

**CITY OF CHICAGO
DEPARTMENT OF PROCUREMENT SERVICES
ROOM 403, CITY HALL, 121 N. LASALLE ST.**

JUSTIFICATION FOR NON-COMPETITIVE PROCUREMENT

COMPLETE THIS SECTION IF NEW CONTRACT, TERM AGREEMENT OR PURCHASE ORDER

For contract(s) or purchase order, answer applicable questions in each of the 4 major subject areas below in accordance with the Instructions for Preparation of Non-Competitive Procurement Form on the reverse side.

Request that negotiations be conducted only with Hydra-Shield for the product and/or services described herein.
Name of Person or Firm

This is a request for: ___ (One-Time Contractor P.O. per Requisition # _____, copy attached) or ___ Term Agreement or ___ Delegate Agency (Check one). If Delegate Agency, this request is for "blanket approval" of all contracts within the _____

(Program Name) (Attach List) Pre-Assigned Specification No. _____
Pre-Assigned Contract No. _____

COMPLETE THIS SECTION IF AMENDMENT OR MODIFICATION TO CONTRACT

Describe in detail the change in terms of dollars, time period, scope of services, etc., its relationship to the original contract and the specific reasons for the change. Indicate both the original and the adjusted contract amount and/or expiration date with this change, as applicable. Attach copy of all supporting documents. Request approval for a contract amendment or modification to the following:

Contract #: _____ Company or Agency Name: _____

Specification #: _____ Contract or Program Description: _____
Mod #: _____ (Attach List, if multiple)

[Signature] 7-0863 [Signature] Water Mgt _____
Originator Name Telephone Signature Department Date

Indicate SEE ATTACHED in each box below if additional space needed:

() PROCUREMENT HISTORY <u>See Attached</u>
() ESTIMATED COST <u>See Attached</u>
() SCHEDULE REQUIREMENTS <u>See Attached</u>
() EXCLUSIVE OR UNIQUE CAPABILITY <u>See Attached</u>
() OTHER

APPROVED BY: [Signature] 4-23-04
DEPARTMENT HEAD OR DATE BOARD CHAIRPERSON DATE
DESIGNEE

PROCUREMENT HISTORY

Water purchased these custodians and related components approximately twenty years ago. Since that time the Department of Water has required the company to improve the custodians wherein they would be "vandal proof devices".

ESTIMATED COST

Five year total cost will be approx. \$3,065,000.

SCHEDULED REQUIREMENTS

The Department will be ordering 2000 units per year or as needed.

EXCLUSIVE OR UNIQUE CAPABILITY

Hydra-Shield Mfg. is the manufacturer and distributor of these units. These devices were designed and perfected by the company in conjunction with the City of Chicago, Department of Water engineers. Hydra-Shield holds the patent for these vandal proof devices (Custodians). These patents are numbers 4,620,428 and 5,596,893. They also own as part of the patent, the "key wrench" which activates the system and the "puller tool: for removal of the outer body and the component parts comprising the system.

USPTO PATENT FULL-TEXT AND IMAGE DATABASE[Home](#)[Quick](#)[Advanced](#)[Pat Num](#)[Help](#)[Bottom](#)[View Cart](#)[Add to Cart](#)[Images](#)

(1 of 1)

United States Patent
Stehling, et al.

Custodian[®]

5,596,893
January 28, 1997

Devices for securing fire hydrant valves

Abstract

A magnetic security device for preventing unauthorized opening of fire hydrant valves includes an inner cylindrical member which is fixed to a nut on the valve stem and an outer rotatable member which is coupled to the inner cylindrical member by a magnetizable element. The magnetizable element is attracted to move from an uncoupled to a coupling mode by a reaching permanent magnet integral with a special operating wrench. In accordance with one embodiment of the invention, an intermediate sleeve is provided which is coaxial with a nylon sleeve disposed around the outer surface of the inner cylindrical member. In addition, the inner cylindrical member has a knurled portion which engages the surface of a recess surrounding the valve operating nut so that if the outer operating member is tilted with respect to the inner operating member, the inner operating member binds with the wall of the recess, preventing rotation of the inner operating member and of the valve operating nut attached thereto. In accordance with a further arrangement, an intermediate sleeve of hardened steel and a plate of hardened steel surround otherwise accessible portions of the inner cylindrical member to prevent drill bits, which have penetrated the outer rotatable member, from penetrating the inner cylindrical member so that a pin cannot be inserted into the inner cylindrical member to link the members together allowing an unauthorized person can open the valve by rotating the outer rotatable member.

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Assignee: **Hydra-Shield Manufacturing, Inc.** (Irving, TX)

Appl. No.: **579767**

Filed: **December 28, 1995**

Current U.S. Class: 70/175; 70/176; 70/189; 70/276; 137/296; 251/65; 251/267

Intern'l Class: F16K 035/16

Field of Search: 70/188,189,222,223,175-180,276,229-232 137/296
251/65,267

References Cited [Referenced By]

U.S. Patent Documents

<u>3840041</u>	Oct., 1974	McMurray	137/296.
<u>3916939</u>	Nov., 1975	Gillard	137/296.
<u>4390038</u>	Jun., 1983	Salvato	137/296.
<u>4620428</u>	Nov., 1986	Kopesky	70/175.
<u>4716922</u>	Jan., 1988	Camp	70/276.
<u>5072750</u>	Dec., 1991	Poms et al.	70/175.
<u>5205312</u>	Apr., 1993	Jerman et al.	70/175.

Primary Examiner: Gall; Lloyd A.

Attorney, Agent or Firm: Millen, White, Zelano, & Branigan, P.C.

Claims

What is claimed:

1. A valve operator securing arrangement for fire hydrants having a valve stem, the valve stem having a valve nut, the valve stem being connected to a valve wherein rotation of the valve stem opens and closes the valve, the device comprising:

an inner cylindrical member having a lower end with a recess opening downwardly for receiving the valve nut in a non-rotational relationship, and an upper end with a first coupling element;

an outer rotational member mounted over the inner cylindrical member for rotation with respect to the inner cylindrical member, the outer rotational member including a second coupling element;

a movable magnetizable element urged to a first position, decoupling the first and second coupling elements, the magnetizable element being moveable to a second position coupling the first and second elements in a non-rotational relationship, wherein rotation of the outer rotational member rotates the inner cylindrical member to rotate the valve stem and operate the valve;

a wrench mechanically interlockable with the outer rotational member for rotating the outer rotational member, the wrench further including a reaching permanent magnet with a very strong magnetic field integral therewith and alignable with the magnetizable element for moving the magnetizable element from the first to the second position;

a fire hydrant cap for being fixed being with respect to the fire hydrant with a recess therein in which the valve nut is positioned, the recess having a circular wall surrounding the nut; and

a knurled surface on the exterior of the inner cylindrical member for engaging the circular wall if an attempt is made to grip the inner cylindrical member with the outer member by applying a force to the outer rotational member tilting the outer rotational member with respect to the inner cylindrical member, so that the inner cylindrical member binds with the wall of the recess preventing the inner cylindrical member from turning with respect to the fire hydrant cap, thereby preventing the valve nut from turning.

2. The arrangement of claim 1, wherein the first coupling element is a non-round recess in the inner

cylindrical member and the second coupling element is a non-round recess in the outer rotational member, the moveable magnetizable element having a cross section which complements the non-round recesses, whereby when the moveable element is drawn into the recess of the outer rotational member, the outer rotational member rotationally couples with the inner cylindrical member to rotate the valve stem nut.

