

**AZA Accreditation Commission
Special Inspection – Tiger incident
San Francisco Zoo**

Inspection Dates: January 27 & 28, 2008

Inspection Team: Dennis E. Pate, chair
Stacey Johnson
Dr. Jeff Wyatt

The Scope of the Special Inspection

This inspection was initiated by the accreditation commission as a result of the tiger escape on the early evening of December 25, 2007 resulting in visitor injuries and a fatality. A near escape of a snow leopard occurred 15 days later. The scope of the inspection was limited to a review of both incidents, emergency preparedness and response, large cat management, and a facility review of the Lion House and Feline Conservation Center.

Zoo Staff/Board interviews:

Nick Podell, Chair of the Board of Directors
Louise Renne, General Counsel for the San Francisco Zoological Society
Manuel Mollinedo –Executive Director & President
Bob Jenkins – Director of Animal Care and Conservation
Jesse Vargas – Director of Operations
Ingrid Russell-White – Curator of Mammals
Deb Howe – Security Supervisor
Dr. Freeland Dunker- Senior Veterinarian
Anthony Brown- Animal Keeper, Shooting Team member
Amy Hansen – Lion House keeper

City of San Francisco Interview

Yomi Agunbiade, Director of Parks and Recreation
Carl Feinberg, Director of Animal Control

Interview requested but unavailable

Alan Feinberg- Lion House Lead Keeper; unavailable, day off.
Marie Santa-Iglesia (Trooper) - Security guard; unavailable, out ill.
Deb Cano – Lion House keeper; unavailable, on Worker’s comp since the incident

David Sowder –Security; not available, resigned Christmas Day
Ray Lim- Manager of Terrace Café; not available, traveling in Canada
Galo Paz-ice rink attendant; not available, back in school, works weekends

Documents provided by the zoo and reviewed by the team:

Tiger Incident Chronological Timeline (provided by Jesse Vargas)
Employees working 12/25/2007
Keeper reports pertaining to Tatiana from Denver and SFZoo
Daily Section reports for the Lion House 1/16/2007 thru 12/27/2008
Diets for the large cats in the Lion House
Zoo map and aerial photographs of the site
Architectural drawings of barrier enhancement -7 pages
Senior Management Organizational chart
Animal Care and Conservation Organizational Chart
List of qualified shooters
Personnel changes 1/28/2008
SFZoo emergency procedures, animal escape drills and dates
Municipal code re: public exclusion from the park in an emergency
Zoo Policy changes since 12/25/2007
Animal inventory of the Lion House as of 12/24/2007
Lion House Procedures Manual
Keeper schedules “Carnivore/Marsupial Weekly Schedule” 12/1/2007 – 12/28/2007
2006 and 2007 USDA inspection reports
Photos (2) of large cat barrier before the incident.
Schematic drawing of the interior of the Lion House (photo of)
Tiger Tatiana medical records and necropsy photos
Monthly Security Checklist for the FCC and Lion House –Jan 2008
Staff Training changes –Jan 2008
Moat wall measurements in Grotto C
Top of moat wall inward curve measurement in grotto C
Website video address of female tiger Tatiana in exhibit.
San Francisco Zoo visitor Guides
Moat floor concrete addition (email)
Nixon-Peabody Attorneys public records list of records provided to the inspection team dated January 17, 2008
AZA accreditation application from 2004; commission findings, and follow up report
SFZoo incident report dated 1/10/2008 re; snow leopard breach of wire barrier

The Tiger Escape

Incident timeline details as narrated by Jesse Vargas (Operations Director), Deb Howe (Operations Manager & Security Supervisor), Anthony Brown (Penguin Keeper) and Dr. Freeland Dunker (Zoo Veterinarian). This review demonstrates the exceptional response

by San Francisco Zoo staff.

1707 **Security (David Sowder)** is called by telephone by **SSA Food Service Manager Ray Lim at the Terrace Cafe** because two young men (one with blood on head) are asking for medical attention. Terrace Café manager refuses to admit the two young men into the café because of their erratic behavior and presumption of fighting.

