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Fire Protection and Security at the Denver Federal Center.
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Report to Rep. Timothy E. Wirth; by Robert F. Keller, Acting
Comptroller General.

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Organization Concerned: General Services Administration.

Congressional Relevance: Rep. Timothy E. Wirth.

Tenant agencies in the Denver Federal Center have dangerous housekeeping practices, and half of the space in the Center does not have sprinkler systems. Findings/Conclusions: The Regional Administrator said that the tenant agency personnel were not interested in fire-safety courses and that funding for sprinklers had been hard to obtain. The headquarters officials said that the region has the authority to enforce fire-safety regulations, and should report violators to tenant agency heads who are responsible for taking disciplinary action. Furthermore, regional administrators must decide how much to spend on sprinklers and coordinate such work with other building repairs. The four officers of the Federal Protective Service protecting the Center seem to compare favorably with the local community's force. Recommendations: To improve fire protection at the Center, the Administrator of General Services should follow up to determine whether the Regional Administrator: (1) obtains the cooperation of tenant agency heads in requiring fire-safety training for tenant personnel responsible for handling flammable materials and complying with fire regulations and in issuing warnings to any of their personnel responsible for fire-safety violations; (2) recommends to tenant agency heads suspension or other appropriate action against repeat offenders; and (3) increases the number of fire-department inspections in high-hazard areas and in buildings without fire-protection systems until the General Services Administration has such systems installed. (Author/SC)

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*REPORT OF THE
COMPTROLLER GENERAL
OF THE UNITED STATES*

**Fire Protection And Security
At The Denver Federal Center**

General Services Administration

Tenant agencies in the Center have dangerous housekeeping practices and half of the space in the Center does not have sprinkler systems. This report recommends ways to improve the Center's fire protection.



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-125617

The Honorable Timothy E. Wirth,
House of Representatives

Dear Mr. Wirth:

In response to your July 22, 1976, request and discussions with your office, we evaluated the General Services Administration's fire protection and security at the Denver Federal Center. We briefed your office on October 14, 1976, on our preliminary findings and we subsequently obtained and considered the Regional Administrator's and headquarters officials' comments on our findings, conclusions, and recommendations. We also obtained, but did not verify, comparative data on fire protection in nearby military installations and communities and on security in a nearby community.

As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 50 days after the date of the report. We will be in touch with your office in the near future to arrange for release of the report so that the requirements of section 236 can be set in motion.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "R. F. Kellum".

ACTING Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE
HONORABLE TIMOTHY L. WIRTH
HOUSE OF REPRESENTATIVES

FIRE PROTECTION AND SECURITY
AT THE DENVER FEDERAL CENTER
General Services Administra-
tion

D I G E S T

FIRE PROTECTION

The main weaknesses in fire protection at the Denver Federal Center are the tenant agencies' dangerous housekeeping practices and lack of sprinklers in half of the Center's 4 million square feet of space.

The Regional Administrator said

- the tenant agency personnel were not interested in fire safety courses,
- his recommending to tenant agency heads that fire safety violators be disciplined was potentially effective but the region has no enforcement means,
- the fire department will increase inspections, and
- funding for sprinklers has been hard to obtain.

Headquarters officials said

- the region has authority to enforce fire safety regulations and should report violators to tenant agency heads who are responsible for taking disciplinary action, and
- regional administrators must decide how much to spend on sprinklers and coordinate such work with other building repairs. (See p. 4.)

To improve fire protection at the Center, the Administrator of General Services should follow up to determine whether the Regional Administrator

- obtains the cooperation of tenant agency heads in (1) requiring fire safety training for tenant personnel responsible for handling flammable materials and complying with fire regulations and (2) issuing warnings to any of their personnel responsible for fire safety violations,
- recommends to tenant agency heads suspension or other appropriate action against repeat offenders, and
- increases the number of fire department inspections in high hazard areas and in buildings without fire protection systems until the General Services Administration has such systems installed. (See p. 4.)

GAO believes that the Center's fire department protection compares favorably with the protection provided at nearby military installations and communities. (See p. 5.)

