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**Development of a System for Automatic Control and Performance
Evaluation of Shutoff Units in HANARO**

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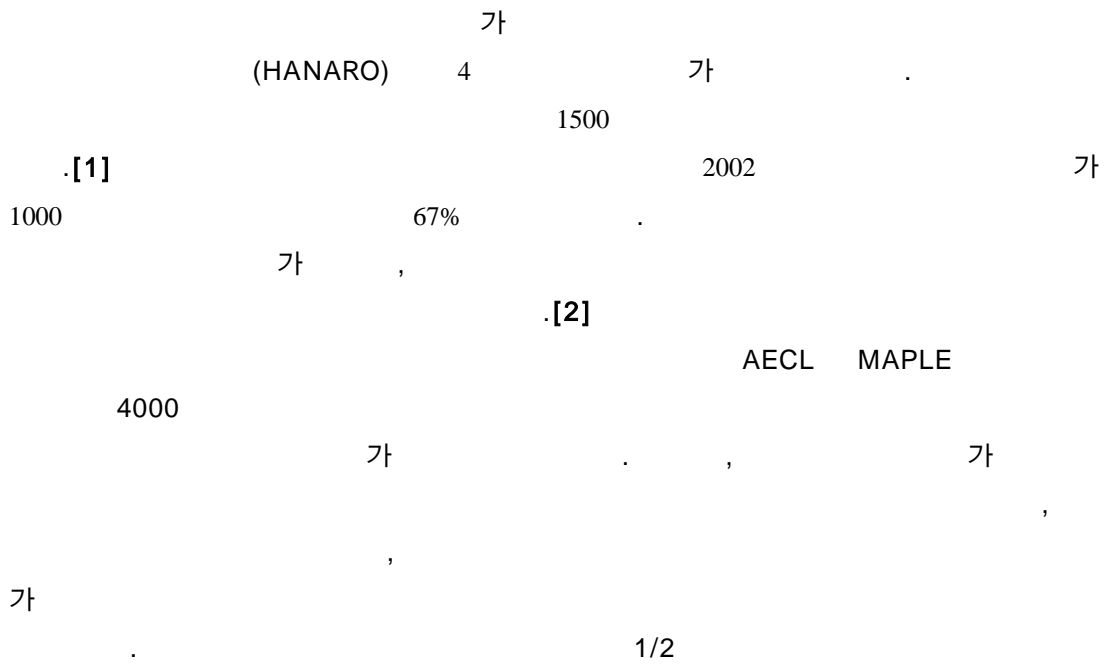
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Abstract

The function of the Shutoff units is to rapidly insert the shutoff rod into the reactor core for safe shutdown of reactor. This paper describes the development of a system for automatic control and performance evaluation of shutoff units. The system automatically drives the shutoff unit with a specified operation cycle and records the performance of the drive mechanism in graphs and data.

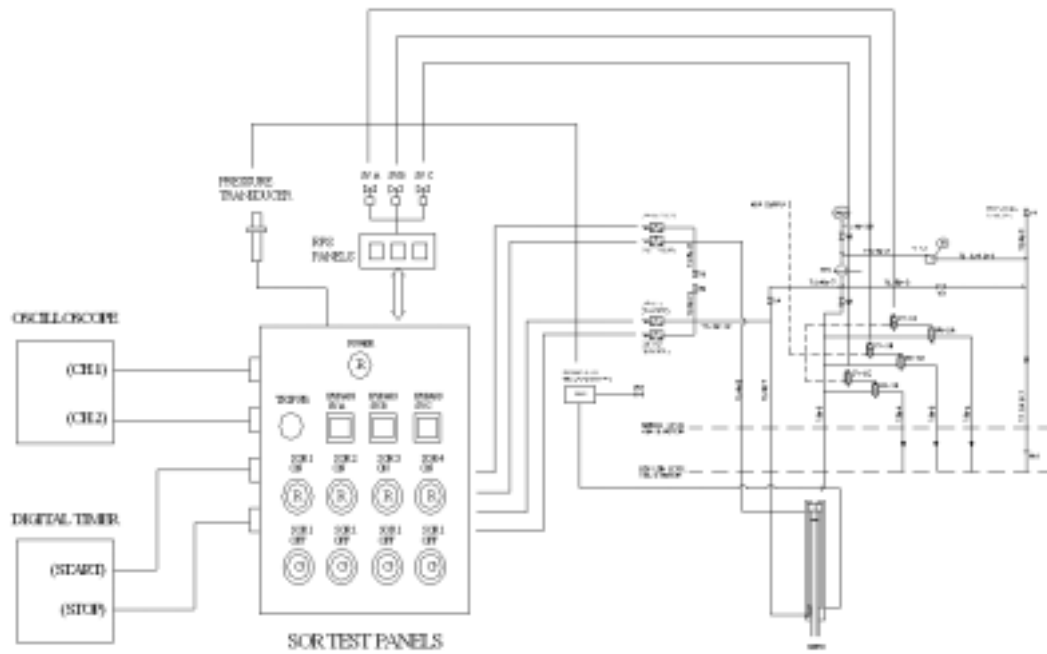
Also, it records the operating parameters of the shutoff unit and test facility. The characteristic of the developed system was evaluated to compare with that being use in the HANARO reactor. The system will be used for the performance and endurance tests in the test facility. Hereafter, the system will efficiently be used for the normal operation and the periodical drop performance tests of shutoff units in HANARO.

