Study on Upgrade of Nuclear Control Related Open Source Information Website

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150

(KAERI)   (TCNC)

,   3   .   world- wide,

KAERI- wide,   TCNC- wide   .   KAERI- wide

,   world- wide   .

TCNC

KAERI- wide

.

Abstract

The open source information relevant to the nuclear control is regularly collected, analyzed, and published to the three web sites by the Technology Center for Nuclear Control (TCNC) of the Korea Atomic Energy Research Institute (KAERI). These web sites are world- wide, KAERI- wide, and TCNC- wide, respectively. We are to upgrade the KAERI- wide website to the access- controlled world- wide web site with some additional functionality. In this research, the current status of the three nuclear control related open source information websites managed by the TCNC was introduced and methods for upgrading the KAERI- wide open source information website and associated information security technology were reviewed.

1.

(International Atomic Energy Agency, IAEA)

30   . 1997   5   IAEA   ' Model

Protocol for Additional to Safeguards Agreement ('   ')

                    . IAEA   /   /

        [1][2][3][4][5].   1999   6
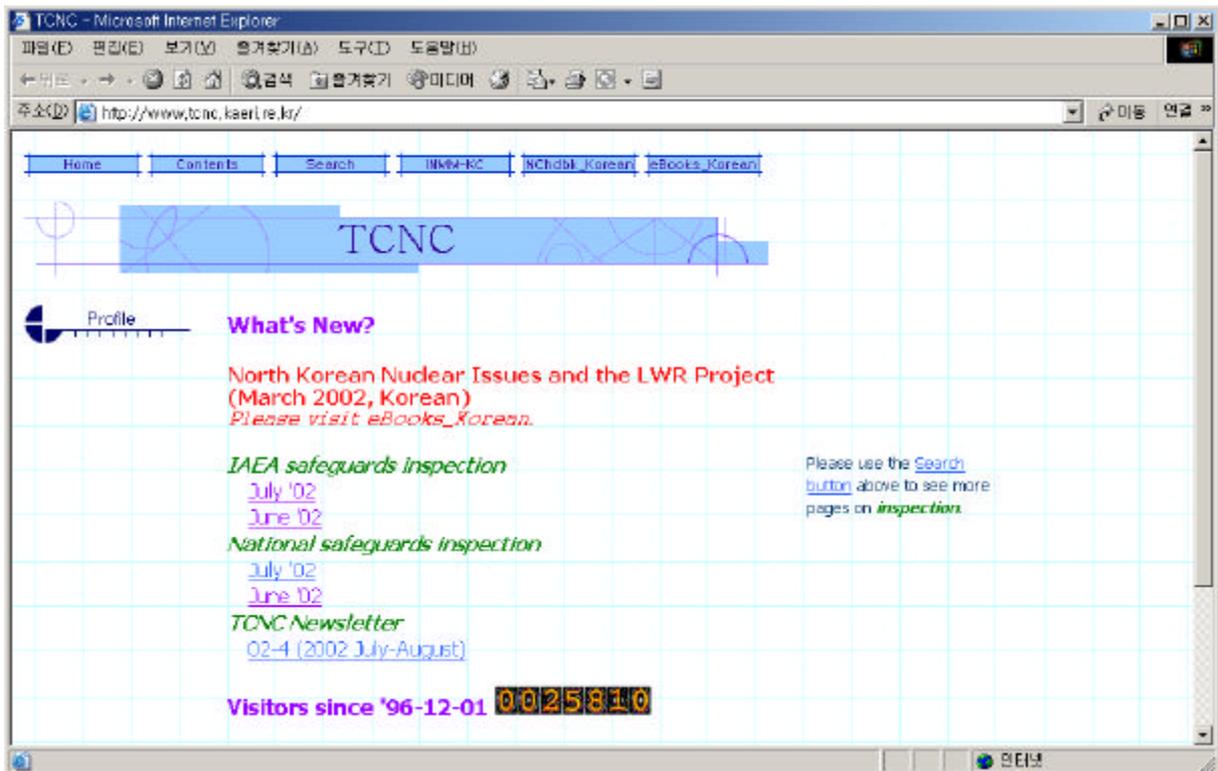
                    .   (nuclear control)   (safeguards),

     (export, import control),   (physical protection)   .

