To be presented at the International Seminar on Year 2000 (Y2K) held in Vienna, 1-5 February 1999

THE PRESENT PC-BASED SYSTEMS AT VIETNAM ATOMIC ENERGY COMMISSION AND THE Y2K ISSUE

Vuong Huu Tan
Vietnam Atomic Energy Commission
59 Ly Thuong Kiet, Hanoi
Vietnam
Tel: +84-4-8256-647
Fax: +84-4-8266-133
E-mail: vuonghuutan@hotmail.com

XA9952491

ABSTRACT

After finishing the IAEA TC Project on renovation of the Dalat reactor control and instrumentation system, several PC-based systems such as *Reactor Data Display System, Area Monitoring System, Reactor Protocal System and so on* were newly designed and developed. These systems play an important role for observation, operation and maintenance support of the reactor. Besides, there are also several PC-based systems related to alpha, beta and gamma spectrometers. In this report we present the main functions of each system and discussion on the Y2K issue in Vietnam and in Vietnam Atomic Energy Commission in particular.

I. INTRODUCTION

Recently, workstation, personal computer (PC) and network technology have been remarkably developed. By using such technologies, design and construction of the reactor computer system and other PC-based systems are imperative for the purpose of rationalization and of utilizing on-line data in PC applications. Several PC-based systems such as *Reactor Data Display System, Area Monitoring System, Reactor Protocol System and so on* were newly designed and developed at the Dalat reactor. These systems play an important role for observation, operation and maintenance support of the reactor. Besides, there are also several PC-based systems related to alpha, beta and gamma spectrometers. They are used in management of irradiation, measurement and spectrum analysis processes. In this report we present the main functions of each system and discussion on the Y2K issue

30 - 43

in Vietnam and in Vietnam Atomic Energy Commission (VAEC) in particular.

II. THE PRESENT PC-BASED SYSTEMS AT VAEC

2.1. Reactor Data Display Sytem:

- Acquisition and processing the information from the neutron flux control system such as reactor power and period signals, safety threshold signals, logic signals on ranges, begining and ending of working range ect and periodically record them.

- Displaying continously the process data on the PC's screen with some modes such as data table, graphs of main parameters of the reactor.

2.2. Area Monitoring System:

- Continuously measuring radioactive level at 12 different places in the reactor hall, reactor control room and in the rooms where technological equipment was installed.

- Displaying count rate/dose rate in digital and graphic form.

- Giving out light and sound signals whenever radioactive level is higher than setting value.

2.3. Reactor Protocol System:

- Acquisition and monitoring the important technological signals from the process instrumentation system such as flow rate of primary and secondary cooling water loops, temperature at variuos places in the reactor tank and at the inlets, outlets of the heat exchanger, water level in the reactor tank, etc and periodically record them.

- Giving out alarm signals when abnormal data is detected.

2.4. Stack Monitoring System:

- Continuously monitoring gaseous effluent samples of radioactive particle, iodine, and noble gases released from the reactor stack.

- Displaying air flow rate, radioactivity concentration on filter of particle and iodine, and emission rate of them in digital and table form, giving out alarm signal when measured value is higher than setting.

- Storing on hard disk and printing on paper all the above parameters in cycle, in case of an alarm signal appeared or at any time by demanded.

2.5. Incident Early Warning System:

- Continuously monitoring and evaluating the radiological status in the reactor area and the important technological parameters of the reactor.

- Giving out alarm signal when abnormal data is detected.

2.6. Nuclear Radiation Spectrometers based on PC:

- Controling operation of pneumatic sample transfer systems in activation analysis using reactor and accelerator.

- Managing measurement, data record and sample exchane processes in experiments of spectroscopy and acivation analysis.

- Spectrum process and data analysis. .

III. THE Y2K ISSUE IN VIETNAM

3.1. How big is the Y2K issue in Vietnam:

According to the statistics from Vietnam Customs, up to 1998 we have imported about 400,000 PCs. Besides, there were a big number of PCs manufactured in Vietnam. The primary results for testing PCs shows that all PCs produced before 1996 have not been suitable. It means that they can not work normally in the transition period from December 31, 1999 to January 1, 2000 or from Fabruary 28, 2000 to Fabruary 29, 2000. All PCs produced from 1997 up to now are well suitable. The funds for resolving the Y2K issue in Vietnam are estimated very big, for example, in Vietnam Airlines it is about 15 milion USD.

3.2. How is the Y2K issue in VAEC :

In VAEC we have about 150 PCs. Some of them have been used in PC-based systems as presented above and remainders are used in calculation and word process. In general, the present PC-based systems in VAEC used separate PCs with especial softwares written by ourself. They can be easely repaired by our experts if the softwares can not run normanly. However, if PC itself does not work normanly because of the Y2K issue, it become a problem. It is sure that not less than 1/2 of our PCs were produced before 1996. So for VAEC the Y2K issue become a big problem.

3.3. What have we done and should do to resolve the Y2K issue in Vietnam and in VAEC :

* Vietnam Government by the dicision No.43/1998/CT-TTg has set up the State Y2K Problem Commission head by the minister of Science,

Technology and Environment with the duties of making Guidelines for a strategy to deal with the Y2K problem.

* Information for understanding the Y2K problem in Vietnam has been transmitted by radio, television and newspapers.

* Some government organizations like Ministry of Finance and National Bank have their resolution named 1910, Vietnam Telecom Agency has its resolution called VASC-Y2K. Information on VASC-Y2K can be found in http://www.vnn.vn/vascy2k. Every request on information and resolutions for the Y2K issue can be sent to the Secretary of the National Program on Informatic Technology by the email address Y2K@itnet.gov.vn.

* However, so far not all ministries and institutions have paid attention on this important matter. Vietnam Atomic Energy Commission is in the same situation. So, first of all, I think, all PCs at VAEC have to be checked on the Y2K compatibility. After that we can use suitable remediation techniques available from Vietnam and overseas. All these works have to be completed before September of 1999.

IV. REFERENCES

1. Trinh Dinh Hai. Development of the Reactor Computer System at the Dalat Nuclear Research Institute. Private Communication, Nuclear Research Institute, Dalat, 1998.

2. Thai Le Thang, Nguyen Thuc Hai, Mai Anh, Vu Ngoc Cu. Time Bomb 2000 and Vietnam Preparations for the Y2K issue. Science and Technology Press, Hanoi, 1998.