

UNITED STATES GOVERNMENT
National Labor Relations Board
Office of Inspector General



Memorandum

August 18, 2004

To: David B. Parker
Acting Chief Information Officer

From: Jane E. Altenhofen
Inspector General

Subject: Inspection Report No. OIG-INS-33-04-05: Inspection of Software Licensing Agreements.

The objective of this review was to determine the adequacy of controls over the acquisition of computer software and compliance with licensing agreements. We reviewed procurement controls at NLRB Headquarters, where procurement is centrally managed, and compliance controls at both Headquarters and Regional Offices.

Information Technology Branch (ITB) procurement files did not include justifications for purchasing software or the number of licenses acquired, and in 2004 the Agency purchased 200 more Microsoft Windows and Office licenses than their identified need. This cost the Agency an estimated \$43,618. The Agency renewed licenses for this software to support 2,500 NLRB computers even though they had earlier determined that the support requirement should be reduced to 2,300 computers. Our calculations, which were agreed to by ITB, justified renewing only 2,200 licenses for this Microsoft software and the other standard software, which would save the Agency an additional \$28,400.

Unauthorized software was found on 45 of the 90 Agency computers tested and controls to prevent installation of unauthorized software were not functioning on some computers. Also, the computers of all ITB and ITB on-site support contractors did not have controls to prevent the installation of unauthorized software even though not all personnel have job descriptions that necessitate them to load software. Some computers tested contained both old and new versions of the same software.

SCOPE

We interviewed NLRB staff in ITB to gain an understanding of controls over software procurement and license compliance. We interviewed the Procurement and Facilities Branch Contract and Procurement Section Chief to gain an understanding of

their role in ITB procurements. We reviewed software procurement files to assess effectiveness of controls. We reviewed the ITB software inventory listing, support for specific listed license agreements, and contacted a Microsoft Corporation representative to obtain an understanding of compliance requirements. We judgmentally selected and tested 50 computers at Headquarters, and 10 computers at each of four Regional Offices visited to assess the effectiveness of license compliance controls. Testing included creating an inventory of the software on each computer and comparing it to the Agency's inventory of authorized software. We also tested whether controls to prohibit loading programs from floppy disks were functioning as intended. The Regional Offices that we visited were - Region 3 (Buffalo), Region 9 (Cincinnati), Region 17 (Kansas City), and Region 19 (Seattle).

This inspection was conducted between April and June 2004 in accordance with Quality Standards for Inspections.

BACKGROUND

Software is copyrighted and its use is governed by copyright law and each specific license agreement. License agreements generally provide for the use or maintenance on up to a specified number of computers, for a defined time period. Noncompliance with an agreement could potentially subject NLRB to an unbudgeted payment to the vendor at high per license rates, civil or criminal penalties, or cancellation of the agreement.

NLRB's software is managed by ITB, under the direction of the Chief Information Officer. The inventory of software managed includes about 200 different titles or versions. NLRB's license for each title or version may provide for software use on a single computer or on as many as 2,500. The software is installed on NLRB computers at Headquarters and all 51 Regional, Subregional, and Resident Offices.

NLRB spends about \$1 million per year for computer software use or maintenance licenses. The majority of this cost is for the suite of software needed to operate workstation and laptop computers for NLRB employees and on-site contractors. Additional specialized software is needed by some employees and is also required to maintain the security of NLRB's computers and information.

ACQUISITION OF COMPUTER SOFTWARE

Justification For Procurement

ITB procurement files did not include justifications for purchasing software or the number of licenses acquired. The lack of justifications resulted in the Agency purchasing more of some software than was necessary to support Agency operations, therefore

incurring unnecessary cost. Software purchases without justification for the software or the number of licenses included:

- 2,500 licenses renewed for Microsoft Windows and Office procured on 1/30/04, at a cost of \$545,225, although ITB's estimated Standard Image license requirement was 2,300.
- 90 licenses for Microsoft Project procured 1/10 – 3/22/02 at a cost of \$20,597, without justification for the number purchased. In addition, ITB could not identify the NLRB computers on which the software was installed.
- 250 licenses renewed and 1 site license for Summation Blaze procured 10/16/03, at a cost of \$17,500 without justification for the number purchased. ITB was unable to identify which computers had software or how often it was used.
- 40 licenses for Microsoft FrontPage procured 3/8/02 – 4/14/03, at a cost of \$4,113. ITB Procurement files contained a justification related to 10 other licenses for computers in the ITB Training Room.