3. A valve operator securing arrangement for fire hydrants having a valve stem, the valve stem having a valve nut, the valve stem being connected to a valve wherein rotation of the valve stem opens and closes the valve, the device comprising:

an inner cylindrical member having a lower end with a recess opening downwardly for receiving the valve nut in a non-rotational relationship, and an upper end with a first coupling element;

an outer rotational member mounted over the inner cylindrical member for rotation with respect to the inner cylindrical member, the outer rotational member including a second coupling element;

a movable magnetizable element urged to a first position, decoupling the first and second coupling elements, the magnetizable element being moveable to a second position coupling the first and second elements in a non-rotational relationship, wherein rotation of the outer rotational member rotates the inner cylindrical member to rotate the valve stem and operate the valve;

a wrench mechanically interlockable with the outer rotational member for rotating the outer rotational member, the wrench further including a reaching permanent magnet with a very strong magnetic field integral therewith and alignable with the magnetizable element for moving the magnetizable element from the first to the second position;

an intermediate sleeve of hardened steel positioned between the inner cylindrical member and outer rotational member; and

a cobalt steel plate disposed perpendicular to the axis of the members between the inner cylindrical member and outer rotational member for preventing drilling through the outer rotational member into the inner cylindrical member in order to defeat the arrangement by linking the outer and inner members together without shifting the magnetizable element.

4. The arrangement of claim 3, wherein the first coupling element is a non-round recess in the inner cylindrical member and the second coupling element is a non-round recess in the outer rotational member, the moveable magnetizable element having a cross section which complements the non-round recesses, whereby when the moveable element is drawn into the recess of the outer rotational member, the outer rotational member rotationally couples with the inner cylindrical member to rotate the valve stem nut.

5. A valve operator securing arrangement for fire hydrants having a valve stem, the valve stem having a valve nut, the valve stem being connected to a valve wherein rotation of the valve stem opens and closes the valve, the device comprising:

an inner cylindrical member having a lower end with a recess opening downwardly for receiving the valve nut in a non-rotational relationship, and an upper end with a first coupling element;

an outer rotational member mounted over the inner cylindrical member for rotation with respect to the inner cylindrical member, the outer rotational member including a second coupling element, a portion for interlocking with a wrench and an inwardly opening circular groove;

a movable magnetizable element urged to a first position, decoupling the first and second coupling elements, the magnetizable element being moveable to a second position coupling the first and second elements in a non-rotational relationship, wherein rotation of the outer rotational member rotates the inner cylindrical member to rotate the valve stem and operate the valve;

a wrench mechanically interlockable directly with the portion of the outer rotational member for rotating the outer rotational member, the wrench further including a reaching permanent magnet with a very strong magnetic field integral therewith and alignable with the magnetizable element for moving the magnetizable element from the first to the second position;

an intermediate sleeve disposed between the inner cylindrical member and outer rotational member for rotation with respect to both members, the intermediate sleeve being restrained in axial movement by engagement with a radially extending surface on the inner cylindrical member and having an outwardly opening circular groove therein juxtaposed with the inwardly opening circular groove of the outer rotational member; and

a retaining ring disposed in the grooves.

6. The arrangement of claim 5, wherein the first magnetic coupling element is a non-round recess in the inner cylindrical member and the second coupling element is a non-round recess in the outer rotational member, the moveable magnetizable element having a cross section which complements the non-round recesses, whereby when the moveable element is drawn into the recess of the outer rotational member, the outer rotational member rotationally couples with the inner cylindrical member to rotate the valve stem nut.

7. The arrangement of claim 5, wherein the retaining ring is made of a resinous material.

8. The arrangement of claim 5 further including a sleeve of resinous material disposed between the intermediate sleeve and the inner cylindrical member to minimize the opportunity for welding the members together in an attempt to defeat the arrangement.

Description

FIELD OF THE INVENTION

The present invention relates to devices for securing fire hydrant valves. More particularly, the present invention relates to magnetically operated devices for securing fire hydrant valves.

BACKGROUND OF THE INVENTION

Municipal and county water departments are frequently confronted with unauthorized use of fire hydrants by members of the public who, on occasion, open the valves of the hydrants to obtain water to cool-off on hot days or for the purpose of filling tank trucks with fresh water which is then sold for various purposes, such as filling swimming pools. In cities, open fire hydrants can result in a drop in water pressure to customers and can occasionally endanger a community by reducing the availability of water necessary to fight fires.

In attempts to secure fire hydrants from unauthorized use, fire companies have employed locking

devices such as the magnetic valve lock of U.S. Pat. No. 4,620,428. The particular valve lock disclosed in the '428 patent utilizes a magnetic detent which couples the valve operating nut of the fire hydrant to a sleeve which is normally freely rotatable with respect to the nut. The magnet is attracted by a second magnet permanently mounted in a wrench which cooperates with the sleeve to rotate the sleeve. With the help of magnets, sledge hammers and other nefarious devices, water thieves and vandals are increasingly able to defeat magnetic locking devices such as that shown in the '428 patent. Accordingly, there is a need for improvement in magnetic locks for fire hydrant operating valves which minimize the effectiveness of various techniques employed by unauthorized users to operate the valves.

SUMMARY OF THE INVENTION

Upon further study of the specification and appended claims, further features and advantages of this invention will become apparent to those skilled in the art.

In view of the aforementioned concerns, it is a feature of the present invention to provide a new and improved magnetic device for securing fire hydrant operating valves which render the operating valves difficult to open by unauthorized users while remaining easy to open by firemen.

In view of this feature, and other features, the present invention is directed to a device for use with a fire hydrant having a valve stem connected to a valve, wherein rotation of the valve stem opens and closes the valve. In accordance with the invention, an inner cylindrical member having a lower end with a recess opening downwardly receives the valve stem in a non-rotational relationship. The inner cylindrical member has an upper end with a first coupling element. An outer rotational member is concentrically mounted over the inner cylindrical member for normal rotation with respect to the inner cylindrical member. The outer rotational member has a second coupling member. A moveable magnetic element is mounted between the inner cylindrical member and outer rotational member and is urged to a first position normally decoupling the first and second coupling elements but is moveable to a second position coupling the first and second elements in a non-rotational relationship. When the magnetic element is in the second position, rotation of the outer rotational member can rotate the inner cylindrical member to rotate the valve stem and open the valve. The moveable magnetic element has a very weak magnetic field requiring an intense magnetic field for movement from the first position to the second position.

In a further aspect of the invention, a wrench which is mechanically interlockable with the outer rotational member, includes a permanent magnet with an extremely strong magnetic field that is integral with the wrench and alignable with the magnetic element for moving the magnetic element from the first to the second position when the wrench is interlocked with the outer rotational member.

In still a further aspect of the present invention, an annular sleeve is disposed between the inner cylindrical member and outer rotational member, the sleeve in one embodiment being a hardened steel sleeve and in another embodiment, being a nylon sleeve.

In still a further aspect, the inner-cylindrical member includes a knurled portion which engages the cylindrical wall of a portion of the hydrant, preventing the inner-cylindrical member from rotating with respect to the hydrant body in the case that the outer rotatable member has become sufficiently distorted to bind or weld with the inner-cylindrical member.

In still a further aspect of the present invention, the inner-cylindrical member is armored with a hardened steel plate disposed around the periphery of the magnetic element, which plate cooperates with the previously mentioned hardened steel sleeve to shield the inner cylindrical member from drilling.

