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Subject Audit of Physical Security and Inventory Control Measures to Safeguard the National Collections at the National Museum of Natural History, Number A-05-06

This report, the last in our series of three reports covering security issues at the Smithsonian,¹ presents the results of our audit of the security and inventory control measures safeguarding the collections at the National Museum of Natural History (NMNH). As noted in *Concern at the Core, Managing Smithsonian Collections*, the Office of Policy and Analysis' comprehensive study of collections management at the Institution, Smithsonian collections are increasingly at risk because of declining resources to perform basic collections management. The Office of the Inspector General (OIG) initiated this audit to examine physical security measures and inventory controls, two aspects of collections management that are essential to reduce the risk of loss or theft.

Our objectives were to determine whether (1) physical security is adequate to safeguard the collections, and (2) inventory controls are in place and working adequately. We assessed the use and effectiveness of security guards and security devices throughout NMNH; evaluated access to storage facilities by outside visitors, volunteers, and contractors; examined inventory controls; and identified missing or misplaced objects by testing inventories from six of seven departments. We also compared NMNH practices to other museums, including the American Museum of Natural History in New York. A detailed description of our audit scope and methodology is contained in Appendix A.

BACKGROUND

NMNH, with the largest natural history collection in the world, manages over 126 million objects, which account for over 92 percent of all the Smithsonian's collections. Of these objects, approximately 89 million (or 70 percent) are housed at the main NMNH building on the Mall, with the remainder at the Museum Support Center (MSC) in Suitland, Maryland, and smaller storage facilities in Columbia, Maryland and Virginia suburbs. Table 1 shows how the collections are divided among the seven NMNH departments.

¹ *Employee and Contractor Screening Measures*, Report No. A-05-07 (August 21, 2006); *Management Advisory Report on Access Controls*, Report No. M-05-05 (July 25, 2006).

Table 1
Collection Objects by NMNH Department

Department	No. of Objects (millions)
Paleobiology	42.7
Invertebrate Zoology	34.3
Entomology	32.5
Vertebrate Zoology	9.6
Botany	4.8
Anthropology	2.3
Mineral Sciences	<u>0.3</u>
Total	126.5

Smithsonian Directive (SD) 600, *Collections Management*, states that the Smithsonian will provide reasonable access to its collections, both physical and intellectual, and will balance that access with preservation and protection concerns. The policy further requires that the Smithsonian establish authority, policies and procedures, and assign responsibility to control, monitor, and document all access to and use of its collections. Responsibility for the physical security of perimeters of and entrances to collections rests with the Office of Protection Services (OPS), a division of the Institution's Office of Facilities Engineering and Operations, as well as museum collecting units.

The Smithsonian's *Security Handbook* directs OPS to implement a comprehensive protection and physical security program that includes access and property control requirements to protect collections from unauthorized handling and removal or theft. The *Handbook* requires OPS to install physical and electronic surveillance and to manage the security officer staff, the alarm system and other security equipment. In addition to these requirements, OPS issued "Protective Design Standards for Technical Security," which outlines minimum technical protection requirements for vaults, collections storage, and other collections areas. OPS must also conduct surveys of major facilities and offices at least once every 5 years to determine overall risk and to recommend appropriate security measures.

Museum collecting units are responsible for ensuring that collections are maintained in controlled areas that are adequately protected against theft and vandalism. SD 600 specifies that each collecting unit should develop, implement, and adhere to an authorized, written collections management policy to ensure the proper physical care of its collections. It further states that each unit should provide documentation of each collection item that will identify, locate, and give an account of its condition to ensure maximum accessibility consistent with its security.

To further deter theft and maintain accountability over the collections, SD 600 requires a continuous inventory system, a process that includes (1) conducting, supervising, and approving cyclical inventories and reconciliation of collection records; (2) implementing

a written cyclical inventory plan; and (3) ensuring the separation of duties and implementation of other internal controls to prevent the unauthorized removal of collection objects.

RESULTS IN BRIEF

Overall, we concluded that physical security and access controls should be strengthened to reduce the risk of theft or damage to NMNH's collections. In particular, we found that although security was adequate in some departments, several areas need improvement:

- *Missing or inoperative security devices.* There were many missing or inoperative security devices that could allow non-staff access to the collections, such as improperly secured doors; missing and inoperable card access readers; areas without alarms or with non-functioning alarms; unlocked cabinets; and an insufficient number of cameras or other devices to monitor individuals working in high-value collections areas.
- *Unlocked storage and poorly controlled keys.* A significant portion of NMNH's collections were stored in unlocked cabinets or in locked cabinets in storage areas where the keys were poorly controlled. NMNH lacked a policy governing the use of keys and, in some departments, there were little or no controls over keys.
- *Inadequate interior guard coverage and in-person response to alarms.* Security officer coverage of the collections areas has been significantly reduced, and officer response to alarms has been inadequate. OIG staff successfully entered collections storage areas, accessed collections, and exited through perimeter doors undetected. When alarms sounded, no security officers responded in person.
- *Inadequate supervision of non-staff in collections areas.* Contractors, researchers, volunteers, maintenance staff and visitors were often left alone in collections areas without supervision. Visitors' and employees' bags were not checked going into or out of collections areas, contrary to policies and procedures at other museums.

Staff shortages and budget constraints are the main reasons management cited for the problems we identified. In light of these constraints, we believe NMNH and OPS officials should, at a minimum, immediately prioritize deficiencies, focusing on those that pose the greatest risk to the security of the collections, and assess the cost of complying with technical security standards. Management should also institute and enforce stricter controls over access to the collections, including access to keys to locked storage areas and cabinets, as well as over supervision of visitors, instead of relying on the goodwill and trust of employees and visitors to the collections areas.

Underscoring a key finding from *Concern at the Core*, we also found that NMNH generally did not have established inventory plans or did not follow plans that were

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developed. With few exceptions, cyclical inventories were not conducted, and inventory records we reviewed were inaccurate or incomplete. Based on our limited tests of the collections inventory, we identified 53 of 2,320 objects sampled that were either missing or had been misplaced. Museum staff subsequently located 40 of the 53 objects. These and other weaknesses make it difficult to account for items and their location, thereby increasing the risk of loss or theft. These weaknesses also mean that collections may not be readily accessible to researchers, educators, and others from inside and outside the Institution.

According to management, NMNH does not have adequate staff to perform their own work at an acceptable rate, much less document inventory control over the collections, update their collections information systems, and pursue any problems that are found. Accordingly, NMNH should implement the recommendations of *Concern at the Core* and, more specifically, develop plans for a prioritized cyclical inventory; make inventory goals a part of collections managers' performance plans; and finalize the museum's inventory plan.

RESULTS OF AUDIT

Physical Security over the Collections Needs Strengthening

We concluded that physical security over the collections at NMNH needs strengthening to reduce the risk of theft or loss. First, numerous security devices were either missing or inoperative. Second, a significant portion of NMNH's collections were stored in unlocked cabinets or in locked cabinets in rooms where the keys were poorly controlled. Third, over the last few years security officer coverage assigned to the collections areas has been significantly reduced and responses to alarms have been inadequate. Finally, supervision of contractors, researchers, volunteers, and other visitors to the collections areas was minimal.

Interior Perimeter Security Devices Were Missing or Inoperative

In December 2004, OPS issued design standards delineating protection requirements for Smithsonian facilities, including security devices for vaults, collections storage areas, exhibit galleries, and building perimeters. For interior perimeters of collections areas, the standards require the installation of cameras, intrusion-detection sensors, door access-card readers, and other security devices based in part on the value of the collections to be protected.