Sowder first calls **Security Supervisor (Deb Howe)** over the radio to the scene for first aid evaluation.

Sowder next calls “911” by telephone at the front gate for first aid.

Seasonal zoo employee-ice rink attendant (Galo Paz) overhears the radio call regarding the need for first aid and proceeds across the zoo towards the Terrace Café (without being asked) as a first aid responder.

1708 **Howe** amends the 911 call after her arrival at Terrace Café and interacting with injured guests indicating that police as well as EMS is needed. She believes there has been a fight and that the guests (one taller, younger with a bleeding head injury standing but not speaking and one uninjured shorter, older and very belligerent demanding first aid for his brother) are behaving erratically, possibly intoxicated. **Howe** calls **Security Guard (Marie Santa-Iglesia, “Trooper”)** on the radio to meet EMS and Police at the South Gate (the closest gate for first aid and police response). This gate is not open to visitors.

The two men report at the end of their conversation that there is a third injured person and that a lion is out. **Howe** drives her golf cart from the Terrace Café towards the black rhinoceros exhibit to look for the third person. Deb does not believe that a big cat is out because of the erratic and belligerent behavior of the two guests. She tells the two men to stay put while she investigates the whereabouts of the third injured person and that help is on the way. Both men remain outside the Terrace Café.

1709 **Howe** calls **Senior Keeper (Alan Feinberg)** who is still on zoo grounds to ask if all is normal at Lion House. **Feinberg** responds that he will go look, and reports that he is on the way to Lion House.

Zookeeper (Anthony Brown), the shooting team member on site, is leaving the zoo for the day and over hears the 911 “first aid” call on the zoo radio. He asks Alan if he should stay and is told no, so he departs to check out.

1710 **Trooper** rides her bicycle from the Patas monkey lawn to South Gate to admit “first-aid responding” EMS personnel upon their arrival. From the fire hydrant near rhino, **Howe** sees a tiger from her golf cart outside of the exhibit at Nyala Picnic Area path intersection near the Lion House grottos. She calls over the radio “Code 1 Tiger”. **Zookeeper (Anthony Brown)** reconsiders decision to leave for

the day and drives his car to the bird area to pick up a radio. He hears the Code 1 call and proceeds to the animal Hospital to get the lethal force weapon (12 gauge shotgun). **Zoo Veterinary Technician (Marilyn Small)** has just left for the day but forgets to complete a report and returns to the hospital where she assists Anthony Brown with accessing the shotgun. The veterinary technician then calls the **Zoo Veterinarian (Dr. Dunker)** at home informing him about the Code 1 Tiger. **Dr. Dunker** begins the drive back to the zoo while **Small** prepares tranquilizer darts and provides updates to **Dr. Dunker** in route regarding the incident. **Zookeeper Brown** proceeds to the tiger grotto in his personal vehicle in his street clothes with the shotgun. Two attempts at getting keys to zoo vehicles failed. **Security guard Trooper** arrives at the South Gate area, sees the tiger, drops the bicycle and runs to the South Gate.

1711 **Security Supervisor Howe** tells **Trooper** over the radio to exit the South Gate and lock herself out. **Trooper** responds that she has already done so. **Trooper** observes the tiger standing on top of her bicycle. **EMS (San Francisco Fire Dept)** arrives at the South Gate. They are refused entrance by Security guard **Trooper** due to the presence of the tiger within view (through a narrow corridor) of the South Gate. Approximately 80% of the view is obstructed by large bushes near the south gate.

1712 Security guard **Sowder** relays information to zoo staff to clear the zoo and/or lock guests and employees behind closed doors.

1715 **San Francisco Fire Department EMS** reports over their radio seeing a tiger inside the South Gate. **Zookeeper Brown** while in his car locates a human body on the visitor pathway in front of the tiger grotto. The person appears to be dead due to the nature of neck injury, amount of blood and open eyed gaze but **Brown** calls over radio for medical attention at the grotto because he is unsure if the person is dead or not. **Brown** remains in front of the tiger grotto making note of the presence of the other tiger sitting calmly inside the exhibit and guards the mortally injured visitor from further attack.