BRIEF DESCRIPTION OF THE DRAWINGS

Various other objects, features and attendant advantages of the present invention will be more fully appreciated as the same becomes better understood when considered in conjunction with the accompanying drawing, in which like reference characters designate the same or similar parts throughout the several views, and wherein:

FIG. 1 is a side view, partially in section, showing a fire hydrant with a magnetic valve securing device configured in accordance with the principles of the present invention;

FIG. 2 is a side elevation of a first embodiment of a valve securing device configured in accordance with the principles of the present invention in an uncoupled mode;

FIG. 3 is a view similar to FIG. 2 but showing the valve securing device in a coupled mode for operation by a wrench;

FIG. 4 is an exploded view of the magnetic valve securing device of FIGS. 2 and 3;

FIG. 5 is a top view of the valve securing device of FIGS. 2-4;

FIG. 6 is a top elevational view taken along lines 6--6 of FIG. 2;

FIG. 7 is a top elevational view taken along lines 7--7 of FIG. 2;

FIG. 8 is a side elevational view of a second embodiment of a magnetic valve securing device configured in accordance with the principles of the present invention, showing the device in an uncoupled mode;

FIG. 9 is a view similar to FIG. 8, but showing the securing device in a coupled mode; and

FIG. 10 is an exploded view of the second embodiment of the valve security device of FIGS. 8 and 9.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring now to FIG. 1, there is shown a water line 20 having a valve 22 thereon which is opened by an elongated valve stem 24 to admit water into the body 25 of a fire hydrant 26. Upon opening a protective cap 28, water in the body 25 of the fire hydrant is available for use by a fire department. The fire hydrant 26 has a domed top 30 that has a circular recess 34 in which is positioned a pentagonal operating nut 36 that is fixed to the elongated valve stem 24. Disposed on the domed top 30 is a magnetic valve security device 40, configured in accordance with the principles of the present invention.

Referring now to FIGS. 2-7 wherein the first embodiment of the invention, the magnetic valve securing device 40, is shown in detail, it is seen that the device is comprised of an inner cylindrical member 42 which has a recess 44 in the shape of a pentagon which receives the pentagonal operating nut 36 which is fixed to or unitary with the valve stem 24. The operating nut 36 has a threaded bore 46 therein which receives the threaded shank 48 of a bolt 50 to hold the inner cylindrical member 42 in assemblage with the pentagonal nut 36. When the inner cylindrical member 42 rotates, then the valve stem 24 is rotated to either open or close valve 22 and let water from the water line 20 into the body 25 of the hydrant 26 (see FIG. 1). The inner cylindrical member 42 has a square recess 52 in the top thereof aligned with a bolt 50. The square recess 52 also contains a magnetizable element 54 which is also square in cross section and complements the recess 52.

The magnetizable element 54 is preferably made of 440C stainless steel which is both magnetizable and rust resistant. The magnetizable element 54 is slidable in the direction of axis 56, but is not rotatable in the square recess 52.

Aligned with the square recess 52 and the square magnetizable element 54 is a second square recess 58 positioned in an outer rotatable member 60 which forms a cap for the assembly 40. The outer rotatable member 60 is fixed for relative rotation on the inner cylindrical member 42 by a split nylon washer 62 received in an inwardly facing groove 64 in the outer rotatable member, which split washer is interlocked with the inner cylindrical member, as will be further explained hereinafter. The outer rotatable member 60 is case 8620 steel which is hardened to about RC 30.

Normally, the magnetizable element 54 rests within the recess 52 and is not within the recess 58. If the outer rotatable member 60 is then rotated about the axis 56, it will spin freely with respect to the inner cylindrical member 42, valve nut 36 and valve stem 24. Thus, the inner cylindrical member 42 cannot be operated by the outer rotatable member 60. In FIG. 2, the valve securing device 40 is shown in an uncoupled mode so that unauthorized users cannot open the valve 22 (FIG. 1).

Referring now to FIG. 3, it is seen that the magnetizable element 54 has been drawn into the second rectangular recess 58 in the outer rotatable member 60. The depth of the square recess 58 is such that it does not receive the entire thickness of the magnetizable element 54 so that a portion of the magnetizable element remains in the square recess 52. Since the recesses 52 and 58 are square and the magnetizable element 54 is square, the inner cylindrical member 42 must then rotate when the outer rotatable member 60 rotates.

As is best seen in FIG. 5, the outer rotatable member 60 has a cruciform rib arrangement or portion 68 on the exterior thereof, which rib arrangement or portion is received in a complementary socket 70 of a wrench 72. Accordingly, when the wrench 72 is rotated about axis 56, the outer rotatable member 60 rotates with the wrench. The wrench 72 includes a pocket 74 therein which includes a reaching permanent magnet 76. The very strong permanent magnet 76 magnetizes the magnetizable element 54 and pulls the element upwardly into the recess 58 in the outer rotatable member 60 so that the outer rotatable member 60 is locked with respect to the inner cylindrical member 42, thereby driving the valve stem 24 to rotate when the wrench 72 turns the outer rotatable member 60 about axis 56.

The present invention includes a number of features that enhance the effectiveness of the operating valve security device 40. The first feature is to make the magnetizable element 54 of a material which requires a strong reaching magnet for induction such as the reaching magnet 76. The reaching magnet 76 is expensive and difficult to obtain. Consequently, an unauthorized person utilizing ordinary magnets obtainable through a retail outlet is unable to move magnetizable element 54 from its FIG. 2 to its FIG. 3 position.

In order to make it more difficult for an unauthorized user to defeat the fire hydrant security device 40, the inner cylindrical member has an annular indentation 80 therein which receives a nylon sleeve 82. The nylon sleeve 82 has a generally cylindrical portion 83 and a lip 84 which abuts a peripheral flange 86 on the inner cylindrical member 42. Surrounding the nylon sleeve 82 is an intermediate sleeve 88 which has a groove 89 therein in which the split nylon ring 62 seats. Since the split nylon washer 62 seats also in the groove 64 of the outer rotatable member 60 it is not slidably removable in the direction of axis 56. The intermediate sleeve 88 rotates freely with respect to the nylon sleeve 82 as does the outer rotatable member 60 unless the magnetic element 54 is moved from the FIG. 2 to the FIG. 3 position locking the inner, cylindrical member 42 and outer rotatable member to one another. Nylon sleeve 82 provides a barrier which prevents the intermediate member 88 from becoming welded to the inner

cylindrical member 42 so that when a vandal strikes the device 40 with a sledge hammer, welding does not occur between the outer rotatable member 60, intermediate member 88 and inner cylindrical member 42 and the outer rotatable member remains freely rotatable with respect to the inner cylindrical member.

At its lower end, the inner cylindrical member 42 has a second annular indentation 90 which receives a knurled sleeve 92. The knurled sleeve 92 has an outer surface 93 which is roughened with very small projections or teeth which are positioned adjacent smooth annular wall 95 of the cap 30. If an unauthorized person attempts to bind the outer rotatable member 60 to the inner cylindrical member 42 by applying torque tending to tilt the outer rotatable member 60 slightly with respect to the axis 56, the teeth 93 of the knurled surface 92 bite into the surface of the wall 95, preventing the outer rotatable member 60 from rotating at all. Consequently, even if purchase is gained against the inner cylindrical member 42 by tilting the outer rotatable member 60, the valve stem 24 cannot be rotated because the outer rotatable member cannot be rotated. The knurled sleeve 92 and the nylon sleeve 82 provide security supplemental to the magnetizable element 54, further enhancing the effectiveness of the security device 40.