To its credit, in May 2005, OPS completed a detailed assessment of all security devices at NMNH's Mall building. That assessment noted at least 190 instances where devices did not meet technical security standards and, thus, could allow unauthorized access to the museum's collections storage areas. The deficiencies included missing or inoperative sensors on doors; a lack of motion detectors or cameras in some high-value collections areas; and stairwell doors with access to collections areas left unlocked.

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Through observations and tests of security devices as well as discussions with OPS officials, we determined that most of the security deficiencies identified in the OPS assessment had not been corrected. Many SD807 Ex. 2 card-access readers were inoperable and door locks in multiple areas were broken, enabling easy access to several floors of collections storage. For example, OIG auditors, without displaying any identification, repeatedly succeeded in entering two sets of unlocked doors that led to SD807 Ex. 2 collections storage areas, which housed numerous unlocked cabinets containing objects valued at several thousand dollars each. Auditors also entered a maintenance area near the SD807 Ex. 2 through unlocked doors, gaining access to multiple floors of collections areas (see photo below). Appendix C, a floor diagram of one collections area in the NMNH Mall building, illustrates these security device problems, showing missing cameras and motion detectors, unlocked doors, and inoperable card readers.

SD807 Ex. 2

OPS officials stated that although it is their desire to lock all SD807 Ex. 2 access doors, the previous NMNH Director requested that the doors be left unlocked so his staff could move freely throughout the building. OPS also indicated that they are studying how to keep SD807 Ex. 2 doors locked and also comply with applicable fire and life-safety requirements. Regarding the access doors near SD807 Ex. 2 OPS officials informed us that these particular doors had an architectural design problem that was not compatible with the current card readers; however, they stated that the design work for new doors will be completed in the near future.

At the MSC facility, we found that the majority of security devices were in place and operable. However, the SD807 Ex. 2 was not alarmed, and the doors were difficult to close and were frequently left open at night. We also observed that the SD807 Ex. 2 as well as those to the SD807 Ex. 2 collections area had not been working for some time. We were easily able to enter and gain access to SD807 Ex. 2 collections objects that were on a table to be processed. After we brought these items to OPS' attention, OPS and collections management officials informed us that they repaired the card access readers on the SD807 Ex. 2 doors and the SD807 Ex. 2 doors were secured.

SD807 Ex. 2

In discussing the security device issues with OPS management, we noted that OPS had not fully assessed the cost of bringing NMNH security devices into compliance with its security standards, nor had it developed a prioritized list for making the needed improvements. For some deficiencies, management postponed fixes until major renovations planned for the museum, such as the new Oceans Exhibit (to open in 2008),

are completed. OPS officials cited staff limitations and budget constraints as the primary reasons for not correcting the security device deficiencies.

OPS officials indicated that their budget submissions go through several layers of review, including the Institution's Office of Planning Management and Budget and eventually to the Office of Management and Budget, and their requests are frequently denied. OPS provided us with its *Security Design Standards Funding Plan*, which contains \$2.2 million in proposed security improvements for NMNH. About \$950,000 of this amount is budgeted for the installation and upgrading of various access controls in the collections storage areas. We noted that the plan does not contain specific completion dates or identify specific collections areas, and that OPS officials stated these funds are designated for FY 2009.

Physical Safeguards Within Collections Areas Were Inadequate

The primary physical safeguards used to protect museum objects within the collections areas themselves are vaults, access doors with locks, and storage cabinets with locks. At the NMNH Mall building, the SD807 Ex. 2 and most collections areas with high-value objects have access doors and storage cabinets with locks. However, we observed that a substantial number of storage cabinets, some of which contain high-value collections, do not have locks. Further, for those cabinets and collections areas with locks, controls over the assignment and tracking of keys were poor, weakening the protections afforded by the physical controls.

SD807 Ex. 2

For example, in four of seven departments, there were hundreds of unlocked cabinets containing collections of high commercial, scientific, or educational value. The more valuable scientific collections contain "type" specimens, which are considered to be the original reference or perfect specimen of a given species and are crucial for classification. In the SD807 Ex. 2 department, some of the most valuable collections are stored in unlocked cabinets that can be easily reached from stairwells and doors that lead to public areas. In two other departments, SD807 Ex. 2 and SD807 Ex. 2 collections staff estimated there were 73,000 and 21,000 type specimens, respectively, stored in unlocked cabinets.

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SD807 Ex. 2

We also observed that the SD807 Ex. 2 room of the SD807 Ex. 2 is often left open throughout the day for collections staff and volunteers, whose work involves items mainly in unlocked cabinets. Although this area has outside locked access doors, there are at least nine individuals who have card access to these outside doors and thus could enter the SD807 Ex. 2 room. The objects in the SD807 Ex. 2 room are often of considerable monetary value, such as one specimen that the collections manager estimated was worth SD807 Ex. 2. In our tests of inventory purchases made in FYs 2003 and 2004, we found that 116 out of 123 specimens, which were part of a lot valued at SD807 Ex. 2, were also stored in unlocked cabinets in this room.

According to management officials, a lack of funding has hampered their ability to procure new cabinets with locks. They indicated that new cabinets could easily exceed a thousand dollars each and there were literally thousands of storage cabinets without locks throughout the museum. In addition, shortages of management and staff resources have made it difficult to provide adequate oversight of volunteers and contractors who work around collections stored in the unlocked cabinets.

While in the short-term there is probably little NMNH officials can do to procure new locking cabinets, they can reduce the risk to the collections through better management of keys for those cabinets that do have locks. According to *Suggested Guidelines for Museum Security*,² museums should maintain a written security policy and practice sound key control and retrieval. The *Guidelines* state that, at a minimum, all keys issued should be signed for on a register; there should be a key retrieval system to make sure all keys are returned when an employee leaves; all keys should be stored in a secure space and not be removable without authorization; and one person should be responsible for key control, issuance, and retrieval.

NMNH has no comparable museum-wide procedures or guidelines for distributing cabinet and storage room keys, and we found that controls over these keys vary widely among its departments. At NMNH's Mall building, collections managers indicated that the smaller departments have as few as two to four staff members who have key access, while the largest departments have as many as 41 people (including non-staff with emeritus status) with various degrees of key access. One collections manager told us that

² These standards were adopted by the Standing Committee on Museum, Library, and Cultural Property Protection of the American Society for Industrial Security and the Museum Association Security Committee of the American Association of Museums, Revised 1997.

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her department does not track cabinet keys once they are given out, whether to volunteers, contractors, researchers, or students. Clearly, the lack of written policy on accountability for cabinet keys and loose controls in some departments increases the risk of theft and loss of collections objects.

At MSC, with the exception of the Anthropology's Ethnology Division, accountability for access door keys to collections is also a concern. The MSC Management Officer informed us that she does not have an inventory of all the keys at the facility and does not know who has keys or where they are all located. She believes that all doors should be re-keyed and that she should maintain inventory control over all the keys to the collections areas. We note that the American Museum of Natural History (AMNH) in New York City recently took this step, re-keying all access doors to collections areas to implement better controls over their key inventories.