San Francisco Police arrive at the South Gate. They are also prevented from entering due to proximity of tiger within view from the South Gate.

Security Supervisor Howe confirms over the radio that **Trooper** still has visual contact with the tiger at the South Gate. **Howe** directs **San Francisco Police** and **Fire Department EMS** to meet her at the main service gate just off Herbst Road, and proceeds to drive her golf cart there via a route that avoids the tiger escape area.

1716 **Zookeeper Brown** is out of his vehicle behind his open car door at the tiger grotto with the shotgun. As he is scanning for the tiger and setting up his defense line he calls his roommate (another zookeeper) on his cell phone, asking him to come to the zoo and assist.

- 1717 **Zookeeper Brown**, by his car in front of the tiger grotto, reports spotting the tiger crossing into the Nyala Picnic Area and then out of sight. **Brown** calls over the radio identifying the location of the tiger.
- 1718 **San Francisco Police** and **Fire Department EMS** meet **Security Supervisor Howe** at the main service gate.
- 1720 Escorted by **Howe**, Police and EMS arrive at the tiger grotto and the deceased body. **San Francisco Police** see **Zookeeper Brown** out of uniform holding a shotgun and ask him what he is doing there. **Senior keeper Feinberg** arrives at the scene and vouches for Zookeeper Brown's presence and role. **Zookeeper Brown** locks his shotgun in his car trunk as requested by the police.
- 1721 **Zookeeper Brown** joins the San Francisco police in their car and guides them towards the Terrace Café about 300 yards away driving on the curving, heavily vegetated pathway flanked by exhibits containing crowned cranes, blackbuck, duiker, black rhino and warthog, with headlights on slowly scanning for the tiger. He tells police that more tigers may be out since the escape route has not been identified. (Note: the zoo holds one male and one female Siberian, one male and one female Sumatran, and one female Sumatran tigers in three exhibits)

By this point, **Seasonal Zoo Employee & Ice Rink attendant (Galo Paz)** arrives at the Terrace Cafe to offer first aid. He proceeds to the back of the café (per Operations Director-Jesse Vargas) to get paper towels from the food service manager. **Paz** approaches one young man who appears uninjured. The injured brother is reportedly hiding in one corner of the outside café seating area. While standing with the un-injured brother, **Paz** sees the tiger approaching the uninjured brother from behind. Both **Paz** and the uninjured brother slowly back away. The tiger approaches both of them and swipes at their legs knocking the uninjured brother down. **Paz** runs away in the opposite direction passing SFPD cars on the way headed toward the Terrace Cafe.

- 1725 The **San Francisco Police** escorted by **Zookeeper Brown** turn the corner in the police car at the rhino exhibit to discover the tiger sitting in front of the entrance to the Terrace Café, facing one injured guest who is sitting alone supported by his arms with legs outstretched in front of him on the sidewalk facing the tiger. The tiger looks at the police car arriving and pounces on the young man pushing him on his back to the ground. Additional **San Francisco police** arrive to the opposite side of the Terrace Café by car from the front gate as the first car of police observes the tiger jumping onto the victim. Radio calls are heard saying "Blue on blue," meaning police in a crossfire. Shots are heard. Fourteen 40-caliber pistol shell casings are recovered in front of the café afterward. As the tiger leaves the victim and approaches the open police car both officers jump back in the car in which

Zookeeper Brown is riding in the back seat.

1727 The tiger falls to the ground next to the open passenger door from which the officer was firing his handgun. **Zookeeper Brown** suggests over the radio that officers shoot the tiger in the head. A police officer behind the police car that Anthony Brown is in shoots the tiger in the head. Police announce over the radio that the tiger is dead. **Zoo veterinarian Dr. Dunker** arrives to the zoo as the tiger is announced to be dead. San Francisco takes control of the zoo as a crime scene. **Zoo veterinarian Dunker** and **Senior Keeper Feinberg** proceed to the Lion Building confirming over the radio that all other big cats (the remaining male Siberian tiger –exhibit mate of the escaped female, three Sumatran tigers and four African lions) were accounted for and locked inside. Police continue to patrol the grounds looking for any additional victims.