GAO did not have enough cost data to conclusively analyze the bids and services proposed by two outside fire departments for protecting the Center. Taken at their face value, the proposals probably would not be more advantageous to the Government. (See p. 6.)

SECURITY

The Federal Protective Service has four officers protecting the Center by guarding the main gate during nonbusiness hours, inspecting buildings and security areas, patrolling the Center in mobile units, and doing other related work. This force seems to compare favorably with the local community's force. (See p. 7.)

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	<u>ABBREVIATIONS</u>	
GAO	General Accounting Office	
GSA	General Services Administration	

CHAPTER 1

FIRE PROTECTION

The Denver Federal Center is a square mile Federal enclave operated and maintained by the General Services Administration (GSA), Region 8. The Center's 108 buildings (3.8 million square feet of office, laboratory, warehouse, and special purpose space) are used by 16 Federal agencies, mainly the Department of the Interior and GSA.

Since 1964, 88 fires have caused \$9.1 million in damages at the Center. The Center's fire department extinguished all but two fires before major damage occurred. A fire from a circuit breaker malfunction caused \$450,000 damage to building 41 in 1973, and arson caused an estimated \$8.5 million damage to building 25 on March 19, 1976.

Fire protection at the Center is the joint responsibility of GSA and its tenants. GSA is responsible for providing and maintaining a safe environment and fire protection equipment. The tenants are responsible for preventing fires and using their space safely. GSA carries out its responsibilities through its Center fire department and the Region 8 accident and fire prevention branch. The fire department had 22 of its 23 positions filled during the first half of 1976 while 4 of the 5 branch positions were filled.

FIRE PREVENTION

The accident and fire prevention branch and the fire department carry out fire prevention functions by inspecting buildings, reviewing repair, alteration and new construction plans, and conducting fire safety campaigns and employee fire safety education.

Under Region 8 policy, the accident and fire prevention branch should survey each building yearly to determine the safety of the structure and its occupants. For each fire safety recommendation requiring modifications to the building's structure or installation of alarms, the branch prepares a detailed description of the work needed. Minor deficiencies are corrected through GSA maintenance work orders, while larger deficiencies are proposed as repair and alteration projects. If a tenant is responsible for an unsafe condition, the Regional Commissioner,

Public Buildings Service, requests the tenant to correct the deficiency.

The branch is behind schedule on 105 of the 108 Center building surveys. In November 1976, a management survey team from GSA's central office recommended that an additional person be added to the branch staff. The branch chief expects an additional person by May 1977.

GSA directed its regions in June 1976 to inventory all laboratory space and schedule projects to correct deficiencies in construction, fire protection, and safe operations. GSA also directed its regions in July 1976 to inventory all GSA buildings and report deficiencies and needs such as alarms, emergency power, standpipes, additional exits, fire pumps, and detectors. Region 8 accident and fire prevention branch combined the laboratory and building data and ranked each building in the order of fire and life safety needs.

The fire department inspects each occupied building at least monthly to identify fire hazards. The fire fighters list deficiencies and attempt to obtain corrective action through personal contact and discussion with the tenants. Fire department officials said that sometimes several contacts are required to obtain corrective action and, in other cases, this approach does not work. In those cases, the Buildings Manager or the Regional Commissioner, Public Buildings Service, requests the agency to take corrective action. If the request fails, GSA takes no further action.

GSA has had some success in getting agencies to correct fire hazards, but hazardous conditions from dangerous house-keeping practices still exist. During a weekend tour of the Center, we observed large amounts of flammable liquids improperly stored, frayed electrical wiring, electrical appliances left on, and other potential fire hazards. GSA officials said that these hazards exist because agencies, as a rule, are not aware of or ignore their fire protection responsibilities.

FIRE DETECTION

In a building-by-building survey, we determined that sprinkler systems and smoke and heat detectors connected to fire department alarm protected about half of the Center's 3.8 million square feet of space. (See app. I.) Under GSA standards, about 85 percent of the remaining 2 million square feet should have sprinklers.