        ,   .

        TCNC

                                                                               .

2.   world-wide

        1.   world-wide

TCNC   (nuclear control)   3   .

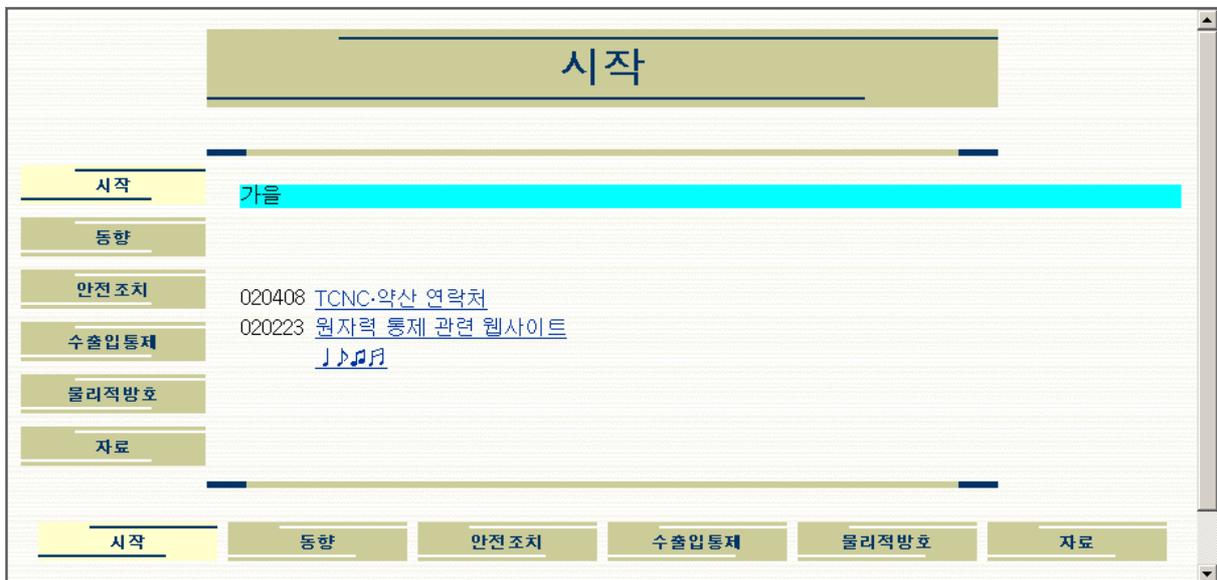world- wide   1   TCNC   . TCNC

                                                  TCNC Newsletter, IAEA

(IAEA Safeguards Inspection)   (National Safeguards Inspection)

                         .   TCNC   .

TCNC   http://www.tcnc.kaeri.re.kr/   .

http://www.kaeri.re.kr/   .

                              3.   KAERI- wide

                                              TCNC

                                                    /   /

              .   (Weapons of Mass Destruction, WMD)

                              .

              .

              2.   KAERI- wide

                              KAERI- wide   2

              .

-
- (safeguards)
- (export/import control)
- (physical protection)
-

3 ' ' .

3

<YYMMDD> < > < >

. 3

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3. KAERI- wide

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'   '   /   ' KAERI- wide   '

(publish)   .   3   4

                              email   .

'   ' , '   ' ,   '   '   . '

     '   .

안녕하십니까. 검색된 자료는 다음과 같습니다.

020909 디타 MS 오피스 독보적 위치 "흔들"
020909 Hrld Seoul, Washington, Tokyo laud N.K. moves
020909 Hrld Seoul firms seek inter-Korean projects
020909 연합 파월, '부시 아직도 일방적 행동 용의'
020909 연합 이라크, '핵 의혹 보도는 美-英 의 거짓말'
020908 겨레 이라크 "미국의 침공목적은 석유장악"
020908 연합 이란 '美, 아프간을 反이란 작전기지로 사용'
020908 중앙 '이라크 핵개발 증거' 사진 왜곡 논란
020908 동아 이라크 核무기 개발능력 논란…美-英 "위성사진에 나타나"
020908 동아 이라크 핵무기 개발여부 논란
020908 한국 "이라크 핵활동 근거 없다"
020908 연합 < 이라크 핵무기 개발 증거 논란 >
020908 연합 이라크,핵개발 전용 가능 장비 수입 시도

        4.   email

                                                        (security)   .