Tiger Pathology Report

Necropsy Date: December 26, 2007

Signalment: Four and one half year old, female, 243 pound, Siberian tiger (ISIS # 105047).

History: Acquired by San Francisco Zoo on December 22, 2005. After quarantine, the tiger was introduced and exhibited with an older, male Siberian tiger (Tony) in Grotto C of the Lion Building. Lion House keepers reported that the tiger was playful and was not an abnormally aggressive animal. The tiger had no history of health or behavioral problems at San Francisco Zoo. The tiger was shot and killed by San Francisco police after escaping the zoo exhibit the evening of December 25, 2007.

Prosector: Freeland Dunker DVM (San Francisco Zoo Attending Veterinarian)

Gross Necropsy: The tiger was in excellent body condition except for three bullet wound entry sites and recently frayed, torn nails on all digits of both rear feet and one cracked nail with a broken sheath on one digit of each front foot.

Two bullets entered the thoracic cavity on the left side fracturing the seventh rib and on the right side between the second and third ribs. The two bullets created a tear/avulsion of the cardiac muscle of the left ventricle not penetrating into the heart and a hole through the cranial left lung lobe resulting in one liter of blood free in the thoracic cavity.

A third bullet entered the top of the skull lodging in the frontal sinus not entering the brain cavity. There were no dental abnormalities.

The stomach was full of undigested meat. Stomach contents were frozen and submitted per request to San Francisco police forensics department for drug testing. (No results available from SF police). No abnormalities were found in abdomen.

Histopathology: The histopathologic evaluation by Northwest Zoo Pathology consulting services found no evidence of pre-existing disease and fully supported gunshot wound to the chest as the cause of death.

Cause of Death: Gunshot wounds causing cardiovascular collapse.

Other: The zoo veterinarian commented that the recently frayed, torn nails present on all digits of both rear feet and the recently cracked nails with broken sheaths on one digit of each of the front feet were abnormal and compatible with the tiger clawing her way up an abrasive surface. The claw marks/scratches noted by mammal curator Ingrid Russell-White on the moat wall at the front of the exhibit support the zoo's theory that the tiger jumped up and pulled herself over the front wall of the grotto.

Emergency Response Evaluation

The overall response by the zoo to this major emergency was impressive. There were some exceptions however. The adequacy of emergency responders for the tiger escape incident is summarized below by category of responder.

Zoo Security Staff

Staff involved: Deb Howe (Security Supervisor), Marie Santa-Iglesia (Security guard) and David Sowder, Security guard.

Zoo security responded quickly and effectively staying on-line with 911 and in zoo radio communication throughout the event, properly assessing the safety of opening the perimeter gate in proximity of the escaped tiger and escorting the police and fire department personnel safely and efficiently through the zoo to the scene.

Area for improvement: Security supervisor (Deb Howe) placed herself and security guard Marie Santa-Iglesia at risk when not believing the zoo visitors' statement that a "lion" was out.

Animal Care Staff.

Staff involved: Penguin Keeper & trained shooter (Anthony Brown), Senior Keeper (Alan Feinberg).

Keeper and trained shooter Anthony Brown responded to the scene quickly and safely and with a shotgun prepared to kill the tiger. Anthony Brown communicated concisely and clearly over the radio providing the most rapid and safest response possible by the police

department to the scene. He guarded the downed guest from further possible attack by the tiger at risk to his personal safety. After the tiger was killed, the senior keeper and veterinarian (Dr. Dunker) confirmed that all of the other large cats housed in the Lion House were accounted for and confined to inside holding areas.

Area for improvement: Zookeeper and trained shooter (Anthony Brown) did not have keys to the area of the hospital where the shotgun was stored.