Security Officer Deployments Were Strained and Responses to Alarms Were Inadequate

Our audit identified two issues related to the use of security officers at NMNH, who are critical to deterring the loss and theft of collections. First, staffing levels for security officers at the NMNH Mall building have steadily decreased from a high of 112 in November 2003 to the current level of 78, a reduction of 34 positions or about 30 percent. OPS and NMNH security managers attribute the reductions at NMNH to budget constraints and the normally high turnover rates for security officer positions. Further, in response to congressionally mandated post-September 11 Homeland Security priorities as well as resource constraints generally, OPS eliminated 21 guard posts³ and redeployed its security officer force to focus on the external perimeter areas of the museum, concentrating coverage on controlling public entry into the museum rather than securing the interior collections areas. As a result, OPS had not fully implemented staffing formulas it previously developed that took into account the extent of the patrol area and the value of the collections.

For perspective, while the NMNH Mall building is the Smithsonian's largest museum, encompassing over 1.3 million square feet, receives an estimated 5 million visitors annually (it is the second most visited of the Smithsonian museums), and houses over 70 percent of NMNH's collections, only about 10 percent of the Institution's security officer force is assigned to NMNH. Consequently, the current assigned level of 78 security officers is considerably lower than museum industry standards. According to the International Committee on Museum Security, for natural history museums, security coverage should be one guard for every 7,000 square feet. Our inquiries of non-Smithsonian museums identified comparable standards, with ideal ranges of one security officer for every 8,000 to 9,000 square feet. Using industry-wide standards as a guide, NMNH should have between 144 and 162 security officers for its Mall building, which is about double the current staffing level.

According to OPS records, the total number of *authorized* security officer positions Institution-wide declined from 1,004 in 2003 to 816 in 2006. However, during this

³ A guard post is an area patrolled by a security officer.

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period, the *actual* number of filled positions remained about the same, at slightly less than 800. Moreover, the opening of new museums (the Udvar-Hazy Air and Space Center and the National Museum of the American Indian) and the reopening of the National Portrait Gallery and American Art Museum have created severe strains on OPS' ability to deploy adequate numbers of security officers at each facility.

The second issue we identified, based on discussions with collections managers as well as our observations during walkthroughs and visits to the NMNH Mall building and MSC, is that security officers frequently did not respond in person to alarms that sounded in the collections areas. We noted that the lack of response was contrary to industry best practices and Smithsonian policy. For example, *Suggested Guidelines for Museum Security* requires that at a minimum, whenever an alarm sounds, an officer or other person with security training should respond. These guidelines also emphasize that alarms should not be ignored and that assumptions should not be made about their origins. In addition, OPS' Unit Control Room Procedure Number 42 requires control room officers in each facility to immediately acknowledge audible alarms and dispatch security personnel as appropriate.

During our walkthroughs we observed the lack of officer response in person to alarms. In one department, we entered two sets of unlocked doors that led to collections storage areas with valuable items in unlocked cabinets. Although alarms sounded as we entered, no security officer ever responded in person. The collections manager for this department indicated that because the outer doors provide access for SD807 Ex. 2, she has never witnessed officers responding to the alarms. At MSC, when we opened a back door that led outside from one of the pods, an alarm sounded but no security officer appeared. We followed up with a security officer who said he did not get a report of any alarm going off. According to MSC collections managers, OPS officers rarely investigate door alarms, and sometimes the alarms on doors between connecting buildings will stay on for several hours before security officers shut them off.

OPS management officials informed us that although Smithsonian security procedures require a security guard response in person to a sounded alarm, they permit only supervisory officers to enter collections storage areas to respond to alarms. Management again indicated that staffing constraints were problematic, and that there simply was not enough supervisory coverage to respond to all alarms. At the time of our audit, there were only 11 supervisory officers assigned to NMNH to cover all shifts.

Supervision of Non-Collections Staff and Visitors Was Minimal

Closely monitoring non-collections staff, contractors, and other visitors while in collections areas is essential to minimizing the risk of theft, damage, or the loss of collection objects. Yet, in every department we reviewed, we either observed or were informed by collections officials of instances where volunteers, contractors, and non-collections staff that they were familiar with, such as maintenance workers, researchers, educators, and students, had unsupervised access to collections areas including those with unlocked cabinets and valuable objects.

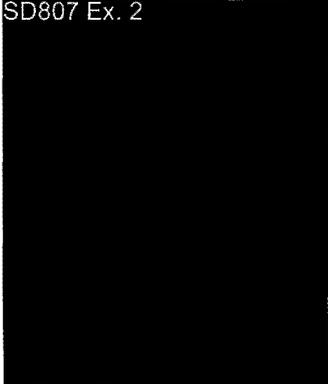
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SD 600 states that the Institution will provide reasonable physical access to its collections, but that this policy must be balanced with preservation and security concerns. Other industry guidelines are more specific. *Suggested Guidelines for Museum Security* recommends that all museums adopt a policy regulating access of all persons. Two non-Smithsonian museums we contacted, the American Museum of Natural History in New York City and the Cleveland Museum of Natural History, have strict guidelines for non-staff access. They prohibit general access to the collections for volunteers, contractors, and outside researchers and educators and require that such individuals, when in collections areas, work under the direct supervision of a scientific staff member at all times.

We found that NMNH collections management oversight of visitors in the collections areas was not nearly as rigorous. During our audit we noted the following:

- The bags and personal belongings of employees, contractors, researchers, volunteers, and other visitors were not inspected on entry to or exit from collections areas at the NMNH Mall building or at MSC. Moreover, security personnel rarely checked for property passes when employees left the building with museum property. In contrast, we found that screening of all employees and visitors is standard in the private sector. The American Museum of Natural History in New York City, for example, routinely checks the bags of all visitors going in and out of its collections storage areas.
- Non-Smithsonian researchers were frequently left alone in collections storage areas with unlocked cabinets. Further, maintenance and repair contractors occasionally worked in collections storage areas containing unlocked cabinets without the collection manager's knowledge or oversight, moving storage cabinets around and exposing the objects to damage or other loss.
- At MSC, according to the facility manager, individuals can walk around unnoticed and some visitors are given access cards to the storage areas (known as pods). These visitors are sometimes allowed to go into the pods with no supervision. Many areas in these pods contain valuable objects and artifacts on open shelving.

SD807 Ex. 2



Collections officials we spoke with acknowledged the importance of proper monitoring of individuals in collections areas, but they believe it is unreasonable to require the same degree of oversight over all types of non-staff visitors.

Collections managers stated that they do screen and consider the credentials of each visitor when granting access to the collections. However, they indicated that in the museum and research fields, it is a matter of professional courtesy to leave known colleagues from other institutions unsupervised. The managers did state that severe staff shortages prevented them from providing the degree of oversight they would like. They indicated that despite steady growth in the number of collections objects – which has increased by over one-half million since FY 2003 – the number of NMNH collections staff has decreased by about 4 percent from FY 2003 to FY 2006.

RECOMMENDATIONS

To strengthen physical controls over access to the collections storage areas and oversight of individuals working in the collections areas, we recommended that the Director, OPS:

1. Prioritize the repair, replacement, and upgrading of security devices identified in the 2005 Assessment Report that are related to direct or indirect access to the collections storage areas, and prepare a comprehensive budget and establish an appropriate timeframe for correcting the cited weaknesses.
2. Conduct a security assessment at MSC similar to the one done in 2005 at the NMNH Mall building and develop a plan to correct significant deficiencies.
3. Re-emphasize OPS requirements for security officer responses to alarms and consider expanding the supervisory pool of security officers that would be allowed to enter the NMNH collections areas to provide needed coverage.