                                                                                                                    ,

                                          (backup)   . KAERI- wide

                                          .

                    .   '   '

                              .   .

                    1. 4MB

              CD- RW   .   1   server

                    .

              4.   TCNC- wide

                                                                              .

                                                                  .

5.   KAERI-wide

KAERI firewall   KAERI-wide   KAERI

                              . KAERI   ·   24

                 KAERI firewall   .

                                                                         .

                                   [6][7][8][9].

- Secure Socket Layer (SSL) Version 3

- IPSec based Virtual Private Network (VPN)

                                                    Transmission Control Protocol/Internet

Protocol (TCP/IP)   . TCP/IP   1   4   (layer)

                                        . Network layer   Internet layer   .

Application layer   HTTP (Hypertext Transfer Protocol), FTP (File Transfer

Protocol), DNS (Domain Name Service)   . SSL   1

     Transport layer   IPSec   Network layer

          . SSL   X.509   (Pubic

Key Infrastructure, PKI)   . IPSec based VPN   ·

                                                                 .

Application layer	HTTP	FTP	DNS	TELNET	SMTP	SNMP
Transport layer	TCP		UDP			
Network layer	IP		ICMP	IGMP		
Data-link layer	ARP		RARP			

1. TCP/IP layers and protocols

SSL   secured channel

       , IPsec based VPN   VPN

                 secured private network   .

IPSec based VPN   IP address

   public IP address   private IP address (2   )   .

public IP address

, IPSec based VPN, . VPN

gateway public IP address private IP address

.

X.509 based SSL Version 3 IPSec based VPN .

TCNC KAERI-wide

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| 10.0.0.0. to 10.255.255.255 |
| 172.16.0.0. to 172.31.255.255 |
| 192.168.0.0. to 192.168.255.255 |

2. Private IPv4 address blocks

4.

TCNC 3

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world-wide, KAERI-wide, TCNC-wide .

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. KAERI-wide access-

controlled world-web site 24

X.509 based SSL Version 3 IPSec based VPN

. TCNC KAERI-wide

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1. R. Loosch, The Additional Protocol as an important tool for the strengthening of the safeguards system (IAEA-SM-367/1/03), Symposium on International Safeguards VERIVICATION AND NUCLEAR MATERIAL SECURITY, IAEA/ESARDA/INMM, Vienna,

29 October 2 November, 2001

2. K. Murakami, Implementation of the Additional Protocol: progress and experience (IAEA- SM- 367/2/03), Symposium on International Safeguards VERIVICATION AND NUCLEAR MATERIAL SECURITY, IAEA/ESARDA/INMM, Vienna, 29 October 2 November, 2001

3. K. Chitumbo, Information analysis in the Strengthened Safeguards System (IAEA-SM- 367/13/01), Symposium on International Safeguards VERIVICATION AND NUCLEAR MATERIAL SECURITY, IAEA/ESARDA/INMM, Vienna, 29 October 2 November, 2001

4. L. Costantini, J. Hill, Information collection strategies to support strengthened safeguards (IAEA- SM- 367/13/05), Symposium on International Safeguards VERIVICATION AND NUCLEAR MATERIAL SECURITY, IAEA/ESARDA/INMM, Vienna, 29 October 2 November, 2001

5. R. Carchon, J. Liu, D. Ruan, M. Bruggeman, Safeguards information handling and treatment (IAEA- SM- 367/13/06), Symposium on International Safeguards VERIVICATION AND NUCLEAR MATERIAL SECURITY, IAEA/ESARDA/INMM, Vienna, 29 October 2 November, 2001

6. William R. Stanek , · , *Microsoft Windows 2000 and IIS 5.0* , 6 SSL , Microsoft Press, 2001

7. Michael Howard, et at., *Designing Secure Web- Based Applications for Microsoft Windows 2000*, Microsoft Press, 2000.

8. H.X. Mel & Doris Baker , · · , *Cryptography Decrypted* , Chapter 20. Secure Socket Layer(SSL) Transport Layer Security(TLS), Chapter 21. IPSec , · Addison Wesley, 2001

9. Bruce Schneier, *Applied Cryptography* 2nd edition, Wiley, 1996