Area for improvement: Zookeeper and trained shooter (Anthony Brown) could not locate keys for two of the zoo's vehicles requiring that he use his personal car to respond with a shotgun to the animal escape scene.

Veterinary Staff:

Staff involved: Veterinary technician (Marilyn Small) and veterinarian (Dr. Freeland Dunker).

The veterinary technician (Marilyn Small) assisted zookeeper (Anthony Brown) accessing the shotgun, called the veterinarian at home to come back to the zoo and began preparing tranquilizer darts while providing updates via phone. The veterinarian quickly responded to the scene from home prepared to dart the escaped tiger. After the tiger was killed, the veterinarian and the senior keeper (Alan Feinberg) confirmed that all of the other large cats housed in the Lion House were accounted for and confined to inside holding areas.

Seasonal or Contract Staff: Unsatisfactory

Staff involved: SSA Food Service Manager (Ray Lim) and Ice Rink Attendant (Galo Paz).

SSA Food Service Manager (Ray Lim) did not follow zoo protocol. He did not administer first aid to the injured zoo visitor and did not bring the two zoo visitors inside the Terrace Café during the Code 1 Tiger Escape. The food service manager (per Jesse Vargas-Operations Director) did not have a zoo radio inside the Terrace Café and was unaware of the Code 1 and the need to bring the two zoo visitors inside the Terrace Café. The Terrace Café only had a telephone.

Ice Rink attendant (Galo Paz) placed himself at risk by responding to the first aid call (which turned out to be a Tiger Code 1 escape) without being asked and without carrying a zoo radio.

Facility Review – Lion House and Associated Moated and Enclosed Outdoor Exhibits

The visiting committee checked all barriers in exterior and interior exhibits. They observed

locations around the circumference of each of four big cat exterior grottos where wall height should be closely re-examined and modified as necessary to prevent escape. The rear wall above an elevated cat resting area in Grotto “D” measured less than the planned barrier improvements along the front wall. *See photograph at the end of this narrative.*

The front barrier wall of the Siberian tiger exhibit as originally constructed in 1940 would have measured approximately 13-14’ at the lowest point. In 1982 approximately 8” of fill was added and topped with another 4” of concrete (*photo attached*) at one end of the dry moat *presumably* to provide a sloping floor to channel water to a drain at the opposite end. This change along with a marginally high barrier, scratch marks on the wall made by the tiger, and a patted down area of vegetation just outside the exhibit in line with the scratch marks support the theory that the tiger jumped/scratched its way out of the exhibit. Staff speculate that the tiger got a running start by jumping to the moat floor from the elevated exhibit edge and then springing and scratching its way up the wall while grasping with its front claws on the curbed lip of the moat top. As pointed out earlier, necropsy photos of the claws support this theory. In any case, the barrier was not sufficient to contain the tiger that was relatively young at 4 1/2 years old and in excellent body condition. It should be pointed out the original barrier had been in place since 1940 when the Lion House was constructed. In the last 30 years 20 different tigers and 22 lions have been held in these exhibits according to zoo records without an escape. *See photographs attached at the end of this narrative.*

Areas of vegetation along the rear and side walls in grottos A, B, & C appeared to provide opportunities for big cats to climb or jump to as a means of scaling existing exhibit barriers. Structural vegetation (that which could support a tiger or lion at any age) should be cleared to a safe distance away from walls or reduced in height to eliminate any potential escape routes. This will need to be monitored on a regular basis. *See photograph at the end of this narrative.*

The mammal curator and a zookeeper reported that eight of the 15 shift doors leading from Lion House interior cat holding to outdoor exhibits either are not used or are non-functional. However, there is no physical or visual indicator identifying which doors are not in use. In an emergency situation, time could be lost or personnel could encounter dangerous conditions if unable to rapidly discern which door mechanisms function. All doors must either be repaired or permanently disabled.