We also recommended that the Director, NMNH:

4. Require each department collections manager to implement strict controls over the inventory and use of keys to collections storage cabinets, and develop a detailed budget and plan for replacing old cabinets without locking mechanisms with storage cabinets having locks for all collections with any significant commercial, scientific or historical value.
5. Establish requirements for closer supervision of non-collections staff, visitors, and other individuals allowed access to the collections, and consider screening less-known or new visitors as they leave higher-value collections areas.
6. Provide a list of specific high-value collections storage areas to OFEO to be used by OFEO to notify NMNH collections officials when outside contractor personnel will be working in these areas.

Inventory Control Measures Are Not in Place or Are Inadequate

An inventory, which SD 600 defines as an itemized listing of collections items, groups, or lots that identifies the current physical location of each item, group, or lot, is a fundamental and critical component of good collections care. As stated in *Concern at the Core*, "Knowing what you have and where it is . . . is essential to deterring and detecting theft and providing access."

SD 600 requires each collecting unit to establish and implement a written cyclical inventory plan. SD 600 also refers to an "Implementation Manual" that is meant to provide technical guidance and information to assist collecting units in implementing the Directive. However, the Manual, which is being developed by the Director of the Smithsonian's National Collections Program, was still in draft form at the time of our audit, and therefore was not available for use by the collecting units. The Smithsonian's

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National Collections Program Director is responsible for reviewing and approving museum collections plans.

NMNH does not maintain accurate inventory records of all its collections objects, which makes it difficult to account for, identify, and locate a specimen or object for research or exhibit. Also, museum staffs have not performed cyclical inventory reviews as required by their own department inventory policies, inventory records have not been updated to reclassify species name changes or to identify locations where objects have been moved, and inventory records are not in one complete format. Finally, our testing of the inventory showed a number of missing or misplaced objects.

Inventory Plans are Incomplete or Not Followed

NMNH does not have a formal, museum-wide Inventory Plan as required by SD 600.⁴ Further, we found that only two departments had their own inventory plans, but those plans were outdated, lacked specific timeframes for cyclical inventories, and were not followed. To cite just a few examples, the Anthropology Department's plan, which was created in conjunction with its move from the Mall building to MSC during 1991-1995, has not been updated since that time. Although an inventory is being conducted of the MSC safe, which contains SD807 Ex. 2, the plan also requires inventories of other collections on a "continuous basis," but does not define continuous basis. The division of Physical Anthropology does conduct a minimal form of cyclical inventory each time objects are moved to other cabinets, maintaining all previous locations in its database, and thereby making it easier to locate an object. Paleobiology also has an inventory plan requiring an annual inventory of all collections with a commercial value of over \$5,000. However, the plan, developed as a result of a 1992 OIG audit recommendation, has not been updated since 1993, and the last inventory was conducted in 2000.

Without a museum-wide Collections and Inventory Plan, the departments lack central guidance for prioritizing and conducting cyclical inventories. They also may not know if any collections objects are missing. Yet the method to conduct cyclical inventories has been in place at the Institution since the late 1990s. The Institution's statistician, who has an office in the NMNH Mall building, developed a program to use for sample inventory reviews that was made available to all departments. Only Paleobiology used this program, and that was for a one-time inventory in 2000.

One way to ensure that more attention and resources are devoted to this area is to make individuals accountable. For FY 2006, as suggested by *Concern at the Core*, the NMNH Director's performance evaluation has a requirement to develop a cyclical inventory plan, which puts this responsibility at the highest level. We believe this responsibility should extend further in the organization and that the performance standards for department chairs should also incorporate specific inventory goals.

⁴ We note that at the time of our audit, NMNH's Collections Management Policy, which requires cyclical inventory plans, was still in draft and had been submitted to the Office of General Counsel for approval.

Records Are Incomplete or Inaccurate

NMNH does not have a complete or accurate count for all inventory records and objects. The museum maintains a combination of electronic and paper-based records that in some instances are incomplete and inaccurate and in others are duplicative. For example, museum officials told us they had converted approximately 5.8 million records (or 12 percent) of about 50 million records at NMNH into an electronic collections system. But as *Concern at the Core* noted, the number of electronic records may not be accurate because of duplicate records in the database, records remaining in the database even after the objects have been deaccessioned, and objects on long-term loan but still listed in the database.

To further complicate the problems of inaccuracy and duplication, paper records that have not been converted to electronic collections systems are maintained on a combination of ledger books, card files, and other documentation, some of it overlapping. As a result, it has been difficult for museum personnel to identify the correct number of records.

Also, as reported in *Concern at the Core*, NMNH staff was unable to catalogue all objects to the appropriate item or lot level or to reconcile or correct conflicting data. The report stated that NMNH staff estimated that insufficient records and documentation affected 62 million of its objects. As a result, NMNH still had significant catalogue work to be completed. In our opinion, conducting a complete collections inventory and meticulously updating collections records are essential for ensuring the accuracy of the museum's collections records.

Some examples of the inaccurate or incomplete records we found in our inventory review of high-value objects included:

- Entomology did not have any inventory records for a collection of 600 rare butterflies kept in locked cabinets.
- Invertebrate Zoology maintains a valuable Bledsoe seashell collection that numbered over 7,000 objects (4,210 records) and was appraised for almost SD807 Ex. 2 when it was offered to the Institution in 1988. However, a complete inventory has not been done since January 1989, when the collection numbered only about 4,800 objects. An OIG investigation at that time found a lack of security, accountability, and control for this collection, and the missing objects went unresolved. Adding to this accountability problem, the last inventory of Bledsoe seashells identified about 4,400 objects, or about 400 fewer than the complete inventory done in 1989.
- In Paleobiology and Vertebrate Zoology (Birds), 14 objects were reclassified and had either a taxonomic name change or were upgraded from a sub-species to a species, but these changes were not reflected in both the electronic record and in the inventory record location.

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A backlog in accessioning, the formal process of recording a new object into a collection unit, compounds the problem of incomplete records. *Concern at the Core* noted that in FY 2000, NMNH had a processing backlog of over 5 million objects. The accession documents created for this process do not form a complete record and need to be catalogued for security and research purposes before the objects can be formally entered into a collections unit. If objects come into a backlogged department, they are susceptible to loss or theft because they will lack identifiable records and locations and may be left on open shelves and tables or in unlocked cabinet drawers. NMNH collections managers indicated that at the rate they are able to catalogue with current staff and funding, they cannot keep up with new collections, much less make a dent in the retrospective data capture needed.

According to NMNH managers, staffing shortages and budget constraints have been the major reasons NMNH has been unable to update and maintain an accurate and current inventory of its constantly growing collections inventory. Federal funding for NMNH collections staff has declined 59 percent in the last 10 years. In FY 2003, NMNH had 158 full-time equivalent employees to oversee 125.9 million objects and specimens. As of the end of FY 2005, the collections inventory had increased by over one-half million objects, yet the collections staff has decreased to 152 full-time equivalent employees. Although NMNH has three times the collections staff of any other Smithsonian museum, it also has 20 times the number of collection items of the next largest Smithsonian museum. The NMNH collections continue to grow, which will only make it more difficult for NMNH staff to correct inventory weaknesses.

Because of the extensive resources needed to review these millions of records, we believe a more practical task would be to prioritize collections with significant commercial, scientific, or historical value and then accurately count and maintain electronic records of those objects.