Referring now to FIGS. 8, 9 and 10, there is shown a second embodiment of the valve securing device, this time designated generally by the numeral 100. The valve securing device 100 is mounted on a fire hydrant, such as the fire hydrant 25 of FIG. 1 to secure a valve 22. Unlike the first embodiment 40, the second embodiment includes a thick rotatable collar 102 which is freely rotatable with respect to the cap 30 of the fire hydrant. As with the embodiment of FIG. 1, the valve securing device 100 of FIGS. 8-10 utilizes a bolt 50 with a threaded shank 48 for securing the device to a hex nut 36 unitary with a valve stem 24. Generally, the type of fire hydrant with which the security device 100 is utilized has a projecting pentagonal nut 36 which is received within a pentagonal opening 104 in an inner cylindrical member 106. The thick rotatable collar 102 is positioned coaxially with respect to the nut 36 to block lateral access to the area occupied by the nut.

As with the first embodiment, the inner cylindrical member 106 is surrounded at its upper end by an outer rotatable member 108 which forms a cap of 8620 steel, case hardened to about 58RC. The outer rotatable member 108 has at its lower end an annular groove 110. The annular groove 110 accommodates a projecting annular shoulder 112 extending from the thick collar 102 so that the outer rotatable member 108 is nested within an indentation 114 in the thick collar. The outer rotatable member 108 is axially locked with respect to the inner rotatable member 106 by a split nylon washer 116 which is received within a groove 118.

As with the first embodiment, the second embodiment includes a magnetizable element 120 made of 440C stainless steel which is received in a square recess 122 in the inner cylindrical member 106. The square recess 122 in the inner cylindrical member 106 is aligned with a square recess 124 in the outer rotatable member 108. As is seen in FIG. 9, when the wrench 128 with a reaching permanent magnet 130 is placed on the outer rotatable member 108, the magnetizable element 120 is magnetized and is drawn up into the recess 124 to couple the outer rotatable member 108 to the inner cylindrical member 106 so that applying torque to the wrench 128 causes the inner cylindrical member to rotate the nut 36 and thus open the valve 22 (FIG. 1).

In the arrangement of FIGS. 8, 9 and 10, a hardened carbon steel sleeve 130 is disposed around the inner cylindrical member 106 and is held in axial position with respect thereto by an annular shoulder 132 which has a frustoconical ramp portion 134 and an axially extending portion 136. Preferably, the sleeve 130 is 8620 steel carbonized and hardened to 58-60 RC and 0.030 case dipped. The sleeve has a shoulder 138 which abuts the ramp 134 and an axially extending surface 140 which is adjacent the axially extending surface 136 on the inner cylindrical member 106. A groove 142 cooperates with the groove 118 on the outer cylindrical member to retain the nylon split ring 116 in position so as to axially

lock the outer cylindrical member with respect to the hardened steel sleeve 130 and the inner cylindrical member 106.

Positioned over the top surface of the inner cylindrical member 106 is a cobalt steel washer 150, cast to size, which steel washer or plate has a square recess 152 aligned with the square recess 122 of the inner cylindrical member 106 so that the magnetizable element 120 can slide through the cobalt steel washer into the square recess 124 in the outer rotatable member 108.

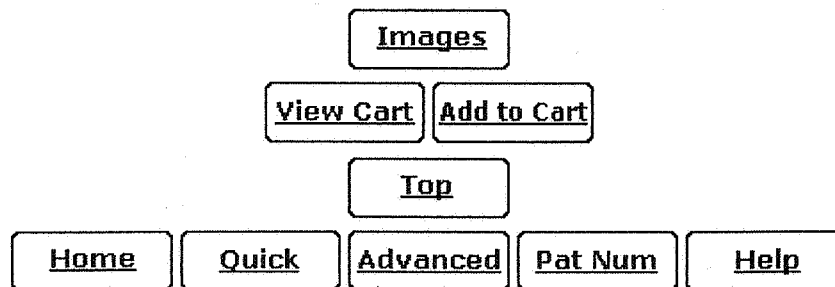
The hardened steel sleeve 130 and cobalt steel washer 150 cannot be penetrated by a drill and therefore prevent an unauthorized user from drilling a hole through the outer rotatable member 108 into the inner cylindrical member 106. Through such a hole an unauthorized user may insert a pin to lock the outer rotatable member 108 to the inner cylindrical member 106 so that a wrench applied to the outer rotatable member by the unauthorized user can rotate the inner cylindrical member and thus rotate the valve operating stem 24 of valve 22 (see FIG. 1).

It is within the scope of the present invention to equip the first embodiment 40 of the invention illustrated in FIGS. 1-7 with a cobalt steel washer, such as the washer 150, as well as to make the collar 88 of hardened steel, so as to similarly armor the valve operator security device 40 against defeat by drilling through the outer rotatable member 60 and inserting a pin to couple the outer rotatable member to the inner cylindrical member 42.

The aforedescribed arrangements provides enhanced security for fire hydrant valves which are constantly under assault by vandals and unauthorized users.

From the foregoing description, one skilled in the art can easily ascertain the essential characteristics of this invention, and without departing from the spirit and scope thereof, can make various changes and modifications of the invention to adapt it to various usages and conditions.

* * * * *



DETAILED SPECIFICATIONS

SCOPE

The Contractor shall furnish and deliver F.O.B., City of Chicago, Department of Water, the Custodian Vandal Resistant Fire Hydrant Lock and Repair Parts as described herein the Detailed Specifications and as listed on the Proposal Pages, and in accordance with the General and Special Conditions and Detailed Specifications.

DESCRIPTION

The Custodian Unit is a vandal resistant device to prevent unauthorized opening of fire hydrants. The device shall readily attach to the existing fire hydrant operating stem nut without modification of the hydrant housing or opening mechanism. Materials shall be strong enough to withstand acts of vandalism and weather extremes and still provide smooth hydrant operation. The device shall be unique in that only a special magnetic wrench can open or close the hydrant.

An inner barrel is constructed of two (2) pieces, the inner part made of high tensile bronze alloy (ASTM-B148, ASTM-B584 or equal) the outer part made of 1020 steel tubing, heat treated to 58-60 HRC, and shall be designed to fit over the existing fire hydrant operating stem nut. Attachment shall be by means of high tensile steel, Grade 9, alloy bolt. Bolt material to be AISI 4037 steel heat-treated to 38-42 HRC with a tensile strength of 165,000-170,000 psi. Bolts to be certified by lab number. The Contractor shall also axial tension test each bolt furnished to a load of 14,000 pounds without any permanent elongation to further assure quality control.

An outer housing constructed of Type 316L stainless steel shall be installed over the inner barrel, so as to swivel freely until a special key wrench is used. Attachment of the outer housing shall be by a special snap ring and a snap ring groove designed to withstand repeated blows by a sledgehammer without shearing. Snap rings shall be constructed of ST 801 nylon as made by DuPont (or equal) with an average shear strength of 20,000 pounds. The shear failure of any one (1) snap ring tested shall occur at a load not less than 19,000 pounds nor more than 21,000 pounds. A 3% random sample of each production lot of all the snap rings furnished shall be shear tested to failure by a certified testing laboratory and the test report furnished to the City prior to product delivery. The internal activator shall be constructed of Type 410 or Type 416 stainless steel with magnetic properties compatible of the key wrench. The swivel housing shall fit flush with the hydrant forming a weather seal and preventing removal by pry bars and other tools available to vandals.