Lion House Policy 3.7, bullet point 4, directs animal care personnel that any lock which is attached to animal containment doors should be locked at all times, whether a door is open or closed. This is a good policy for several reasons, including: a) it should provide a means to secure the door either open or closed and prevent injury to animals because of pulling or slamming loose doors; and b) it communicates to a keeper entering an area that all facilities are secure; and c) it sends a consistent message that lock security is an important component of safe animal care. However, numerous instances were observed in which open connecting doors between cages were “dummy locked,” running the shank of a padlock through a pad or tab, but not closing the lock mechanism. The practice of dummy locking is specifically addressed in the policy manual as being inappropriate, yet in addition to observing it in the Lion House and Feline Conservation Center (FCC) it was discussed with a zookeeper and the mammal curator who both indicated that dummy locking is current practice in the area for doors that do not need to be fastened in the closed or open position. The zoo needs to enforce its written policy, and add lock tabs to sliding door handles where necessary so they can be secured in an open position to prevent potential animal injury.

Lion House Policy 3.7, bullet point 3, indicates that, whenever possible, more than one barrier should be in place between cats and animal care personnel. Prior to seeing it in print, the visiting committee asked about such a policy and a zookeeper replied that a double-barrier was recommended but not required; and that some keepers do not follow the recommendation because it takes too much time. The language should be strengthened and the policy enforced to achieve a higher measure of safety.

Daily operating procedures, but not the Lion House or FCC policies, state that keepers are to check the integrity of all animal containment on a daily basis. Prior to seeing this in print, the visiting committee asked about routine exhibit security checks to verify the integrity of the barriers and was told that they are not part of policy or training. A number of conditions were observed at the Sumatran tiger exhibit and the FCC in which cage material was either corroding, vegetation had potentially damaged it or the integrity of physical connections was in question. Given the age of the facility and environmental conditions conducive to rust, daily containment checks should be made, rusting metal checked and repaired or replaced as warranted, and thru-growth of woody vegetation removed to allow inspection of the mesh. *See photographs at the end of this narrative.*

Large Cat Management

Animal health and behavior appears good; and routine management of big cats seems generally safe and effective. All of the big cats are given in/out access overnight as a matter of routine. The section's major challenges appear to be in consolidating and reinforcing procedure, providing systematic training for new zookeepers and increasing attention to detail.

Routine management and exhibit operation observed during the inspection appeared generally safe and appropriate. Diet, animal training, and enrichment appeared appropriate and consistent with industry practices. All the animals appeared in physical and psychological good health.

The mammal curator has been on the job less than six months and continues to absorb and respond to the nuances of institutional culture. She demonstrates a good understanding of big cat management standard practice, and is working to condense and codify departmental operating procedures and policy. To move beyond a period of inertia – apparent even after the events of Christmas and early January – it will be important for her to establish a confident and assertive position.

During the visit, the zoo's short-handedness with regard to zookeepers was mentioned several times. The mammal curator worked a full-day keeper shift during the second inspection day because of a scheduling gap. As a management tool and a good way to familiarize oneself with her department's daily operation, this is an appropriate use of her time; but in an institution of San Francisco Zoo's size it is surprising to see a department head obligated to fill a keeper slot in addition to her other duties. Working with potentially dangerous animals, this situation may put employees in the position of being distracted from safety and security concerns by the rush to complete more than a full day's tasks.

Training of incoming zookeepers is done primarily by shadowing an experienced keeper until that keeper believes the new-hire is prepared to work independently. There are written policy and procedure manuals, but parallel versions for different exhibits contain contradictions and some procedures are not followed consistently among exhibit areas. This can lead to inconsistency in animal care and safety. One example is in daily inspection of exhibit security and containment. The Lion House Policy Manual directs that a monthly, written, exhibit security report be submitted to the curator; while the Feline Conservation Center operating procedures indicate that

a daily inspection should be made. At both locations, however, the visiting team found conditions of concern with respect to the condition of those exhibits; and the relief keeper whom the team interviewed was unaware of either the monthly report or daily inspection requirement.