A Sample Inventory Review Showed Missing or Misplaced Objects

To test the accuracy of the inventory records, we sampled inventory in six NMNH departments. Our results, summarized in Appendix B, show that of 2,320 objects (1,807 records) in 15 inventory samples from the six departments, there were initially 53 objects that were either missing or could not be readily located. Of these 53 objects, 40 were from four inventories sampled in Gems and Minerals. By the close of our audit, 35 of the 40 were located. From the Botany sample review, we originally identified 10 objects that could not be found; the collections manager eventually located 5. We performed a 100 percent review of the Martian meteorite inventory, and NMNH collections officials have not been able to locate 3 of those 112 objects.

At the close of our audit, one of the statistical samples we reviewed still had objects that could not be located. Based on our Gem sample, which had 2 objects that could not be located from the 192 objects inventoried, we estimated that slightly more than 1 percent of the gems were either misplaced or missing. We also found there was a lack of documentation for some objects in our mineral sample. We observed four instances where the collections staff had listed an object as being exchanged with an outside entity, but they could not document what item(s) had been received in exchange.

RECOMMENDATIONS

To strengthen inventory controls and identify and locate its most valuable collection objects, we recommend that the Director, NMNH, follow the suggestions of *Concern at the Core*, and:

7. Work with the National Collections Program Director to finalize the museum's Collections Management Policy and Inventory Plan and the SD 600 Implementation Manual.
8. Direct the Department of Mineral Sciences to conduct a complete inventory and update the inventory records for all valuable gems and minerals and develop a follow-up plan to locate all missing objects.
9. Require that the performance plans of department chairs contain specific inventory goals, including developing and implementing cyclical inventory plans, as a measure of job performance for appraisal purposes.
10. Direct the Registrar to work with department chairs to develop a priority list of NMNH's most valuable objects and type specimens and, with the assistance of the Institution's statistician, determine the appropriate percentage or number of those objects to review for each cyclical inventory.
11. Instruct the Associate Director and Registrar for Collections, and the Assistant Director for Information Technology, to develop and implement a plan, initially for all high-value objects and type specimens, to update and convert all electronic and paper records so they are consistent in documenting the status of the collections inventory.

MANAGEMENT RESPONSE

The Directors of NMNH and OPS provided formal written comments to our August 23, 2006 draft report. The Directors generally concurred with our findings and recommendations, except for recommendation number six, and identified actions planned for each recommendation, as well as target dates for their completion. A brief summary of management's response follows.

Regarding recommendations 1 through 3, OPS has requested funding in the FY 2009 capital program to bring all collections storage areas in the Mall building up to OPS Technical Security Standards. If the requested funding is appropriated, improvements should be completed by January 2010. In the interim, OPS agreed to repair the [REDACTED] and SD807 Ex. 2 [REDACTED] card readers and the doors near SD807 Ex. 2 [REDACTED]. Similar security upgrades are planned for MSC in the FY 2010 capital program.

On the issue of security officer responses to alarms, OPS reiterated its policy to respond to all alarms in a timely manner at every SI facility. By October 2006, OPS will implement a number of actions, including the establishment of a new dedicated post named Collateral Duty/Alarm Response Officers, a weekly review of alarm activity reports with appropriate

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follow-up actions, and training for staff causing repeated alarm activations on proper access procedures. The full text of OPS' comments is attached as Appendix D.

Recommendations 4 through 11, which were addressed to the Director, NMNH, covered the physical safeguards over the collections areas as well as inventory procedures and recordkeeping. NMNH agreed to issue a policy to strengthen controls over the use of keys to collections storage cabinets and, by January 2007, to develop a priority listing and detailed budget for acquiring storage cabinets with locking mechanisms for all collections with significant commercial, scientific, or historical value. NMNH also will review its visitor and collections procedures and issue updated policy guidance by March 2007. NMNH disagreed with recommendation six because it believed it would not be prudent to identify specific high-value areas of the collections to non-staff. Instead, it proposed to provide OFEO with a list of department chairs and collections managers and their office phone numbers mapped to the areas of the buildings so that they will be contacted when any outside contractor personnel need to work in those areas.

NMNH also agreed to finalize the museum's Collection Management Policy by January 2007 and complete an inventory of the highest-value gems and minerals by June 2007. NMNH also will include inventory goals in the performance plans for department chairs for the evaluation cycle beginning in January 2007. While NMNH acknowledged that additional high-value objects still need to be inventoried and agreed to develop priority lists and determine appropriate percentages or counts for required cyclical inventories by the fourth quarter of FY 2007, it noted that it did not have the resources to do the inventories. Further, while NMNH agreed to develop an implementation plan to update and convert all electronic and paper records to consistent supportable collections inventory records, the Director indicated that at the current level of resources it would be a multi-year effort and did not provide an end date. The full text of NMNH's comments is attached as Appendix E.

OFFICE OF THE INSPECTOR GENERAL COMMENTS

Management's proposed actions are generally responsive to our recommendations and we consider the recommendations resolved. We note, however, that several recommendations are not scheduled to be completed until January 2010 or beyond, and are heavily dependent on the availability of additional resources. Given the sensitive nature of the weaknesses we identified and their effect on the security and accountability of the collections, we expect that management will make every effort to either acquire or reallocate resources necessary to ensure full implementation of the corrective actions as soon as is practicable.

Appendix A. Scope and Methodology.

The objective of this audit was to determine if NMNH's physical security was adequate to safeguard the collections and collection inventory controls were in place and adequately working to ensure the collections are properly accounted for in compliance with collections management policies and procedures.

Physical Security

To assess physical security at NMNH, we toured the collections storage areas of all NMNH's departments to inspect and test security devices. We also toured two additional storage facilities in Maryland, the Museum Support Center (MSC) in Suitland and the Human Studies Film Archives storage building in Columbia. We went through alarmed entrances to determine the response of security officers and viewed the guard monitors in the security control room in the mall building. We reviewed the 2005 OPS Security Assessment Report to identify all devices needing replacement or repair and discussed with OPS officials plans for correcting these devices as well as how they allocate security officers.

We met with collections management officials in each department to discuss their concerns with physical security, communications with security officers, and policies and procedures regarding access to collections for outsiders such as educators, researchers, students and others who may have an interest in a particular collection or contractors working in the collections storage areas. We also held discussions with curators and collections managers and reviewed the departments' controls over the assignment and use of cabinet keys.

To gain information on how other museums approach the physical security of their collections, we toured the American Museum of Natural History in New York City and obtained their policies, procedures, and other data. We obtained similar information from the Cleveland Museum of Natural History, as well as several publications, guidelines, and reports from national museum associations and committees.

Inventory Controls

To evaluate inventory controls over collections at NMNH, we examined both paper and electronic inventory records for a sample of collections from the seven departments. We traced the record for each sample selection back to its location in the storage or exhibit area. With input from the Chief of Collections (Registrar), and the collections managers from each department, we selected our samples from those collections considered most valuable from a commercial, historical, or scientific perspective. Samples were designed on a statistical, judgmental, or 100 percent basis, depending on the collection size, its storage location, and other factors such as the extent of data in the records. We identified the samples from the records or documents, not from individual collection objects, because NMNH's inventory records often included more than one object or specimen. We also held discussions with the Institution's statistician on prior tests of collections and guidance on sampling methodologies for this audit. In summary:

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- We selected judgmental samples from the Paleobiology Department (specimens valued at over \$5,000 with some in unlocked cabinets or on open shelves); the Invertebrate Zoology Department (Bledsoe seashells, which were reported in past OIG audits); the Vertebrate Zoology Department (Hawaiian Honeycreeper birds, which collections officials identified as having the most complete records); and the Physical Anthropology (human skulls) and Botany Departments (Herbarium Solanaceae), which were both located in SD807 Ex. 2 and were near SD807 Ex. 2 and SD807 Ex. 2. We also judgmentally selected an initial Gems sample from the Mineral Sciences Department to learn more about the population before designing statistical samples.
- We took random statistical samples from the Paleobiology Department (Amber and Burgess Shale collections), Gems (located in SD807 Ex. 2), Minerals (located in SD807 Ex. 2), and Anthropology (Indian ledger art at MSC). The samples were selected from an electronic inventory database using random generators and were designed to reflect a 95-percent confidence level, a 1.99 percent error rate (from past audit experience of OIG inventory audits), and a 1.90 percent precision rate.
- We performed tests of 100 percent of the specimens in the Martian meteorites inventory SD807 Ex. 2 and Mineral collection purchases valued at over \$10,000 for FYs 2003 and 2004 at the Mall building, and the Anthropology vault at MSC that contains SD807 Ex. 2.
- For the Entomology Department, we chose a valued butterfly collection that was kept in locked cabinets, but because there were no detailed inventory records, we were unable to evaluate this collection against the department's records.