1.

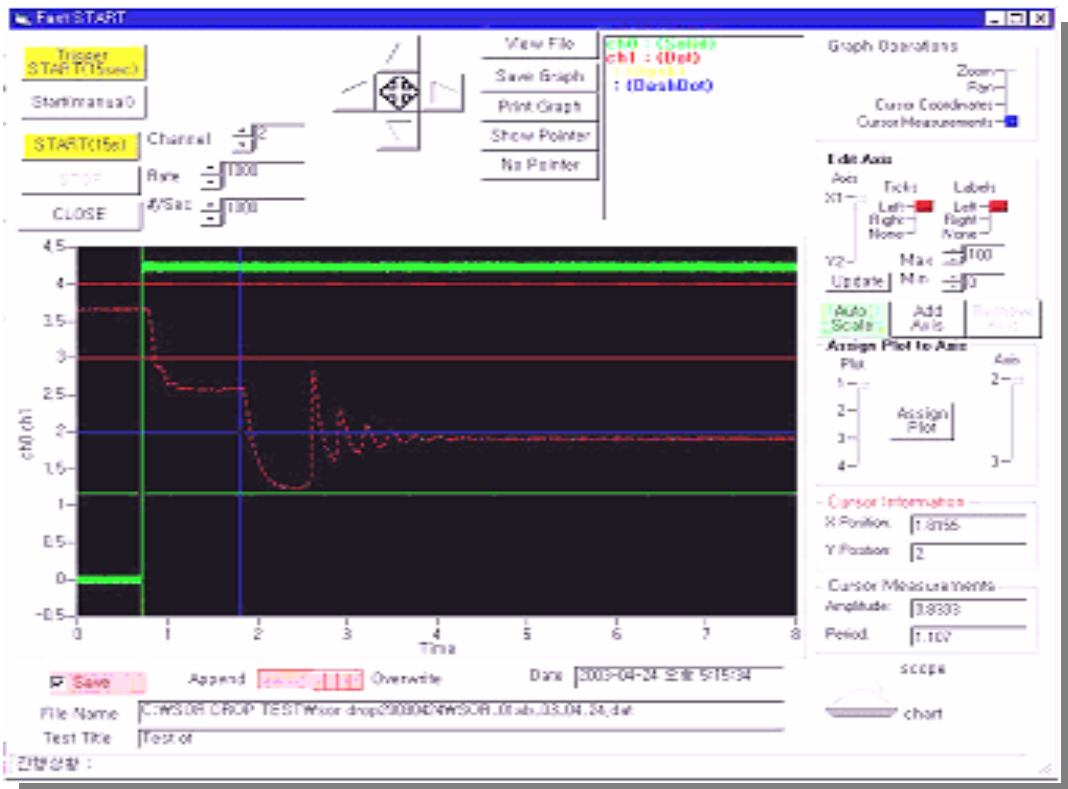


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6



1.



2.

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647mm

700mm

3.

2

- Program

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- Data

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647mm $\frac{45 \pm 15}{(- 0.008)} 1.13$

4.

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4.1

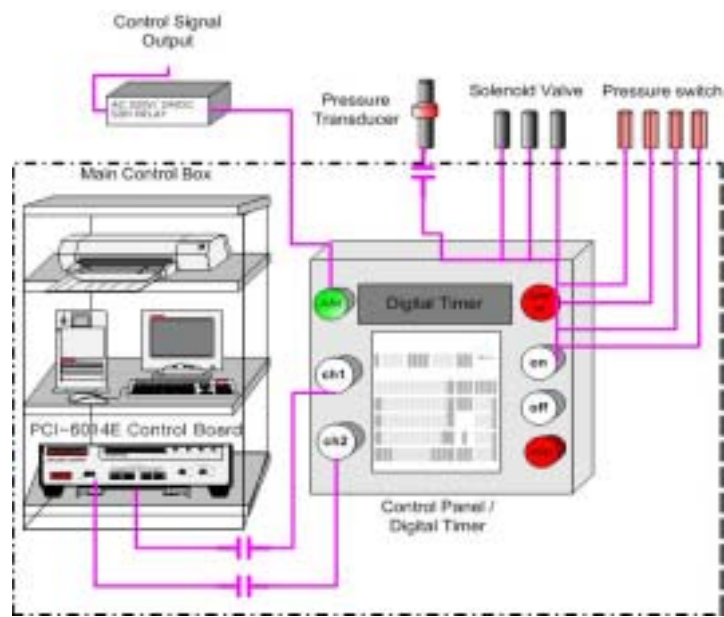
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가 (Control Panel)