The region had six sprinkler projects for 537,000 square feet of space scheduled for fiscal year 1978 at an estimated cost of \$1.3 million. As a result of their mid-1976 surveys, regional officials scheduled 17 more sprinkler projects for an additional 1.4 million square feet.

In the two major fires, building 25 had no fire detectors in the laboratory area where the fire occurred, and the automatic sprinkler/alarm system in building 41 did not work immediately because the fire was in the ceiling above the sprinklers. GSA rewired building 41 to prevent this situation from reoccurring and plans to move the laboratory from building 25 in September 1977.

The fire investigator said large quantities of flammables were stored improperly in building 25 and that laboratories should be in separate single-story buildings for greater safety. Regional officials said that they plan separate single-story laboratories in the future.

FIRE FIGHTING

The Center has a fire station with two fire trucks, two pickup trucks, an ambulance, and portable auxiliary equipment. A minimum of four fire fighters and one dispatcher are required for each shift. During the first half of 1976, 6 or 7 of the Center's 22 fire fighters were usually on duty each shift, but never less than 5.

The fire department calls on all off-duty personnel and other fire departments for major fires. For example, 18 Center fire fighters and the Lakewood and Bancroft Fire Protection Districts fought the fire in building 25 which caused \$8.5 million damage. The Center and seven local fire departments have mutual aid agreements which contain a waiver for compensation.

The investigator for the fire in building 25 said that the fire fighters contained the fire at the lowest monetary loss. A fire inspector for a nearby military installation, who fought the fire as a Bancroft volunteer fire fighter, said that the Center's fire department fought the fire very professionally.

CONCLUSIONS, AGENCY COMMENTS, AND OUR EVALUATION AND RECOMMENDATIONS

The main weakness in fire prevention is the dangerous housekeeping practices of some tenant personnel. The main

weakness in fire detection is the lack of sprinkler/alarm coverage for about half (2 million square feet) of the Center's space. We suggested that the Regional Administrator improve housekeeping practices and increase inspections until GSA installs sprinkler systems in unprotected areas.

The Regional Administrator said (see app. III) that:

- Region 8 has worked with the Colorado Safety Association and the National Safety Council in preparing a fire safety course but the Center's agencies are not interested in such a course.
- Warnings and recommending suspensions are potentially effective in correcting tenant carelessness, neglect, and apathy, but the region later said that it has no effective means to enforce fire safety regulations.
- The fire department will increase inspections in high hazard areas and during nonbusiness hours in buildings without fire protection systems.

In regard to the Regional Administrator's comments on enforcing fire safety regulations, headquarters officials said that Federal property management regulations authorize the Regional Administrator to enforce the agency's fire safety regulations. Concerning our suggestion on enforcement, they said that the region should identify violators to tenant agency heads who are responsible for disciplining their own personnel.

The Regional Administrator also said that GSA continues to install needed sprinkler/alarm systems as funds become available, but the funding has been hard to obtain. Headquarters officials said that Regional Administrators must decide on how much to spend for expanding sprinkler systems and coordinate such work with other building repairs. Sprinkler systems are financed through the repairs and alteration account in the Federal building fund. We did not analyze the funds available for sprinkler systems but we plan to review this fund in the near future.

To achieve more responsible observance of fire prevention procedures, we recommend that the Administrator of GSA should follow up to determine whether the Regional Administrator

- obtains the cooperation of tenant agency heads in (1) requiring fire safety training for tenant personnel responsible for handling flammable materials and complying with fire regulations and (2) issuing warnings to any of their personnel responsible for fire safety violations,
- recommends to tenant agency heads suspension or other appropriate action against repeat offenders, and
- increases the number of fire department inspections in those areas where hazardous conditions exist.

To improve fire detection, we recommend that the Administrator of GSA should follow up to determine whether the Regional Administrator requires more nonbusiness hours inspections of Center buildings without fire protection systems until GSA installs such systems.