Appendix B shows details of the sample inventories selected and the results from our tests.

We conducted our audit between July 2005 and August 2006 in accordance with *Government Auditing Standards*, as prescribed by the Comptroller General of the United States, and included tests of management controls as we considered necessary.

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Appendix B.

OIG Sample Inventory - NMNH							
<u>Department</u>	<u>Total Est.- Population/Items</u>	<u>Sample Selection Specimen Type/ Object Group</u>	<u>Size of Collection Group (Records)</u>	<u>Sampling Method (a)</u>	<u>Sample Size (b)</u>		<u>Missing/ Misplaced</u>
					<u>No. objects</u>	<u>No. records</u>	
Paleobiology	42,670,000	Burgess shale	3,026	statistical	171	171	0
		Amber collection	5,070	statistical	361	175	0
		Objects over \$5,000	415	judgment	83	83	0
Anthropology	2,250,000	██████████ Gold artifacts	217	100 percent	217	217	0
		Archives Native American art	2,279	statistical	110	110	0
		Physical Anthropology - Selected skulls	1,257	judgment	90	90	0
Mineral Sciences	340,000	Gems ██████████ (13,929 items) SD807 Ex. 2	7,874	statistical	192	177	2
		Minerals ██████████ (9,878 items) SD807 Ex. 2	8,136	judgment	262	176	1
		Minerals		statistical	215	177	0
		Mineral purchases ≥ \$10K - FY 2003/04	253	100 percent	253	129	2
		Martian Meteorites	112	100 percent	112	112	3
Vertebrates	9,560,000	Hawaiian Honey Creepers- (Birds)	782	judgment	32	31	0
Invertebrate Zoology	34,320,000	Seashells -Bledsoe Collection at NHB	2,289	judgment	45	30	0
		-Bledsoe shells at MSC		judgment	78	30	0
Entomology	32,520,000	Butterflies	600	n/a		0	n/a
Botany	4,790,000	Herbarium Solanaceae	608	judgment	99	99	5
Totals	<u>126,450,000</u>		<u>32,918</u>		<u>2,320</u>	<u>1,807</u>	<u>13</u>

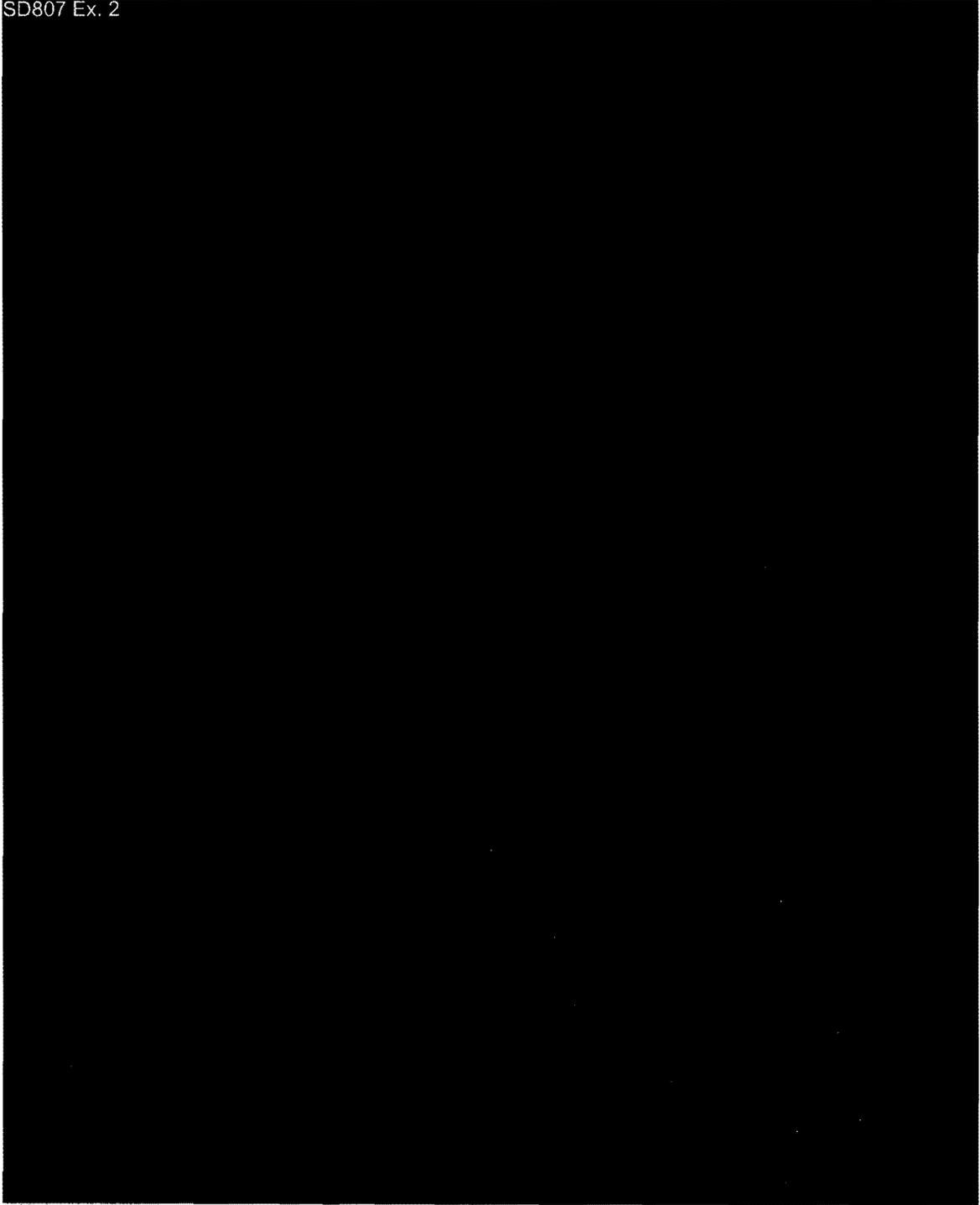
(a) The statistical samples were based on random sampling criteria that had a 95 percent confidence level, 1.99 percent error rate, +/- 1.90 percent variance.

(b) All samples were selected from inventory or catalog record numbers. However, some records had more than one object.