A special key wrench shall be constructed of an aluminum-magnesium alloy ALMAG 35 (or equal) with handles extending from both sides for easy operation. As cast, tensile strength shall be 38,000-44,000 PSI. The wrench shall incorporate a unique permanent, ceramic magnet, N-35, nickel plated (or equal) which will engage an activator located inside the outer housing. The magnet's inductive forces shall be designed in such a way that no other ordinary magnet can operate the Custodian. Performance must not be affected by local environmental temperature changes and weather conditions. The wrench shall have a skirted design to fit the contours of the swivel housing extending

down approximately 1-1/4" to prevent slippage. The special key wrench will be the only means of opening or

DETAILED SPECIFICATIONS

DESCRIPTION (Cont'd)

closing the hydrant. As an added convenience, the opposite side of the key wrench shall contain a conventional pentagon recess that will work on Chicago standard hydrant caps and operating nuts. An extension on one wrench handle shall be designed to fit the Chicago Style Hydra-Shield nozzle caps. This extension shall include a gripper designed to lock the wrench to the cap and prevent slippage.

Each wrench shall be engraved with a unique serial number, recorded by the manufacturer.

A special puller tool shall be available that will provide removal of the swivel housing in the event that hydrant disassembly is required for maintenance. The puller tool shall be constructed of 4140 Steel Alloy. The puller device shall be of a unique design and will be the only means of removing the swivel housing.

Quotation must include full descriptive literature, drawings, and test documents relative to the performance ability of the vandal resistant device. The manufacturer shall provide a limited warranty covering parts and material for a period of at least one year. In addition, the manufacturer shall provide a separate warranty for vandal resistant devices that are vandalized and made inoperative and returned to the manufacturer.

The Contractor shall if required by the City, furnish a sworn statement that the inspection and all of the specified tests have been made and the results thereof comply with the requirements of this specification. Certified test results shall be provided when requested by the Purchasing Agent or his authorized agent.

EXCEPTIONS

Any deviations from these specifications must be noted on the Proposal Page or Pages attached thereto, with the exact nature of the change outlined in sufficient detail. The reason for which deviations were made should also follow if not self-explanatory. Failure of a bidder to comply with the terms of this paragraph may be cause for rejection.

The City reserves the right to disqualify bids which do not completely meet outlined specifications. The impact of exceptions to the specification will be evaluated by the City in determining its need.

04 MAR -14 PM 2:08

SCOPE

The Contractor shall furnish and deliver f.o.b, City of Chicago, Department of Water Management, Custodian Vandal Resistant Fire Hydrant Caps and Repair Parts as described herein these Detailed Specifications and as listed on the Proposal Pages in accordance with the General and Special Conditions and Detailed Specifications.

Req. 13217

PAGE 1 OF 5

CITY OF CHICAGO ALL PURPOSE REQUISITION FORM

DEPT USE 1		DEPT USE 2	
BUREAU/DIVISION		SHIP TO:	DATE NEEDED
DATE	SHIP CODE	SHIP TO: ATTN.:	
DESCRIBE AND JUSTIFY GOODS OR SERVICES, OR ENTER CATALOG INFORMATION			PV NUMBER
LINE	COMMODITY CODE	SYS CODE	DATE
TERM	FUND	ITEM DESCRIPTION	CATALOG NAME/#
			CATALOG DATE
			CATALOG PAGE
			CATALOG ITEM/PART #
001	3406088140	custodian special H.D. Chicago Model	
		W/steel sleeve "Neo" 2 Drive plug with insect Hydra Shield Part No. Q-SHOCc) or equal	
002	34060881560	Pest center (For custodian special H.D. Chicago Model)	
		No C-SHOCc) N2; Hydra Shield Part No. CP-SHOCc) N2 or equal	
003	3406088070	Beady outer-C For custodian special H.D. Chicago Model	
		No C-SHOCc) N2; Hydra Shield Part No. CP-SHOCc) or equal	
004	3406088561	Plus Square "Neo" 2 Drive C For Custodian Special H.D. Chicago Model, No. C-SHOCc) N2; Hydra Shield part No. DPCN21-SHOCc) or equal	
COMMENTS:			

FY	LINE	FUND	DEPT	ORGN	APPR	ACTV	OBJT	PROJECT	RFTG	DOLLAR AMT.
04	01	200	88	3260	0360	W321	0360			
PAGE TOTAL										
GRAND TOTAL (ALL PAGES)										

BUREAU/DIVISION INFORMATION

SECTION MANAGER/ APFR PREPARED BY _____

ADDRESS _____

DATE _____ PHONE _____

DEPUTY AUTHORIZATION _____

DATE _____ PHONE _____

VENDOR INFORMATION

INVOICE NUMBER(S) _____

COMPANY NAME: **Hydra Shield**

ADDRESS: **3249 W. Story Rd**

Irving, TX 75038

VENDOR CODE: **399250A**

REP/PHONE _____

FOR FINANCE OFFICE USE ONLY			
CONTRACTS REVIEW	DATE	FINANCE DIRECTOR	DATE
EPS PASS 1	DATE	EPS PASS 2	DATE

SOLE SOURCE

CONTRACT AMENDMENT

EMERGENCY REQUEST

7-DAY BID

REFLECTED

CITY OF CHICAGO ALL PURPOSE REQUISITION FORM

DEPT USE 1	DEPT USE 2				
BUREAU/DIVISION		SHIP CODE	SHIP TO:	DATE NEEDED	
			ATTN.:		
COMMODITY CODE		SYS CODE	DESCRIBE AND JUSTIFY GOODS OR SERVICES, OR ENTER CATALOG INFORMATION		
LINE	FUND		CATALOG NAME/#	CATALOG DATE	CATALOG PAGE
TERM			CATALOG ITEM/PART #		
005		3406088660	Ring, shear, 20,000 LB., C For Custodian Special H.D. Chicago Model No. C-SHDCc; Hydra-shield part no. SR-SHDCc) or equal		
006		3406088095	Bolt, Hex H.D.G.R. 9, 5 FN-13 X 1.5 FN C For Custodian special H.D. Chicago Model No. C-SHDCc (N2); Hydra-shield Part No. HB-2 DCC) or equal		
007		3406088760	Sleeve, Steel, Hardened and coated w/ PENS C For Custodian special H.D. Chicago Model No. C-SHDCc (N2); Hydra-shield Part No. SSCc) or equal		

LINE	UNIT PRICE	UNIT OF MEASURE	QUANTITY	TOTAL PRICE
ORDER			RCV'D.	
EA		EA	50	
EA		EA	50	
EA		EA	50	

CHECK OR COMPLETE ALL THAT APPLY	PAGE TOTAL	DOLLAR AMT.		
PARTICIPATING TA #	GRAND TOTAL (ALL PAGES)			

NEW TA OR CONTRACT PURCHASE ORDER DIRECT VOUCHER 7-DAY BID	SOLE SOURCE CONTRACT AMENDMENT EMERGENCY REQUEST REJECTED	FOR FINANCE OFFICE USE ONLY CONTRACTS REVIEW DATE FINANCE DIRECTOR DATE EPS PASS 1 DATE EPS PASS 2 DATE
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VENDOR INFORMATION COMPANY NAME ADDRESS VENDOR CODE REP/PHONE	INVOICE NUMBER(S)
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BUREAU/DIVISION INFORMATION SECTION MANAGER/ APRF PREPARED BY ADDRESS DATE DEPUTY AUTHORIZATION DATE	PHONE PHONE PHONE
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CITY OF CHICAGO ALL PURPOSE REQUISITION FORM