Office of Management and Budget (OMB) Circular No. A-123, Management Accountability and Control, states, "Management controls must provide reasonable assurance that assets are safeguarded against waste, loss, unauthorized use, and misappropriation." The NLRB Administrative Policies and Procedures Manual requires that procurement documentation include a complete justification and that the justification be reviewed to ensure it is sufficient to support the expense as necessary. These documents will serve as our procurement criteria throughout the report.

The procurement files lack justifications, because the ITB Contracting Officer did not obtain supporting information from the ITB Desktop Manager or the individuals and organizations that requested software. ITB procures software based upon calls to the Help Desk and renews license agreements based upon a general awareness that some NLRB personnel still use the software. The Desktop Manager reviews the requests for software and sends an e-mail to the Chief Information Officer requesting approval and funds for the purchase. However, while procurement files reviewed did contain proper approvals, they did not include justifications. ITB does not know how many personnel use any specific software or how often it was used. As a result, ITB could be purchasing or renewing licenses for software that is not required to support operations, using funds that could be put to better use by the Agency.

Number of Standard Software Image Licenses

The Agency purchased 100 more Standard Image Software licenses than was necessary which cost the Agency an estimated \$28,400. The number of Standard Image licenses procured by ITB for NLRB's computers was based upon the number of Agency e-mail accounts for individuals, plus a guess factor for computers without an assigned

user, instead of the actual number of Agency computers that need software. Using the e-mail account methodology resulted in NLRB purchasing more licenses than needed.

ITB procures a standard suite of software for installation on all NLRB personnel computers. This is known as a Standard Image. The Standard Image is intended to meet the basic needs of all employees and on-site contractor personnel. ITB currently uses 2,300 as the number of licenses needed for each software title in the Standard Image.

The ITB Customer Support Section Chief determined that 2,300 licenses were needed by taking the number of Agency active Outlook e-mail accounts, totaling 2,200, and adding 100 to allow for computers not assigned to individuals, such as computers in the ITB Training Room, Library, Help Desk, and visitor/temporary/shared employee workstations. The computation was not documented.

We compared e-mail accounts with ITB computer inventory records and determined that personnel with e-mail accounts do not necessarily have an NLRB computer. We obtained data from the Human Resources Branch, showing that NLRB had 1,886 full time and 92 part-time employees, for a total of 1,978 personnel, as of June 8, 2004. Security Branch records showed a total of 64 badges issued for contractor employees, as of June 18, 2004, but only some of these individuals have NLRB computers. This information indicates that NLRB needs less than 2,042 (1,978 + 64) licenses for employees and contractors, plus additional licenses for "functional" computers in the Training Room (13), Library (7), and Help Desk (11), or about 2,073 total licenses. Additional licenses may also be needed to allow for potential changes in the number of employees and temporary use/shared/visitor workstations. In total, the requirement appears close to 2,100, 200 less than the 2,300 purchased for FY 2003.

According to the Customer Support Section Chief, she used the e-mail account methodology because it was an easy way to develop a rough number. ITB had recently taken the initiative, in response to a budget reduction, to look at the requirements number and reduced it in 2003 from 2,500 to 2,300. ITB also purchased software to establish and maintain a Headquarters Equipment Asset Tracking (HEAT) database, which includes NLRB's computers and equipment. However, the HEAT database was not used as the source for determining the Agency software requirement.

In response to our questions about the determination of the Standard Image requirement, the ITB Property Manager performed a HEAT database query to assess how many computers require the standard software suite. The query showed 1,974 computers assigned to personnel and another 111 functional computers, or a total requirement of 2,085. However, the Property Manager stated that some of the computers in the database assigned to "Office" or "Vacant" could also be functional computers. ITB does not know the actual use of the unassigned computers, if any.