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Appendix C. Collections Area Showing Security Device Problems

SD807 Ex. 2



Appendix D. Management Comments, Office of Protection Services



Smithsonian Institution

Memo

Office of Protection Services

Date September 18, 2006
To A. Sprightly Ryan, Acting Inspector General
cc William W. Brubaker, Director, Offices of Facilities Engineering and Operations
William Tompkins, National Collections Coordinator
Cristian Samper K., Director, National Museum of Natural History
From James J. McLaughlin, Director, Office of Protection Services 
Subject Response to Inspector General Draft Audit Report on Physical Security and Inventory Control Measures to Safeguard the National Collections

This response is submitted on behalf of the Office of Protection Services (OPS). OPS has agreed with National Museum of Natural History (NMNH) to provide a separate response.

In general, we accept the findings and recommendations of the entire audit. We have some clarifications of some points that will be detailed in our responses to recommendations 1 – 3. Per our agreement, NMNH will respond to the remaining recommendations.

Response to Recommendations:

1. Prioritize the repair, replacement, or upgrading of security devices identified in the 2005 Assessment Report that are related to direct or indirect access to the collections storage areas, and prepare a comprehensive budget and establish an appropriate timeframe for correcting the cited weaknesses.

Agree with clarification: Current OPS management have been aware of deficiencies in both collection storage and building electronic security since 1998 when the US Army Corps of Engineers was hired to assist in the development of electronic security standards and perform surveys of most major SI facilities. At that time OPS had general estimates to bring our facilities up to the new standards. OPS' top priority in 1998 was replacement of the former Smithsonian Institution Proprietary Security System (SIPSS).

SIPSS was the main head-end monitoring security system in each major SI facility and was facing imminent failure. The first phase of OPS' Security System Modernization Program (SSMP) was the replacement of SIPSS. The second phase was to bring all SI facilities current with the newly developed Technical Security Standards.

It took approximately 4.5 years to accomplish Phase I of the SSMP. Since then OPS has been attempting, as resources permitted (primarily through the SI Facilities Capital Program), to complete Phase II throughout the entire SI. In implementing Phase II, OPS

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Appendix D. Management Comments, Office of Protection Services (continued)

has had to prioritize elements of the Technical Security Standards into achievable projects. Considering the large number of projects, OPS feels that we have appropriately prioritized the NMNH collection storage projects.

Some projects were deferred to general facility renovation projects and other security projects were delayed through prioritization decisions of OFEO, the SI Capital Board, OPMB, OMB and/or Congress. However, since 1998 OPS has had adequate information, updated regularly, for planning of security projects. More detailed project costs are not usually developed until design has begun.

OPS and other OFEO offices have several projects and initiatives already started to address the deficiencies identified by the IG:

SD807 Ex. 2 card readers: These **SD807 Ex. 2** are not generally accessible to the public. OPS does plan to reinstate the security system program that locked them upon an unauthorized access by staff or the public. This will require a new technical solution and the agreement of OSHEM to accomplish.

Target Date: 1 January 2007

SD807 Ex. 2 Doors Repair: As the IG staff correctly indicated, there have been several unsuccessful attempts (by OFEO and NMNH) to secure the public/staff doors near the **SD807 Ex. 2**. Currently there is a design underway to solve the many architectural issues associated with securing the doors. The design is currently at the 95% stage and construction should be awarded in January of 2007. Construction should last approximately one year.

Target Date: 1 January 2008

Upgrade NMNH Collection Storage: There is funding requested in the FY09 Capital Program for this project which is planned to bring all collections storage areas (and some other areas) up to the OPS Technical Security Standards. This project has been deferred several times in the SI budget development process. OPS has identified this project as a priority for several budget cycles and hopes it will be funded in FY09. The project is currently in design and should be completed by September 2007. The earliest date that a construction contract could be awarded would be October 2008. The construction is anticipated to last approximately 1 – 1.5 years.

Target Date: January 2010

2. **Conduct a security assessment at MSC similar to the one done in 2005 at the NMNH Mall building and develop a plan to correct significant deficiencies.**

Agree with clarification: The assessment performed at NMNH was done in anticipation of the design process for the collection storage upgrade project. In the case of MSC, a design has already been accomplished and a budget established. A full design for the building was accomplished as part of the Phase I SIPSS replacement effort in hopes of awarding a complete upgrade at this much smaller facility. However, that was not

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Appendix D. Management Comments, Office of Protection Services (continued)

possible and the project has been deferred initially by OPS (until SIPPS was replaced) and also through the SI budget development process. Currently, complete Phase II upgrades are planned for the FY10 Capital Program.

Target Date: January 2011.

The SD807 Ex. 2 at MSC have been repaired and are secured adequately..

3. **Re-emphasize OPS requirements for security officer responses to alarms and consider expanding the supervisory pool of security officers that would be allowed to enter the NMNH collections areas to provide needed coverage.**

Agree with clarification: By way of clarification, an OPS supervisor is only required to respond to high security collection storage at NMNH such as SD807 Ex. 2 and the SD807 Ex. 2. All other collection storage can be accessed by security officers. OPS has not experienced any issues in alarm response for these two areas.

By far, the majority of the alarms that were identified by the IG staff are considered "nuisance alarms" within the security industry. These are valid alarms (not false), but are caused by situations that are not, generally, breaches of security. In this case, the locations identified by the IG staff have many "nuisance alarms" that are caused by issues such as staff not presenting their access card to enter a door, staff holding a door open too long, or similar occurrences. The problem with nuisance alarms is that they can cause complacency in a security force that has responded to the same alarm over and over and found no real breach in security. If a security force is understaffed, as identified by the IG staff, this problem can cause these nuisance alarms to have a lower priority in the responsibilities of security staff. This is what occurred at NMNH. An understaffed security force must prioritize their duties and response to what is "likely" a real security incident. Although, based on OPS investigations all alarms received a response, it has taken a considerable amount of time to respond to certain alarms in NMNH.

This is offered as an explanation for the findings, not an excuse. It is OPS policy to respond to every alarm in a timely manner and it is our intent to do so at every SI facility. The following actions will be undertaken by OPS, at all facilities, to ensure adequate response and to minimize nuisance alarms:

- Each week the Control Room Operations Security Manager will run and review Alarm Activity Reports. The report will identify response times, nuisance alarms, and alarm technical problem locations.
- The Facility Security Manager will discuss findings of the weekly alarm activity report with the Control Room Operations Security Manager and will then discuss the results with Unit Security Supervisors.
- Repeated activations discovered to be the result of staff failing to follow access procedures will be identified and communicated to the staff having difficulty.
- Staff causing the repeated alarm activations will be notified in writing thru e-mail and offered training of the proper access process they should use when entering and exiting their space. The next offense will be reported to the Department Chair. The next offense will be reported to the Museum Director. Each step will be documented.

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Appendix D. Management Comments, Office of Protection Services (continued)

- The NMNH Security Unit will establish a new dedicated post named Collateral Duty/Alarm Response Officers. New Post Orders will be written to reflect the assignment. Although the posts are intended to have other duties such as a gallery post, the posts' first priority will be alarm response. Based on the number of alarms currently received daily at NMNH, it is likely that the post will have to be dedicated to alarm response until nuisance alarms are minimized.
- The Collateral/Alarm Response Officer(s) will document each alarm response daily, the results, time informed of the alarm, and time the Control Room was contacted to reset the alarm.
- A blotter entry will be entered for each alarm from the form the officer uses to record the alarm activation.
- Security Management will conduct periodic inspections of Collection Areas recording the result in the blotter.