DEPT USE 1		DEPT USE 2	
PG/RX NUMBER		BY NUMBER	

DATE	BUREAU/DIVISION	SHIP CODE	SHIP TO:	DATE NEEDED	DESCRIBE AND JUSTIFY GOODS OR SERVICES, OR ENTER CATALOG INFORMATION				UNIT PRICE	UNIT OF MEASURE	QUANTITY	TOTAL PRICE
LINE	COMMODITY CODE	SYS CODE	ATTN.:	CATALOG NAME/#	CATALOG DATE	CATALOG PAGE	CATALOG ITEM/PART #	UNIT PRICE	UNIT OF MEASURE	ORDER	RCV'D.	TOTAL PRICE
008	3406088810				Washer, Cobalt, (For custodian H.D. Cckicago Model)				EA	10		
009	3406088890				No. C-SHDC(N2); Hydra-Shield Part No. CWCC for wrench combination, "Neo", Hydra-Shield Part No. 250				EA	250		
010	3406088859				SHDW-Combo CC(N) or equal Pulling Tool, Hydra-Shield No. SHOTCo) or equal				EA	50		
011	3406088852				Pulling Tool, Spider-Guard, Hydra-Shield Part No. SHDPTCSG) CC)				EA	10		
012	3406088855				Plus square "Neo" Drive, For custodian SHDC Chicago Model Year Lic Models, Parts No. 2 ECL) Hydra Shield Part No. DPCN)-SHDC) or equal				EA	10		

COMMENTS:

CHECK OR COMPLETE ALL THAT APPLY	NEW TA OR CONTRACT	SOLE SOURCE	CONTRACT AMENDMENT	EMERGENCY REQUEST	7-DAY BID

FOR FINANCE OFFICE USE ONLY

CONTRACTS REVIEW	FINANCE DIRECTOR	DATE	DATE
DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE

VENDOR INFORMATION

COMPANY NAME _____ ADDRESS _____

VENDOR CODE _____ REF/PHONE _____

INVOICE NUMBER(S) _____

BUREAU/DIVISION INFORMATION

SECTION MANAGER/ APFR PREPARED BY _____

ADDRESS _____ PHONE _____

DATE _____

DEPUTY AUTHORIZATION _____

DATE _____ PHONE _____

CITY OF CHICAGO ALL PURPOSE REQUISITION FORM

PAGE 4 OF 5

DEPT USE 1		DEPT USE 2	
DATE	BUREAU/DIVISION	SHIP CODE	SHIP TO: ATTN.:
LINE	COMMODITY CODE	SYS CODE	DATE NEEDED
TERM	FUND	ITEM DESCRIPTION	DESCRIBE AND JUSTIFY GOODS OR SERVICES, OR ENTER CATALOG INFORMATION
			CATALOG NAME# CATALOG DATE CATALOG PAGE CATALOG ITEM/PART #
013	3406088090		Bolt, Hex HD. GR. 9, .5 IN - 1.3 X 1.5 IN C For Custodian's SHD Chicago Model earlier models parts NO. 2 ECL1' Hydra-Shield Part No. HB-11.5CC) or equal
014	3406088750		Convert any existing Model Custodian to New Chicago Part No. SHD CC1N2; return Old parts For Reworked UNIT, Hydra-Shield-Part, New RW-SHDCC1NR.
015	3406088670		Ring and Spool, Retainers, Hydra-Shield No. RSR(c) or equal
COMMENTS:			

CHECK OR COMPLETE ALL THAT APPLY	NEW TA OR CONTRACT	SOLE SOURCE	PARTICIPATING TA #

<p>FOR FINANCE OFFICE USE ONLY</p> <p>CONTRACTS REVIEW</p> <p>DATE</p> <p>FINANCE DIRECTOR</p> <p>DATE</p> <p>RESPONSE</p> <p>DATE</p>	<p>VENDOR INFORMATION</p> <p>COMPANY NAME</p> <p>ADDRESS</p> <p>VENDOR CODE</p> <p>REP/PHONE</p>	<p>INVOICE NUMBER(S)</p> <p>SECTION MANAGER/ APPR PREPARED BY</p> <p>ADDRESS</p> <p>DATE</p> <p>PHONE</p> <p>DEPUTY AUTHORIZATION</p> <p>DATE</p> <p>PHONE</p>	<p>BUREAU/DIVISION INFORMATION</p>
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CITY OF CHICAGO ALL PURPOSE REQUISITION FORM

PAGE 5 OF 5

DEPT USE 1	DEPT USE 2		
BUREAU/DIVISION	SHIP CODE	SHIP TO:	DATE NEEDED
		ATTN.:	
LINE	COMMODITY CODE	SYS CODE	ITEM DESCRIPTION
TERM	FUND		
016	3406010016		H.D. Custodian Puller Tool Bolt 1000/1205-SAD
017	3406010020		H.D. Custodian Puller Tool Insert 1000/1206

LINE	TERM	FUND	COMMODITY CODE	SYS CODE	ITEM DESCRIPTION	CATALOG NAME/#	CATALOG DATE	CATALOG PAGE	CATALOG ITEM/PART #	UNIT PRICE	UNIT OF MEASURE	QUANTITY		TOTAL PRICE
												ORDER	RCV'D.	
											EA	120		
											EA	126		

COMMENTS:

FY	LINE	FUND	DEPT	ORGN	APPR	ACTV	OBJT	PROJECT	RFTS	DOLLAR AMT.

CHECK OR COMPLETE ALL THAT APPLY

PARTICIPATING TA #

NEW TA OR CONTRACT	SOLE SOURCE	CONTRACTS REVIEW	FINANCE DIRECTOR

PURCHASE ORDER	CONTRACT AMENDMENT	EMERGENCY REQUEST	7-DAY BID

FOR FINANCE OFFICE USE ONLY	DATE	DATE	DATE

PAGE TOTAL	GRAND TOTAL (ALL PAGES)

BUREAU/DIVISION INFORMATION

SECTION MANAGER/ APRF PREPARED BY _____

ADDRESS _____ PHONE _____

DATE _____

DEPUTY AUTHORIZATION _____

DATE _____ PHONE _____

VENDOR INFORMATION

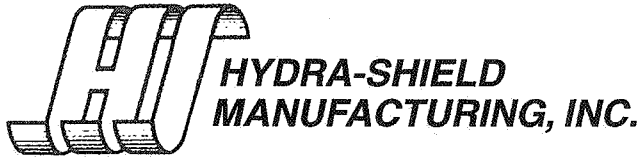
COMPANY NAME _____

ADDRESS _____

VENDOR CODE _____

REP/PHONE _____

INVOICE NUMBER(S)



April 21, 2004

City of Chicago
Department of Water
Department of Purchases
121 North LaSalle Street
Chicago, IL 60602

History:

Hydra-Shield Manufacturing, Inc. is a small, family owned (2/3 women) company located in Irving, TX with seven (7) employees. Chicago has been an important customer to us and we have always strived to provide the very best products and service to this great City. We consider this meeting a mutually beneficial opportunity for both Hydra-Shield and Chicago.