The cost of the Standard Image per computer each year is approximately:

Software Title	Cost
Adobe Acrobat Reader	\$ 0
Adobe Capture/FormFlow	14
Micromedia Flash Player	0
Microsoft Office/Windows	218
Microsoft Windows Media Player	0
Novell Netware/Zenworks	35
Passlogix v-GO Single Sign-on	6
Symantec Antivirus	11
WinZip	0
Annual Cost Per Computer	\$284

NLRB could save approximately \$284 per computer, per year, by performing a detailed analysis of actual computers that need a Standard Image and reducing the procurement requirement to that level. The Customer Support Section Chief, based upon our information and other information that the Chief developed, agreed that the software requirement could be reduced to 2,200 licenses. This reduction would more reasonably align the software procurement with NLRB's need to support less than 1,900 employees. This change would result in reducing the NLRB's software license cost by an estimated \$28,400 (\$284 X 100 computers) per year.

Renewal of Microsoft Windows and Office Software License

ITB renewed a \$545,225 license agreement for Microsoft Windows and Office software based upon a requirement to support 2,500 NLRB computers. However, ITB had earlier determined that the support requirement should be reduced to 2,300 computers. Renewal of the agreement resulted in an unnecessary expense to the Agency.

ITB renewed the 2,500-computer support license for Windows/Office on January 30, 2004, using an option on a 2002 agreement. On August 27, 2003, ITB renewed the license for Symantec Antivirus software based upon requirement for 2,300 licenses. Also, on February 24, 2004, ITB renewed the license for Adobe Capture/Forms Flow on the basis of a requirement for 2,300 licenses.

The Customer Support Section Chief authorized renewal of the license based upon support for 2,500 computers, because of plans to renegotiate and consolidate the agreement together with agreements for other Microsoft products early in 2004.

NLRB paid Microsoft approximately \$218 per license under the option. Because the agreement provides for 2,500 licenses, instead of the 2,300 requirement, NLRB paid \$43,618 (\$218 X 200) more than necessary.

Timing of License Renewals

ITB renewed five software license agreements after, instead of before, they expired and the Agency continued to use the software. In each instance the software was renewed within 30 days of the expiration date. Under the agreements NLRB may not have rights to continued use or availability of support once a license expires. Delayed renewal resulted in NLRB noncompliance with agreements and could result in the unavailability of needed support.

License agreements provide for Agency use or maintenance of software for a specified time period. Maintenance agreements provide the Agency with updates to the software to keep it compatible with other software, to allow it to continue to effectively function for the intended purpose, and to provide for company support when operating issues arise. At the end of the agreement period, the Agency has no right to continue to receive maintenance support.

These agreements were not renewed on time due to the lack of an ITB tracking system to alert the Configuration Manager before licenses expire, due to incomplete software license records needed to allow the Software Manager to determine the renewal date, or due to inadequate follow up or follow through by the Configuration Manager, the Customer Support Section Chief or the Contracting Officer to ensure renewal was completed before the existing agreement expired. The late renewal places NLRB at risk of operating without critical software support.

In response to a suggestion made in our draft report, management stated that they changed their process for identifying software licenses to be renewed. The process includes using the database of software to create monthly reports identifying licenses that will expire within the next 2 months. They claim that this will provide them ample time to have funds approved and renewals purchased.

COMPLIANCE WITH LICENSING AGREEMENTS

Software Installed on Computers

Unauthorized software was found on 45 Agency computers. A detailed schedule of unauthorized software is included as an appendix to this report. NLRB has policies and procedures to provide compliance with license agreements and ensure installation of only authorized software, but these controls were not functioning. The control weaknesses identified allowed installation of unauthorized software, potentially resulting in noncompliance with license agreements, and risks to Agency security and operations.

Below is a summary of computers with unauthorized software.

UNAUTHORIZED SOFTWARE ON NLRB COMPUTERS

	Headquarters	Region 3	Region 9	Region 17	Region 19	Total
Software Titles	58	5	14	19	3	99
Computers	26	2	10	5	2	45

Installation Controls Ineffective

ITB purchased and installed specialized software on NLRB computers to prevent user installation of unauthorized software. This software, however, did not function on seven computers. The location and number of computers that did not prevent users from directly installing unauthorized software are summarized in the following table.