Target Date: 1 October 2006

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Appendix E. Management Comments, Director, National Museum of Natural History



Smithsonian
National Museum of Natural History

Office of the Director

Memorandum

Date: September 27, 2006

To: A. Sprightly Ryan, Acting Inspector General

Cc: William Brubaker, Director, Office of Facilities Engineering & Operations
William Tompkins, National Collections Coordinator
James J. McLaughlin, Director, Office of Protection Services

From: Cristián Samper K., Director, National Museum of Natural History *CSamperK.*

Subject: Response to August 23, 2006 Draft Audit Report on Physical Security and Inventory Control Measures to Safeguard the National Collections

NMNH appreciates the opportunity to respond to the Audit Report on Physical Security and Inventory Control Measures to Safeguard the National Collections. In general, we agree with the overall findings. It had been some time since the last collections-related audit, and it can be helpful to have external perspective on policies and practices. The report's recognition of the effects of resource constraints is very important, as is the interplay between security findings, under the jurisdiction of the Office of Protection Services, and physical control and inventory, under NMNH's control. We are hopeful that the recommendations will support our requests for additional resources, as we focus those limited resources we do have on making necessary changes and developing plans for resources as they are forthcoming.

Response to Recommendations

Note: Recommendations 1-3 are focused on physical controls under the oversight of OPS. NMNH regards these recommendations as appropriate, and anticipates that resulting actions will yield valuable improvements to collections security. NMNH will rely on the Director, OPS, to act upon these recommendations.

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Appendix E. Management Comments, Director, National Museum of Natural History (continued)

4. **Require each department collections manager to implement strict controls over the inventory and use of keys to collection storage cabinets, and develop a detailed budget and plan for replacing old cabinets without locking mechanisms with storage cabinets having locks for all collections with any significant commercial, scientific or historical value.**

4-A. Control over inventory and use of keys to collections storage cabinets

NMNH agrees that these controls need improvement and consistency across the museum. The museum will review its management of collections storage unit keys and will develop an NMNH-wide policy which will be issued June, 2007. Implementation of this policy will be included in appropriate performance plans of collections managers and Department Chairs.

- 4-B. Develop a detailed budget and plan for replacing old cabinets without locking mechanisms with storage cabinets having locks for all collections with any significant commercial, scientific or historical value.**

NMNH agrees that collections with significant value should be in locked cabinetry. In 2006 NMNH developed a museum-wide case replacement plan. NMNH will use this data to develop a priority listing and associated detailed budget by January 1, 2007. This plan and the detailed budget will be used as the basis for proposals to the Smithsonian Care and Preservation Fund and future federal budget requests.

5. **Establish requirements for closer supervision of non-collection staff, visitors, and other individuals allowed access to the collections. Consider screening less-known or new visitors as they leave higher-value collections areas.**

NMNH agrees with the spirit of this recommendation; however, the staff needed to fulfill generalized closer supervision cannot be accomplished with existing resources while still fulfilling accessibility expectations. Non-staff collections visitors are already screened and in some units those visitors are supervised when using the collections. We feel the museum's general approach to visitor monitoring is consistent with other organizations that hold scientific collections, and is appropriate for the majority of the collections. To ensure that appropriate practices are being followed per the nature of the specific groups of the collections, NMNH will review its visitor and collections procedures, examine those in place at comparable museums, and will issue updated policy guidance by March, 2007.

Appendix E. Management Comments, Director, National Museum of Natural History (continued)

6. **Provide a list of specific high-value collections storage areas to OFEO to be used by OFEO to notify NMNH collections officials when outside contractor personnel will be working in these areas.**

NMNH disagrees with this recommendation because it could identify specific high value areas of the collections to non-staff. Instead, we suggest that a list of the Department Chairs and Collections Managers and their office phone numbers mapped to the areas of the building be provided to OFEO so that they will be contacted when any outside contractor personnel need to work in those areas. This list and associated map will be provided in electronic form by October 31, 2006.

7. **Work with the National Collections Program Director to finalize the museum's Collections Management Policy and Inventory Plan and the SD 600 Implementation Manual.**

NMNH agrees with this recommendation. The draft policy is with the National Collections Program and the Office of the General Counsel for final review. NMNH will work with these offices to finalize the policy by January 1, 2007. In addition, NMNH will support the National Collections Program who has the responsibility to complete the SD 600 Implementation manual.

NMNH will forward a museum-level Inventory Plan for the National Collections Program Coordinator's and Under Secretary for Science's review by December 31, 2006.

8. **Direct the Department of Mineral Sciences to conduct a complete inventory and update the inventory records for all valuable gems and minerals and develop a follow-up plan to locate all missing objects.**

NMNH agrees with this recommendation, and emphasizes that our ability to implement the recommendation is contingent upon receiving funding for additional staff. A complete inventory of all the Department of Mineral Sciences' holdings would be a goal should the ideal resources be available for this undertaking. Several more staff would be needed to conduct a complete inventory within a reasonable time frame. As an infusion of new staff is unlikely, NMNH suggests that the most useful inventories, for risk management purposes, are the following, to be completed according to this schedule unless additional staff support becomes available. While volunteers may be helpful in other areas of museum work, NMNH believes it is unwise to have volunteers assist with inventories of high value collections.

Appendix E. Management Comments, Director, National Museum of Natural History (continued)

- Vault contents will be finished by December, 2006
- DeSautels Room will be finished by June, 2007
- With 10 additional staff working full time, a complete inventory of the Minerals Reference Collection will be finished by March, 2008; otherwise, this inventory cannot be accomplished in a reasonable time frame.
- With three additional staff working full time, a complete inventory of the Meteorites Collection will be finished by December, 2007; otherwise, this inventory cannot be accomplished in a reasonable time frame.

After each of these inventories, a reconciliation plan will be developed by the Department and the Registrar for the Associate Director for Research and Collections' review. Records will be updated within six months of the completion of each inventory.

This schedule depends upon the receipt of the additional staff resources as outlined above, starting in the beginning of FY 2007. NMNH will be pursuing additional funding opportunities for these positions such as year-end funding.

9. **Require that the performance plans of Department Chairs contain specific inventory goals, including developing and implementing cyclical inventory plans, as a measure of job performance for appraisal purposes.**

NMNH agrees with this recommendation, and will include inventory goals in the performance plans for the evaluation cycle beginning in January, 2007.

10. **Direct the Registrar to work with department chairpersons to develop a priority list of NMNH's most valuable objects and type specimens and, with the assistance of the Institution's statistician, determine the appropriate percentage or number of those objects to review for each cyclical inventory.**

NMNH agrees with this recommendation, and will develop a priority lists and determine appropriate percentages or counts for its cyclical inventories by the 4th quarter of FY 2007.

11. **Instruct the Associate Director (for Research and Collections) and the Registrar, and the Assistant Director for Information Technology, to develop and implement a plan, initially for all high-value objects and types specimens, to update and convert all electronic and paper records so they are consistent in documenting the status for the collections inventory.**

Appendix E. Management Comments, Director, National Museum of Natural History (continued)

NMNH agrees with this recommendation. Implementation is highly dependent upon staff resources, and will require fact finding to determine the state of various records in each collections unit. Current estimates indicate that an additional seven FTEs will be needed to complete this, and that estimate will be updated in the implementation plan. The museum's collections information system is the Electronic Museum (EMu), which will include a transaction management functionality that is currently under development. As electronic and paper records are entered into EMu, the primary record for the item is established. As a first step to address this recommendation, NMNH will review the records in EMu and will identify the high-value items that are not yet recorded in EMu by June, 2007. NMNH will then proceed with an implementation plan that will include target dates and an estimated completion date. At the current level of resources we estimate this to be a multi-year effort.