COMPARISON WITH OTHER FIRE DEPARTMENTS

The Center's fire department protection compares favorably with the protection provided at nearby military installations and communities. (See app. II.) For example, the Lakewood Fire District has 5 fire stations, 84 fire fighters (an average of 17 for each station), 9 fire trucks, and 2 ambulances to protect 30 square miles. In comparison, the Center has 1 station, 22 fire fighters, 2 fire trucks, and an ambulance to protect 1 square mile.

The Center's fire department performs several duties not normally performed by the district such as maintaining fire alarm and sprinkler systems, monitoring controlled burning and welding, escorting personnel into locked areas, and administering first aid training.

COST ESTIMATES ON CONTRACTING FOR FIRE PROTECTION

GSA obtained cost estimates for fire protection from two fire districts. Lakewood Fire District proposed a fixed-price, long-term contract at a cost based on the Center's assessed property value. In the absence of assessed value, we had no basis for estimating the annual cost. GSA estimated that it would cost \$165,000 to obtain auxiliary services such as maintenance and monitoring duties specifically excluded from the proposal.

Bancroft Fire District offered two proposals. The first proposal stipulated that the district would assume operating the Center's fire station and equipment. The cost of services would increase from \$402,000 for the first year to \$600,000 for the fifth year subject to adjustment for the level of required services. This proposal was unclear about the auxiliary services now provided by the Center's fire department.

In the second proposal, the district would assume operating the Center's fire department with plans for reducing the staff in relation to upgrading fire protection features in the Center structures. The estimated price for this proposal would decrease from \$402,000 for the first year to \$330,000 for both the fourth and fifth years provided that all structures would be adequately upgraded by the fourth year.

GSA's estimated cost for operating the Center's fire department in 1976 was about \$334,000. This included direct salaries, GSA contributions to fringe benefits, and other costs such as uniforms, vehicle rentals, and fire fighting equipment.

We did not have enough cost data to make a conclusive analysis of the bids and services proposed by the two outside fire departments. But taken at their face value, we doubt that the proposals would be more advantageous to the Government.

CHAPTER 2

SECURITY

During 1975, 215 thefts were reported which resulted in losses of \$26,000 in Government property and \$15,000 in personal property at the Center.

The Federal Protective Service is responsible for security in Region 8. The Service has four officers on duty at all times at the Center. A Service official told us that the desirable staff level is six officers on each shift. The Service officers are armed and equipped with devices such as walkie-talkies.

The Center is surrounded by a security fence with five gates. Service officers guard the main gate during nonbusiness hours, inspect high security areas each half-hour, patrol streets in mobile units at irregular intervals, and inspect the interior of major unlocked buildings after normal duty hours. The officers also control traffic and parking, investigate traffic accidents and reported crimes, and respond to requests for assistance.

Prior to July 1974 the Service inspected the interior of occupied and unlocked buildings on all shifts. After that time, interior inspections were discontinued during daylight hours while night inspections continued until January 1976, when a bombing occurred in a downtown Denver Federal building. Officers were then reassigned from Center inspection duties to guardposts inside the downtown buildings. Nighttime interior inspections were resumed at the Center in November 1976.

Security devices at the Center include 24 monitored intruder alarms, locks on doors of sensitive or high value areas in many of the unlocked buildings, and locks on the doors of 46 of the Center's 108 buildings. GSA's repair and alteration branch completed a security study in October 1974 and estimated that it would cost about \$1 million to install electronic surveillance locking systems on all doors of 17 major Center buildings. The study contained no recommendations but such systems are being installed in three of the buildings. Most of the Government property losses in 1975 occurred in seven unlocked buildings.

Federal regula
protective service for
custody. The agency
model to systematical
needs and protection.

quire GSA to provide normal
buildings and grounds in its
currently developing a computerized
analyze Federal property security

COMPARISON WITH LOCAL
POLICE FORCE

The Center's security force seems to compare favorably with the local community's force. The Lakewood Police Department has 15 to 20 police officers on each shift and the equivalent of 1 mobile unit for each 4 square miles. In comparison, the Center has four officers on each shift for 1 square mile, with two officers performing mobile patrols.