COMPUTERS WITH INEFFECTIVE INSTALLATION CONTROLS

Location	Number of Computers	Unauthorized Software
Headquarters	4	3
Region 3	1	0
Region 9	0	0
Region 17	2	2
Region 19	Not Tested	Not Tested
Total	7	5

NLRB Administrative Policy Circular (APC) 99-09, Software and Configuration Changes, states that only ITB personnel are authorized to install software on NLRB computers. Authorized software consists of computer programs that ITB has approved for use on NLRB computers. ITB has company licenses or approvals to use these software programs. In addition, ITB has evaluated security and operational risks, and appropriateness of the software for use on NLRB computers. ITB has purchased and installed Zenworks software at a cost of more than \$25,000 per year to prevent user installation of unauthorized software on NLRB computers.

According to ITB personnel, unauthorized software may be on NLRB computers due to three primary reasons. First, Agency personnel are not adhering to the APC. Second, Zenworks does not prevent personnel from downloading software from the Internet. Third, Zenworks may not have been installed properly, or was deactivated. ITB does not have the capability to remotely determine if unauthorized software is being installed or Zenworks is functioning properly. ITB stated that regular manual review of the effectiveness of controls on each NLRB computer by ITB personnel is not cost-effective. Although the Customer Support Section Chief has plans to implement a software inventory management tool that will provide regular information on what programs are installed on each NLRB computer, the tool has not been installed.

The existence of unauthorized software in the large volume and on the number of computers found, and finding computers with non-functioning install controls at three of four locations tested, indicates control weakness in the ITB software management program. The weakness could potentially result in noncompliance with license

agreements, subjecting the agency to added costs and penalties. The weakness could also subject the Agency to security and operational risks, potentially resulting in a computer, server or network being taken out of operation. The unauthorized software may also consume vital space on computer hard drives, impacting the ability of the computer to efficiently perform operational tasks. The weakness could also facilitate the use of NLRB computers for non-business purposes. Finally, the weakness could result in more calls to the ITB Help Desk to resolve software conflict and computer operation issues, potentially increasing support contract costs.

OTHER MATTERS

Different Versions of Software

Some computers tested contained both old and new versions of the same software. While most computers had the current Standard Image, some were still running older versions of certain Standard Image software. Two computers had the very latest version of some software, which is not yet part of the Standard Image. Multiple versions of the Standard Image software on computers included:

- Excel 95 and Excel 2000 (2000 standard)
- Outlook version 6.0 and 9.0 (9.0 standard)
- Adobe Acrobat Reader 4.0, 5.0, or 6.0 (6.0 standard)
- Media Player 6.4, 7.0, or 9.0 (7.0 standard)
- Internet Explorer 5.5 or 6.0 (6.0 standard)
- Novell Client for Windows 4.8, 4.81, or 4.83 (4.83 standard)
- Passlogix v-GO not installed on five computers
- Word 2000 9.0 or 9.0 SR-1, SR-2, or SR-3
- Windows 2000, with Hotfix KB823980, Hotfix KB824146, SP3, or SP4

ITB's policy is to provide all employees with a Standard Image, which is intended to help ensure compatibility and availability of support for all NLRB computers. ITB personnel advised that older versions of software might not always have been removed when new versions were installed. They also stated that employees may have downloaded newer software versions from the Internet and that it is difficult to maintain the same version of software on all computers, due to the large number and location dispersion of computers and limited ITB and Regional Office staff involved. ITB has initiated corrective action by developing a script that allows them to identify software installed on each computer.

Maintaining old software on a computer after installing an updated Standard Image version unnecessarily consumes hard drive space. In some cases a computer may have such limited free space that old software could potentially prevent the computer user from loading or storing needed data or programs. Running a different version of software on a computer could also result in compatibility issues. Incompatibility could

result in a file transferred from one person to another not functioning properly or being unusable. An older version of software may no longer be supported by the vendor, potentially resulting in lost data if functional issues develop. The use of an older version can also result in NLRB paying for a newer version, but not receiving the benefits.

Software Installation Controls

The computers of all ITB and ITB on-site support contractors do not have controls to prevent the installation of unauthorized software. Although ITB installed Zenworks on all other NLRB computers in 2001 to control the installation of software on computers, the ITB Chief did not place the control on ITB and its support contractors' computers. The control was not installed on ITB computers on the basis that all personnel needed to perform research and testing of new software or to assist in troubleshooting computer and system operating anomalies. However, ITB management, administrative, and other support personnel who are not involved in day to day testing and troubleshooting activities should have Zenworks installed. Not including this software on these workstations creates an additional unjustified risk that unauthorized software could be installed, resulting in operating issues with that computer, potentially other Agency computers, or the NLRB network.