For over twenty (20) years, Hydra-Shield Manufacturing, Inc. has provided the City of Chicago protection of its fire hydrants with the Custodian® lock. We specifically developed the heavy-duty Custodian® for Chicago's unique and vulnerable hydrant style along with several modifications to make the lock more effective. We estimate over \$500,000 has been invested by Hydra-Shield over the years to develop the most effective lock just for Chicago. Each time Chicago has experienced problems, Hydra-Shield has provided expertise to solve these problems and we will do our utmost to continue providing exemplary service to the City.

Hydra-Shield has revered working relationships with several City employees and though many have retired or are in the process of retiring, it is important for the City to pass down the understanding of how much our lock can save the City in terms of lives and dollars.

Working together, Hydra-Shield and Chicago have accomplished a great deal in preventing water loss, overtime expense in shutting off hydrants, the dangers of water running in the street, low pressure from open hydrants which hinders fire protection, and possible contamination of the City's potable water system. The Custodian® has saved the City millions of dollars and both Hydra-Shield and the City have a tremendous investment in the hydrant protection program using the Custodian®. According to the Water Department, the City paid \$68 in overtime costs for open hydrants in 2002 as opposed to a yearly average overtime cost of \$435,000 from 1993 to 2001. In 1995, the

City paid \$2,398,000 in overtime shutting down open hydrants! Based on figures from a report issued by the Department of Water Management, 3,000 open hydrants in July, 1999 cost the City an extra \$21,664 per day in chemicals, electricity, and fuel. The amount of water (1,677,000,000 gallons) literally going down the drain was seventy percent (70%) more than the average (1,000,000,000 gallons). One open hydrant releases approximately 1,000 gallons per minute or 60,000 gallons per hour at 30 to 40 psi.

We approximate that 35,000 of the 47,000 hydrants in the City are not protected by the Custodian®. Variables such as expanding areas and population movement must be taken into consideration to determine where the locks should be installed. We understand there was no installation of the Custodian® in 2003. Because several departments, Water, Fire, and Police, are affected by open hydrants, it would be cost effective for the City to install the lock on all its hydrants. An article on August 22, 2003 in the Chicago Sun Times describes how two children were injured by an automobile while playing in an open hydrant and how the driver who got out to check on the children, was beaten by a crowd that later set fire to his car. Without a doubt, our products could have helped prevent Chicago citizens and valued city workers from loss of life, limb, and property.

Sole Source:

Hydra-Shield Manufacturing, Inc. holds and owns the patent for the Custodian® hydrant operating nut locking system, Number 5,596,893. Hydra-Shield also owns, as part of the patented system, the "key wrench" which activates the system, the "puller tool" for removal of the outer body, and the component parts comprising the system. We control both the manufacture and marketing of these products. Hydra-Shield is the sole-source provider of these products.

Waiver:

We request a 100% waiver from the MBE/WBE requirements for this Contract and any extensions. As layoffs and early retirement run rampant in the City, it is imperative that the City look at the bottom line. If the responsible parties count the dollars that will be saved by granting a full waiver, the City and its taxpayers can save potentially millions of dollars and more importantly, lives. The following factors should be taken into consideration when making this decision:

- Cost of treated water from Lake Michigan
- Cost of wasted water from an open hydrant
- Cost of manpower to shut off a hydrant
- Overtime cost of manpower
- Medical costs of injury to city workers attacked by vandals
- Cost of damaged hydrants
- Cost of water main breaks due to water pressure fluctuations caused by turning hydrants on and off too quickly (by vandals)

- Cost of flooded streets and basements and hazardous driving conditions
- Cost of low pressure to hospitals, households, industries, and fire departments
- Safety of children playing in wet streets
- Value of human life and property
- Loss of fire fighting capability due to open hydrants
- Hydrants secure from vandals and terrorists

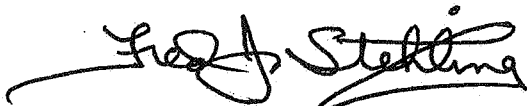
The City stands to save in excess of \$686,625 over five (5) years based on past purchasing history if a full waiver is granted. Instead of inflating our price by 16.9% and passing this cost on to the City, the City could lock down 2,112 more hydrants over five (5) years or 422 more hydrants each year. Just as we strive to deliver our products at the best possible price, the City should consider its responsibility to the safety of its citizens and also their tax dollars.

The City of Chicago's MBE/WBE policy and program is not applicable to sole-source, out-of-state, patented, manufactured goods which come from a manufacturer 1,000 miles distant from Chicago. Our products are proprietary and patented. The very nature of our product does not lend itself to being shipped out of state for a specific process, then shipped back to Houston, then shipped to Chicago – at least not at reasonable prices to the City.

Summary:

Hydra-Shield owns the patent for a product that can protect Chicago hydrants and save the City dollars and lives. We respectfully request a waiver from the MBE/WBE/DBE requirements by the City of Chicago. By granting the waivers, the City will pay a reasonable, not inflated, price for the most effective lock available for its hydrants, the Custodian®.

Sincerely,



Fred J. Stehling
President/CEO

[Back to regular view](#)

<http://www.suntimes.com/output/news/cst-nws-wet22.html>

[Print this page](#)

Tempers flare on summer's hottest day; driver beaten

August 22, 2003

BY ANA MENDIETA Staff Reporter

The heat that seared the Chicago area Thursday helped knock out power to some residents and was an indirect factor in an auto accident in which two children were injured while playing in an open fire hydrant.

Reaching 95 degrees, Thursday was the hottest day of the year, according to the National Weather Service, which expects milder conditions today and the rest of the week.

More than 22,000 megawatts of power were used Thursday in northern Illinois, a record, said ComEd spokesman Tim Lindberg.

Late in the evening, 5,200 customers were without power because of the strain placed on the system by high temperatures and the resulting high demand for power, Lindberg said. A total of 240 ComEd crews were working to restore power.

There also was a "momentary flicker" of power around 10:15 p.m. that dimmed lights for a few seconds downtown.

Nearly 200 fire hydrants were reported open as residents sought relief from the heat, but that was far fewer than in previous years because of the custodian caps placed on hydrants to prevent their forced opening, said Tom LaPorte, spokesman for the city's Water Management Department.

Two girls, ages 3 and 5, were playing at a fire hydrant in the 500 block of East 63rd Street about 6 p.m. when they were struck by a vehicle, police said.

The driver got out, approached the girls to check on them and was promptly beaten by a crowd that later set fire to his car, said Chicago police spokeswoman Alice Casanova. The driver was treated at South Shore Hospital, where he was listed in good condition, she said. The girls also had minor injuries.

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Locks on fire hydrants sharply cut water use

Device helps city save tens of millions of gallons daily

By GARY WISBY
ENVIRONMENT REPORTER

Just try to pry open a fire hydrant in Chicago when the "custodian" is attached to it.

The foolproof locking device is one way the city has slashed water consumption by 150 million gallons a day, a 19 percent cut. That's enough water to take care of the daily needs of Zion or Libertyville or Homewood.

Also responsible for that ocean of saved water is an ambitious program of water main replacement. Since the early 1990s, when 10 to 15 miles of pipe was replaced each year, the total has risen to 42 miles a year.

And considering there are 4,230 miles of pipe in the system—and improvements are good for 100 years—that means the Water Department is staying about even.

The achievement is even more impressive when you consider that Chicago's population has grown by 4 percent in the last decade.

An underground leak-detection system is based on a computer that "hears" leaks.

"When your toilet is running, the water traveling through the pipes makes a noise," said Bob Butterworth, deputy water commissioner.