STATUS OF SPRINKLER PROTECTION

<u>Build- ing number</u>	<u>Total</u>	<u>Protected by sprinklers</u>	<u>Requiring sprinklers</u>	<u>Sprinkler system status</u>
(square feet in thousands)				
810	681	681	-	Installed
41	501	501	-	do.
67	389	94	286	Planned
25	364	44	318	do.
20	360	14	346	do.
53	356	113	172	do.
56	312	29	281	do.
48	152	152	-	Installed
45	75	-	75	Planned
51	68	68	-	Installed
50	61	-	59	Planned
47	53	-	-	-
40	51	-	-	-
85	42	-	41	Planned
16	36	-	35	do.
710	35	-	35	do.
15	29	-	29	do.
46	22	-	2	do.
62	17	-	17	(note a)
76	15	-	-	-
21	14	-	10	Planned
55	13	-	10	do.
52	12	-	-	-
42	11	-	10	Planned
24	3,669	1,696	1,726	
Other build- ings	84	2	58	
Total	3,797	1,698	b/1,784	
Percent of total		45	47	

a/Private building and is subject to agency's fire protection.

b/Either because of the small size or type of building, sprinklers are not required for 315,000 sq. ft. or 8 percent.

COMPARATIVE DATA ON FIRE PROTECTION

AT DENVER FEDERAL CENTER, LOCAL

MILITARY INSTALLATIONS, AND FIRE DISTRICTS

	Military installations				Fire districts	
	Denver Federal Center	Fitzsimons Army Medical Center	Lowry Air Force Base	Rocky Mountain Arsenal	Bancroft	Lakewood
General:						
Square miles	1	1	3	28	63	30
Population	6,800	4,500	20,000	1,800	90,000	100,000
Buildings	108	384	548	299	Unknown	Unknown
Fire department:						
Total staff	22	14	48	17	a/102	84
On duty at each station	5-8	3-4	15-17	4-5	1-5	5
Stations	1	1	1	1	8	5
Fire trucks	2	2	3	2	12	9

a/Includes 50 volunteers on-call.

UNITED STATES OF AMERICA
GENERAL SERVICES ADMINISTRATION

February 24, 1977

Region 8
Denver Federal Center
Denver, Colorado 80225

Mr. Irwin M. D'Addario
Regional Manager
U. S. General Accounting Office
Suite 300-D
2420 W. 26th Avenue
Denver, CO 80211

Dear  Mr. D'Addario:

In compliance with your letter of February 4, 1977, we have reviewed your draft report on fire protection and security at the Denver Federal Center and believe that the report is an accurate presentation of the facts concerning this subject. The conclusions and recommendations in the report, however, cause us some concern and have generated the following comments:

1. The report identified the main weakness in fire detection conditions as being the lack of sprinkler/ alarm coverage for about half (two million square feet) of the Denver Federal Center's space. While this observation is substantially correct, little consideration was given to the fact that General Services Administration continues to install such systems where needed as funds become available. The funding for the installation of sprinkler/alarm systems has been difficult to obtain and, consequently, the deficiency has been difficult to rectify. Although your report identifies this problem area, no recommendations as to a practical resolution of the problem were presented.

2. We concur with your recommendation that tenant agency personnel responsible for the storage and handling of flammables be required to attend a fire safety course. It is also our feeling that a course in laboratory safety should be presented to those personnel working in such an environment. We have not, however, been entirely successful in our endeavor to make laboratory agencies fire-safety conscious.

The U. S. Civil Service Commission's Denver Regional Training Center, the organization responsible for the Federal Employee Training Program, was contacted concerning

the presentation of a fire safety course. We were informed that they are not prepared to provide this recommended course. GSA has, in addition, worked with the Colorado Safety Association and the National Safety Council to develop a course on laboratory safety. An informal poll of the concerned agencies revealed, however, that Federal Center agencies lacked interest in such a course.