The primary concerns with physical facilities (vegetation overgrowth, chronic rust and grotto wall height) indicate that routine observation and examination are lacking. The ability to remain vigilant is a key component of safe big cat management, preventing catastrophic events by observing and addressing small changes in condition or circumstances.

Planned Exhibit Barrier Improvements

During the inspection, the team observed an active construction site in front of all four grottos. A 4' high concrete wall was being erected to supplement the existing 12-13' moat wall. Directly on top of this, plans show either an additional 5' wire barrier with a 3' overhang or a glass viewing wall with an overhang of the same dimension. Drawings also show hot wire at three locations out of reach of the public near the top of the new concrete addition. These new barriers and the geometry of the adjacent walls appear adequate to contain lions and tigers and are consistent with barrier heights reported in the literature. *Photographs and diagrams are attached at the end of this narrative.*

The Snow Leopard Incident

On January 10, 2008, a snow leopard in Pod One of San Francisco Zoo's Feline Conservation Center (FCC) nearly escaped from a "bedroom" cage into the secondary containment keeper work area while zookeeper Mary Moore was working the area.

According to the incident report and an interview with Mary, the animal, an adult male, was temporarily housed directly across the aisle from an estrous female while new chain-link was being installed on his normal bedroom cage to replace old, rusted mesh. On the day of the incident Mary was cleaning the exhibit yard when she observed the snow leopard, head and shoulders out of the cage, into the Pod's main keeper area. The lag-hooks, screwed into steel columns and holding the chain-link panel in place, had apparently rusted through and the cat's repeated pushing and throwing of his body weight against it as he attempted to reach the female had pushed it free.

Because the primary service door and external controls to the cage transfer door are in the area into which the cat was escaping, Mary could not safely leave the exhibit by that route. So, while his head and forepaws were occupied with the caging breach, she reached into the holding cage from the exhibit yard and unlatched the transfer door. She then used the snow leopard's diet to distract and lure him back into the cage. At that point she exited the yard from a second service door, which enters another part of the Pod's keeper area, and successfully transferred the animal from the damaged cage out into the yard itself. Once the animal was in secure containment she radioed for backup. Curator of Mammals Ingrid Russell-White, zookeeper Amy Hansen and two members of the maintenance department responded. This group decided to temporarily seal the damaged caging with plywood.

The day of the incident, the male snow leopard's normal bedroom cage material was being replaced with galvanized 1" chain-link mesh. Since that time, all the remaining cage vertical wall cage mesh has been replaced with galvanized 2" chain-link because that material was readily available. Staff and management determined it would be better to complete the job in Pod One with less-desirable 2" mesh than to wait for delivery of the ideal 1" wire. Rusted ceiling cage material had not yet been replaced during our inspection.

As was seen in the tiger escape, San Francisco Zoo employees – in this case, notably, zookeeper Mary Moore - displayed clear thinking and correct action under pressure. However, the conditions that led to this incident were understood and documented far in advance. The previous accreditation visiting committee made note of the poor structural condition of the FCC chain-link cages in 2005, and the policy manual for the area clearly directs staff to inspect the caging every day – citing the male snow leopard's frequent testing of its strength. Yet the mesh replacement did not begin until January 2008, and daily inspections were admittedly not being carried out prior to the incident. The special inspection team noted and photographed identically rusted cage panels and other animal safety concerns throughout the FCC.

In order to protect the animals, visiting public and employees, the zoo must implement and adequately enforce its policies to safely manage its exhibits. It must also follow through on its commitment to eliminate and prevent deterioration of exhibit structures due to rust, and must utilize appropriate materials determined by zoo management to eliminate the risk of escape or injury.

Facility Review – Feline Conservation Center (FCC)

The Feline Conservation Center presented a special area of concern during this visit because of a near escape of a snow leopard that occurred on January 10, 2008. It had been area of concern on a previous regular accreditation inspection in 2005 and 2006. During the inspection a number of hazardous and potentially critical conditions mostly related to rust were observed throughout the zoo apart from those mentioned in the paragraphs above.