The state of Illinois is saving water, too. In the late '70s and early '80s, wells were pulling water out of the deep aquifer three times faster than it was being replenished. Today, the rate is about even.

Engineers use newer technology, fewer joints and copper or plastic pipe instead of lead.

Multifamily developments use less water than single-family homes because people aren't watering yards or gardens, and they clean their vehicles at a car wash instead of in the driveway.

But swelling population is straining water resources, especially in west suburban Kane County. The county is expected to grow 40

percent by 2020, said Dennis Dreher, director of natural resources for the Northeastern Illinois Planning Commission.

Kane draws its water from wells and from the Fox River. At low flow, 70 percent of the Fox is reprocessed water, returned to the river by sewage-treatment plants.

Illinois is the only state with a law limiting water loss. That limit is 8 percent.

Meanwhile, the Illinois Environmental Protection Agency announced last week that 414 rivers, lakes and streams are "impaired"—that is, dangerous to drink or swim in and unhealthy for fish.

"The news isn't all bad," said Jack Darin, director of the Sierra Club's Illinois chapter. In the north suburbs, one of the three branches of the Chicago is not impaired. In the south suburbs, Thorn Creek and Deer Creek are listed, but not other streams.

Darin was skeptical of the EPA's goal of cleaning up 30 to 35 bodies of water a year. EPA aims to finish the cleanup by 2017.

CPAC PROJECT CHECKLIST

For CPAC Team Use Only	
Date Received:	_____
Date Returned:	_____
Date Accepted:	_____

IMPORTANT: PLEASE READ AND FOLLOW THE INSTRUCTIONS FOR COMPLETING THE PROJECT CHECKLIST AND CONTACT THE APPROPRIATE TEAM LEADER IF YOU HAVE ANY FURTHER QUESTIONS. ALL INFORMATION SHOULD BE COMPLETED INCLUDING THE SUPPLEMENTAL CHECKLIST REQUIRED BY THE SPECIFIC CPAC TEAM. ATTACH ALL REQUIRED MATERIALS AND SUBMIT FOR HANDLING TO THE DEPARTMENT OF PROCUREMENT SERVICES, ROOM 403, CITY HALL, 121 N. LASALLE STREET, CHICAGO, ILLINOIS 60602.

PROJECT
 Date: March 8, 2004 Contact Person: Kevin White
 ID No. (Spec, RX, Project): _____ Tel: 744-3010 Fax: _____ E-mail: _____
 Department: Water Management Project Manager: _____
 Bureau: Operations & Distribution Tel: _____ Fax: _____ E-mail: _____
 Contract No. (if known): _____ Estimated Value \$ 3,300,000.00
 Project Title/Description: Fire Hydrants, Custodian Vandal Resistant Units and Parts

SCOPE STATEMENT

Attached is a detailed scope of services and/or specification

IMPORTANT: THIS IS A CRITICAL PORTION OF YOUR SUBMITTAL. IN ORDER FOR A TEAM TO ACCEPT YOUR SUBMITTAL YOU MUST COMPLETE ALL TEAM SPECIFIC SCOPE REQUIREMENTS AS SET FORTH IN THE SUPPLEMENTAL CHECKLIST FOR THAT TEAM.

The following is a general description of what would be included in a Scope of Services or Specification:
 A clear description of all anticipated services and products, including: time frame for completion, special qualifications of prospective vendors, special requirements or needs of the project, locations, anticipated participating user departments, citation of any applicable City ordinance or state/federal regulation or statute..

TYPE OF PROCUREMENT REQUESTED (check all that apply)

Competitive Bid RFQ/RFP/RFS/RFI Sole Source** Term Agreement One Shot
 Mod/Amendment Time Extension Additional Funding Small Order S/O Emergency

FORMS

F-25* (add line item) F-10* (special approvals) SSRB** (sole source approval)
 F-26* (new term agreement) RX (one-shot requisition) OBM Authorization
 F-27* (time extension) APRF (all purpose request form)

* Additional F-forms may be required-refer to attached list

** Sole source requests must include vendor quotes/proposal and MBE/WBE compliance requirements

FUNDING

City: Corporate Bond Enterprise Grant* Other _____
 State: IDOT/Transit IDOT/Highway Grant* Other _____
 Federal: FHWA FTA FAA Grant* Other _____

LINE	FY	FUND	DEPT	ORGN	APPR	ACTV	OBJT	PROJECT	RPTG	DOLLAR AMOUNT
001	2004	200	88	3260	0360	W321	0360			\$3,300,000.00

Total: \$ 3,300,000.00

* Attach copy of any applicable grant agreement terms and conditions

TIME FRAME

Date Needed: 5/15/04 Requested Contract Term (y/m/d): 5 years

PRE BID/SUBMITTAL REQUIREMENTS

Requesting Pre Bid/Submittal Conference? Yes No Requesting Conference be Mandatory? Yes No
 Requesting Site Visit? Yes No Requesting Site Visit be Mandatory? Yes No



City of Chicago
Richard M. Daley, Mayor
Department of Water Management

Richard A. Rice
Commissioner
Bureau of Administrative Support

Julie Hernandez-Tomlin
Deputy Commissioner

Jardine Water Purification Plant
1000 East Ohio Street
Chicago, Illinois 60611
(312) 744-7641
(312) 744-5941 (FAX)

www.cityofchicago.org/
watermanagement

April 22, 2004

Mr. Eric J. Griggs
Chief Procurement Officer
Procurement Services
Room 403 City Hall
121 N. LaSalle Street
Chicago, Illinois 60602

Attn: Mr. Glenn Bennett

Re: Custodians Vandal
Proof Devices
Hydra-Shield Mfg.

Dear Mr. Griggs:

We respectfully ask that the above captioned requirement be processed as a Non-Statd Goals contract. Hydra-Shield Mfg. is located in Irving, Texas. Consequently, Hydra-Shield, in conjunction with this department, have not been able to identify direct or indirect participation in the City's MBE and WBE requirement. This company has ownership of the patents for these devices and they do not have any representatives for manufacturing, sales, and/or distribution of these vandal proof devices.

Since orders are placed with this company either three or four times a year, the transportation cost from Texas to Chicago averages 1% of the contract's yearly value.

The raw materials used in the manufacture of these custodians are purchased locally. According to the documentation presented to this department, the metals market has doubled and their sources have notified them, Hydra-Shield, that prices are changing monthly.

There are approximately seven (7) employees utilized in the manufacture of these custodians and everything is done in-house.

We must solicit your assistance and cooperation in expediting this as a Non-Statd Goals contract before the warm weather arrives.

Very truly yours,

Richard A. Rice
Commissioner

Originated by:

Eugene J. Smith
Contract Coordinator

RAR:ejs





City of Chicago
 Richard M. Daley, Mayor
 Department of Water Management
 Richard A. Rice
 Commissioner
 Bureau of Administrative Support
 Leticia Hernandez-Tomlin
 Deputy Commissioner
 Wastewater Treatment Plant
 100 East Ohio Street
 Chicago, Illinois 60611
 (312) 744-7641
 (312) 744-5941 (FAX)
www.cityofchicago.org/watermanagement

April 12, 2004

Mr. Eric J. Griggs
 Chief Procurement Officer
 Procurement Services
 Room 403 City Hall
 121 N. LaSalle Street
 Chicago, Illinois 60602

ATTN: Mr. Glenn Bennett

Re: Custodians Vandal
 Proof Devices
 Hydra-Shield Mfg.

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Very truly yours,

Richard A. Rice
 Commissioner

RAR:ejjs