3. We feel that all of our available resources are currently committed to all aspects of fire prevention. By rearranging our current commitments we will be able to increase the fire department inspections in high hazard areas and also to increase the frequency of nonbusiness hours inspections in those buildings without fire protection systems.

4. Your recommendation concerning the issuance of warnings to any tenants responsible for fire safety violations, with suspension from duty to be recommended for repeat offenders, is considered potentially effective in correcting fire safety problems associated with the carelessness, neglect, or apathy of tenant agency personnel. In any case, we feel that the most effective method of ensuring positive fire protection is to concentrate on the installation of fire detection and containment devices. An additional recommendation is that laboratories and other high fire hazard operations should be housed in buildings specifically designed to provide safer working environments for such functions.

In conclusion, we feel that the recognition of hazards is merely the first step in the resolution of the overall fire safety problem. As we explained to your auditors, the correction of the identified problems requires resources, especially funding, and it remains our belief that the lack of the essential resources is the most significant problem with regard to the security and fire protection situation at the Denver Federal Center.

We appreciate your interest in this matter and would be pleased to provide you with any additional information you may desire.

Sincerely,



MICHAEL J. NORTON
Regional Administrator

Congress of the United States
House of Representatives
Washington, D.C. 20515

July 22, 1976

Mr. Elmer B. Staats
Comptroller General of the United States
General Accounting Office Building
441 G Street
Washington, D. C. 20548

Dear Mr. Staats:

I recently spent several hours with Region VIII General Services Administration administrators viewing the damage caused by the \$8 million Denver Federal Center fire. This on site inspection provided an opportunity to discuss security and fire safety procedures established for the facility by the General Services Administration. Unfortunately, it generated more questions in my mind than it answered.

The recent fire was the second one to cause major damage in the past three years. Despite the earlier disaster, GSA has not installed sprinkling systems or smoke detectors in a number of high hazard areas. Consequently, valuable equipment, irreplaceable research, and important records are in constant danger of being destroyed.

There are 108 permanent structures on the Federal Center grounds, protected by 11 fire-fighters scheduled for duty on each 24 hour shift. Unofficial sources suggest that there may only be an average of eight or nine firemen on the grounds at any given time; the others are either often on leave or ill. It is the responsibility of the fire-fighters to inspect the buildings on a regular basis, yet staff size may be imposing serious limits on inspection procedures.

Alarm systems are minimal. Even some of the newer buildings, such as the Fish and Wildlife facility which was constructed some six or seven years ago, have no fire detection equipment. This holds true of the testing labs in the Bureau of Reclamation building as well.

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Mr. Elmer B. Staats
July 22, 1976
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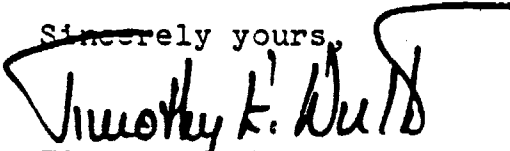
Security services at the Center also appear to be highly inadequate. During the day shift about 17 people are on duty. Five or six of them are on fixed post duty guarding four gates. The twelve remaining officers are employed by the Federal Protective Service and are responsible for patrolling the Center as well as Federal installations at other locations. During the midnight and swing shifts, a total of only seven or eight persons are guarding the gates, patrolling the Center, and patrolling other Federal property. Rarely are there more than two FPO's on Center grounds.

These conditions and procedures relating to fire prevention and security are of deep concern to me. Both federal employees and property appear to be subject to potentially serious risks. I therefore request that the General Accounting Office conduct an audit of the fire and security equipment, procedures, and staffing at the facility. I would be interested in an assessment of the following particular items:

- fire prevention equipment, personnel and procedures
- fire detection equipment, personnel and procedures
- fire fighting equipment, personnel and procedures
- security equipment and personnel

In making your audit I would find particularly useful information on the comparability of Denver Federal Center procedures, equipment, and personnel to those found at other similar federal and private installations. I would also welcome any recommendations you might make for improving or strengthening fire prevention and security procedures at the facility.

With best wishes,

Sincerely yours,

Timothy H. Wirth

TEW:la