At Pod 1, initial replacement of rusted vinyl-clad 2x2 chain-links with galvanized 1x1 chain-link was underway at the time of the near snow leopard escape. In order to complete the job quickly, it was finished with galvanized 2x2 chain-link that the supplier had in stock. It was also observed that the new fence material was fastened in place using aluminum tie wires. This will serve in the short term, but over time will stretch and would not hold up to abuse by large cats. Replacing rusted fence material in Pods 2, 3 and 4 had not begun during the inspection. In every pod of the FCC, keeper passages between cages measure less than four feet wide. This puts keepers at risk from animals even when they are contained. Due to the flexible cage material, the spaces between cable-mesh enclosures are especially tight. Given the confined workspace within the pods and the range of size in the species present (ocelots to snow leopards); a smaller stiffer mesh should be used to improve safety in the area. *See photograph attached at the end of this narrative.*

In Pods 2 and 3, electrical outlets are mounted in locations accessible by animals and heater power cords were running adjacent to mesh and within reach of cats' paws. These should be moved out of reach of the animals. *See photograph attached at the end of this narrative.*

Rust was ubiquitous in the FCC, and it appeared that cage panels in other pods were in all probability compromised in the same way that the snow leopard cage failed. All connections need to be checked for structural integrity and repaired or replaced as needed. *See photograph attached at the end of this narrative.*

Zoo guest safety is also a concern at the FCC. The area is isolated and public barriers are generally not above 30 inches in height – easily crossed by an adult stepping over them. Service roads leading to maintenance areas and animal back areas were never observed to be gated or chained off from public access during the two-day visit. This area is overdue to be closed to the public (per letter to the commission dated 2/1/2007) and should be closed as it represents a safety hazard to guests.

Animal Escape Plan, Drills & Emergency Procedures & Policy

A review of animal escape and emergency procedures found them to meet standards and are typical for an accredited zoo of this size and collection. They do not include a provision for contract employees in the retail and food areas. Drills for animal escapes have been conducted on a regular basis; roughly 4 in the last two years with the last one occurring in May of 07. These drills did not include contract employees. A training and review session for animal escape principles was also held during this time period. Four additional drills or training sessions were conducted for earthquake emergencies between 2004 and the present.

A comprehensive staff training program is under development at the time of the special inspection and will serve to establish and certify core competencies with new animal care staff. We feel that this is a positive step in insuring that new staff will have the requisite skills to take good care of the animals and the enclosures in which they spend their life. A manager on duty (MOD) system was initiated prior to the incident as the representative of the executive director on weekends and other designated days. This should be of great assistance in the event of an escape or other emergency. Unfortunately, the MOD had left for the day when the incident occurred just after 5pm when the park still had visitors. Since the incident, a member of the shooting team is required to be on grounds whenever the public is present including evening events and sleepovers. This practice is under review with changes expected.

On the day of the incident 102 employees were assigned to work including 31 in animal care and three in the veterinary hospital, by 5pm only two animal care staff and one veterinary technician were on grounds; the majority of staff were sent home at 4pm for the Christmas holiday. This is not a sufficient number given that the zoo remained open after 4pm and even after 5pm. This has been changed to allow for much better staffing until all visitors have been cleared from the grounds and security has given the all clear. This is also expected to be further refined in the near future.

The practice of each keeper leaving radios for charging in their area has been changed. On the date of the incident, these keepers were not able to communicate with others near the end of the workday as they headed across the zoo to the keeper staging area for checkout. These staff would have walked directly into the area of the roaming tiger without a radio had they not been released to go home early at 4pm instead of the normal 5pm quitting time.

Finally, the zoo has increased the number of security staff on grounds during the day and at night to better serve visitor safety and zoo security.

It appeared to the inspection team that the zoo lacks enough supervisory personnel in the animal care department to effectively train, oversee, and enforce existing policies and procedures. The zoo is too often chasing problems rather than proactively addressing known concerns. This will require a shift in culture and the supervisory and maintenance staff to make it happen.

DATE \@ "M/d/yyyy" 3/18/2008

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