371 PA – This variance provided the acceptance of the line supervision (i.e., secured data system) of the redesigned and reconfigured PA.

Intrusion Detection, Portal 2, Building 372 – This VR provided approval of the detection instrumentation on the PA reconfiguration.

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PA Physical Reconfiguration – This VR provided approval of the design of a “non-standard” PA physical security design.

Physical Protection of Intrusion Detection System – This waiver provided acceptance of issues dealing with the PA reconfiguration and the intrusion detection system.

Building 371 Door 333 Protective Force Post – This VR expedited building operations personnel access into the Building 371 MAA.

All of the above variances and waivers played a role in the Site’s ability to effectively and efficiently manage compliance to DOE Orders for Safeguards and Security. While some of these deviations appear small, the ability to make proactive changes and provide operational flexibility within the context of the DOE Orders resulted in the accelerated progress towards Site closure. The approach was also consistent with the approach used for safety, technical, regulatory, and other issues, to seek continuous, evolutionary improvement.

### Closure Security after SNM Disposition<sup>112</sup>

After the completion of SNM shipments in the summer of 2003 the security requirements at the Site were substantially diminished. Appropriate surveys and audits were conducted, the requirements were downgraded to property protection status, and the PA guardposts and fences removed. The personnel security requirements were also reduced appropriately. Some level of site security continued to support TRU waste storage and shipment through April 2005. Following the last TRU shipment, Site security was reduced to standard industrial security. DOE security oversight needs also diminished, and as of January 2004 RFFO security staff was reduced to a single individual.

### Security Issues for Transition

Beginning in summer 2003 the Rocky Flats Project Office (RFPO) began active coordination with the newly-created Office of Legacy Management to transition the long-term maintenance and monitoring tasks. As the planning of the transition progressed into 2004, the records management scope appeared as one of the larger and more difficult tasks. One important issue making the records function so challenging was the substantial volume of classified records and electronic databases that K-H would turn over to the DOE. Most of the classified records related to the former weapons production mission, which pre-dated K-H. As final buildings were being demolished a disposition path was needed for the records; their relocation became the critical path action to allow

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demolition of B-460. To address this need the RFPO began looking for a suitable location to quickly and inexpensively prepare a classified records vault that would meet all DOE security criteria. A suitable building was identified at the Denver Federal Center (DFC), an enclave of various Federal agencies west of Denver and about 15 miles from the Site. A vault-type room was built and certified within B-55 at the DFC, and B-460 classified records were relocated to the new vault in March 2004.

Legacy Management had identified records management, including classified records, as a core mission, but did not agree to support classified records transition according to the expected K-H closure completion (by then appearing to be possible as early as October 2005). The Legacy Management decision forced EM Headquarters security staff to consider several alternatives to address the classified records. An additional complicating factor for the classified records was that a substantial number were related to the ongoing Cook litigation. Judicial rulings had mandated that the records remain in Colorado until the litigation (including appeals) was complete, potentially many years or even decades. After significant discussion and consideration of alternatives EM Headquarters selected the EMCBC to retain control of the classified records and databases. Legacy Management would take the unclassified material. The decision was influenced by the existing vault with the classified material in B-55 at the DFC. EMCBC acceptance of the classified records, kept in the B-55 vault, was a very low cost choice with minimal additional management action required. The final agreements related to the records transitions are documented in the [Site Transition Plan](#) for EM and LM approved March 2005,<sup>162</sup> and the [Memorandum of Understanding between RFPO and EMCBC](#) approved March 25, 2005.<sup>193</sup>

### ***KEY SUCCESS FACTORS***

1. Safeguards and Security compliance needs to be integral to the planning process as long as there are assets that must be protected.
2. Because a material is being dispositioned as waste doesn't automatically mean there are no security requirements – as a result of the Site's success in dispositioning higher-grade materials, some of the remaining wastes retain security controls and become a driver for security infrastructure.
3. A proactive program that applies flexibility in Safeguards and Security compliance requires incorporation of security planning in the planning process, sufficient lead time, and extraordinary cooperation of all parties.

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4. Vulnerability Assessments were an effective tool in communicating compliance and implementing change, in the context of the Site Safeguards and Security Plan.
5. Waivers and variances were utilized effectively to support Site Closure and were proactively supported by EM Headquarters security personnel.
6. Significant efficiencies can be gained from shrinking security boundaries to allow workforce flexibility for non-operations activities (e.g., decommissioning and environmental restoration) and reducing inefficiencies that result from a high-security environment.
7. Completing the removal of classified tools and parts to allow building closure can be a significant activity in facilities that had years of classified operations. Individual determinations may be required for individual items – people didn't always realize what tooling was in storage. In most buildings the piecemeal downgrading was helpful, and was only a significant problem in one Rocky Flats facility. For that one facility, declassifying the whole building at once and earlier using the operating personnel would have mitigated this problem.
8. When evaluating approaches for a new perimeter intrusion and detection system (necessary for a PA reconfiguration) that employ less technology and equipment, and more labor, a site should be prepared for start-up problems and cost escalation.
9. Overhead cost savings from reducing the number of personnel clearances is not that significant as long as a significant security area and workforce is still required. Reinvestigation costs drop substantially, but the direct project gets little cost savings.
10. DOE may have substantial obligations at closure completion regarding classified records and material. Early coordination and planning are essential to address these issues.
11. A positive attitude shift toward more teaming and cooperation between Federal and contractor security staffs led to collaborative problem solving. Vulnerability assessments, deviation requests, assessments, and many other safeguards and security issues were resolved through breaking down barriers and working together to meet the need.
12. The classified and sensitive nature of security issues complicates the sharing of lessons. Interested and authorized individuals seeking more

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specific information related to this section are encouraged to contact the Safeguards and Security organization within EM Headquarters or at the EMCBC.

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***REFERENCES***

<b>Citation</b>	<b>Ref. No.</b>
<a href="#"><u>Contract No. DE-AC34-95RF00925, US Department of Energy ROCKY FLATS FIELD OFFICE and KAISER-HILL COMPANY, LLC, April 1995.</u></a>	<a href="#"><u>37</u></a>
<a href="#"><u>Rocky Flats Baseline Performance Review Report, June 2005, Appendix A, LL - 25 Safeguards and Security at a Closure Site.</u></a>	<a href="#"><u>112</u></a>
<a href="#"><u>Site Transition Plan for the Rocky Flats Environmental Technology Site, March 2005.</u></a>	<a href="#"><u>162</u></a>
<a href="#"><u>Service Level Agreement Between The Environmental Management Consolidated Business Center (EMCBC) and The Rocky Flats Project Office (RFPO), April 2005.</u></a>	<a href="#"><u>193</u></a>
<a href="#"><u>Measurement Plan for Holdup Characterization of Building 771, Revision 1 (4-81 232-97-PLAN-HOLDUP-00 1), April 1998.</u></a>	<a href="#"><u>198</u></a>