HEAT Database

The Acting Chief Information Officer stated that ITB has made great efforts to improve its management of software licenses to ensure that the correct number of licenses are purchased in a cost effective and timely manner. The NLRB computer inventory maintained in the ITB HEAT database, however, contained several errors related to a seven-person office. The errors raise question as to the reliability and usefulness of the database. Errors noted included:

- One employee was recorded as the assigned user of computers on both the Headquarters 9th floor and 10th floor. The employee has not worked on the 10th floor for 2 years.
- One employee is the assigned user for three computers, but only has one.
- One employee not in the database was assigned a computer 1 ½ years ago.
- Barcodes numbers on office computers did not agree with the database.
- Two computers were recorded for a support contractors' office, but only one computer was in the room for 6 months.

NLRB paid \$7,627 for the maintenance license for HEAT in 2004, and invested substantial time developing the database. If the data in HEAT is to be used to manage, ITB needs to ensure that the data in the database is correct.

SUGGESTIONS

We suggest that the Acting Chief Information Officer:

1. Prepare justifications supporting each software purchase and include them in procurement files.
2. Determine the number of Standard Image software licenses to be procured based upon the number of computers with an identified need, and document the determination in the procurement files.
3. Implement a process for removal of existing unauthorized software and enhance controls to prevent installation of unauthorized software on NLRB computers.
4. Establish a process to ensure uniformity of versions of software installed on NLRB computers.
5. Evaluate the need for every ITB staff member and support contractor to have the ability to directly install software on the NLRB computer assigned to them.

Management Response

The Acting Chief Information Officer stressed that ITB independently was in the process of evaluating the Agency's licensing agreements and ITB's process and procedures for managing software licenses. He also noted that ITB was in the midst of implementing a Desktop Management Program that should implement several of the suggestions. Management generally agreed with the findings and suggestions made in our draft report and claimed to have implemented corrective action for one suggestion.

cc: Board
General Counsel

APPENDIX

UNAUTHORIZED SOFTWARE ON NLRB COMPUTERS

Item Count	SOFTWARE TITLE	Headquarters	Region 3	Region 9	Region 17	Region 19	Total
1	Ad-aware	1		1			2
2	Altnet Download Manager				1		1
3	Big Money Deluxe	1					1
4	Caere Scan Manager				1		1
5	Co-Pilot	1					1
6	Collapse from Gamehouse	1					1
7	Comet Cursor	1					1
8	Cursor Mania	1					1
9	Date Manager	5	1				6
10	Direct Mail Manager	4					4
11	Ebates MoMoney Maker				1		1
12	Executive Assistant	2					2
13	Fun Web Products Installer	1					1
14	GAIN		1		2	1	4
15	Gator CME II Client	5	1		2	1	9
16	Google Toolbar	1		1			2
17	Hotbar	7					7
18	HuntBar				1		1
19	Intervideo Installer				1		1
20	iWon Prize Machine	1					1
21	Lycos Sideseach	1					1
22	Microsoft Forest Floor Stationery				1		1
23	Microsoft WINSPI				1		1

UNAUTHORIZED SOFTWARE ON NLRB COMPUTERS

Item Count	SOFTWARE TITLE	HQ	Region 3	Region 9	Region 17	Region 19	Total
24	Minibug	3		1	1		5
25	My Way Speedbar				1		1
26	My Web Search Bar		1				1
27	n-CASE			1			1
28	NetPal Games			1			1
29	Nielsen Net Ratings	1					1
30	Olympus Camera Master	1					1
31	Pop Up Stopper	1					1
32	Precision Time	7	1				8
33	RapidBlaster	1					1
34	Real Download/Jukebox Player	1					1
35	Shopper Reports Adapter	6					6
36	SoundMax	1		9			10
37	Spinner Plus	1			1		2
38	SpyBot	1					1
39	Taxcut 2002					1	1
40	TurboTax Deluxe 2003	1					1
41	Viewpoint Media Player				1		1
42	WebEx				1		1
43	Websearch Toolbar				1		1
44	Webshots Desktop				2		2
	Unauthorized Software Totals	58	5	14	19	3	99
	Number of Computers	26	2	10	5	2	45