2)

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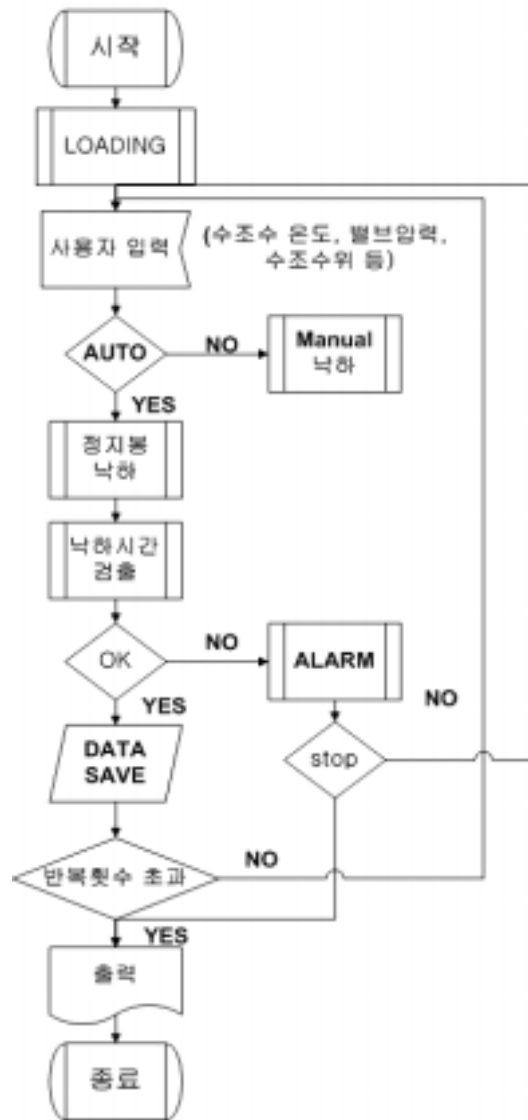
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4.2

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Flowchart

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4. Program Flowchart

4.3

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(1) : 5

(bypass)

647mm 700mm

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(2) : 6

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(4) : 8 9

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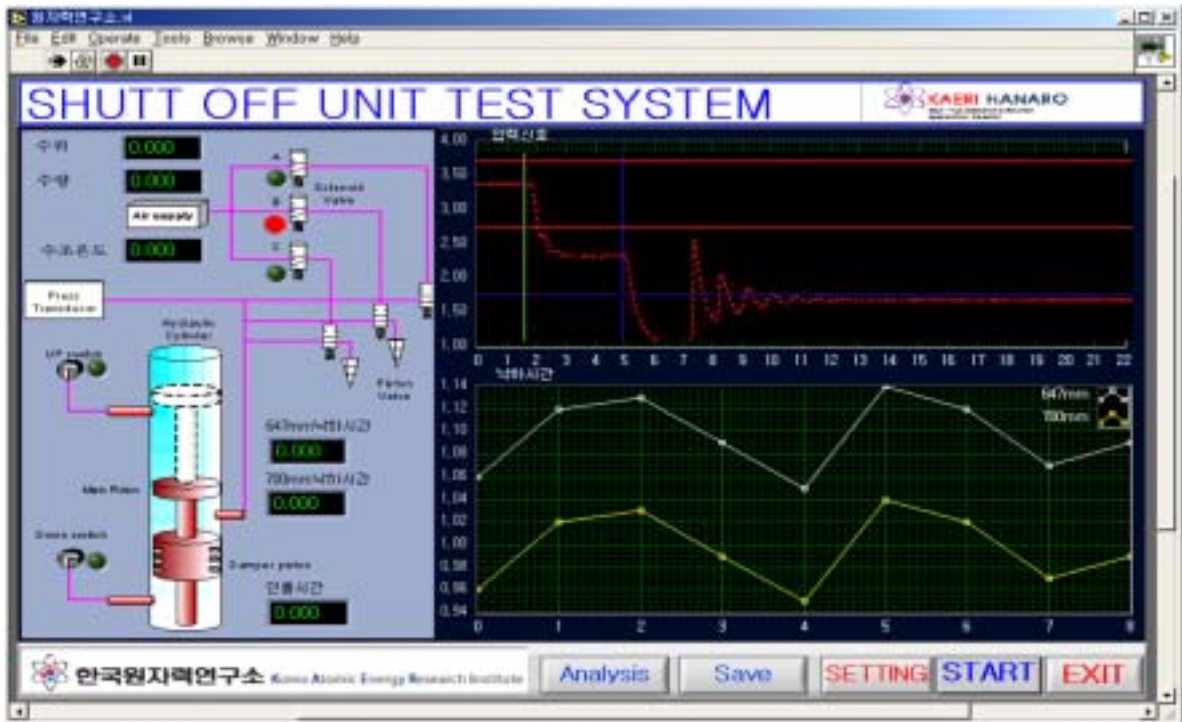
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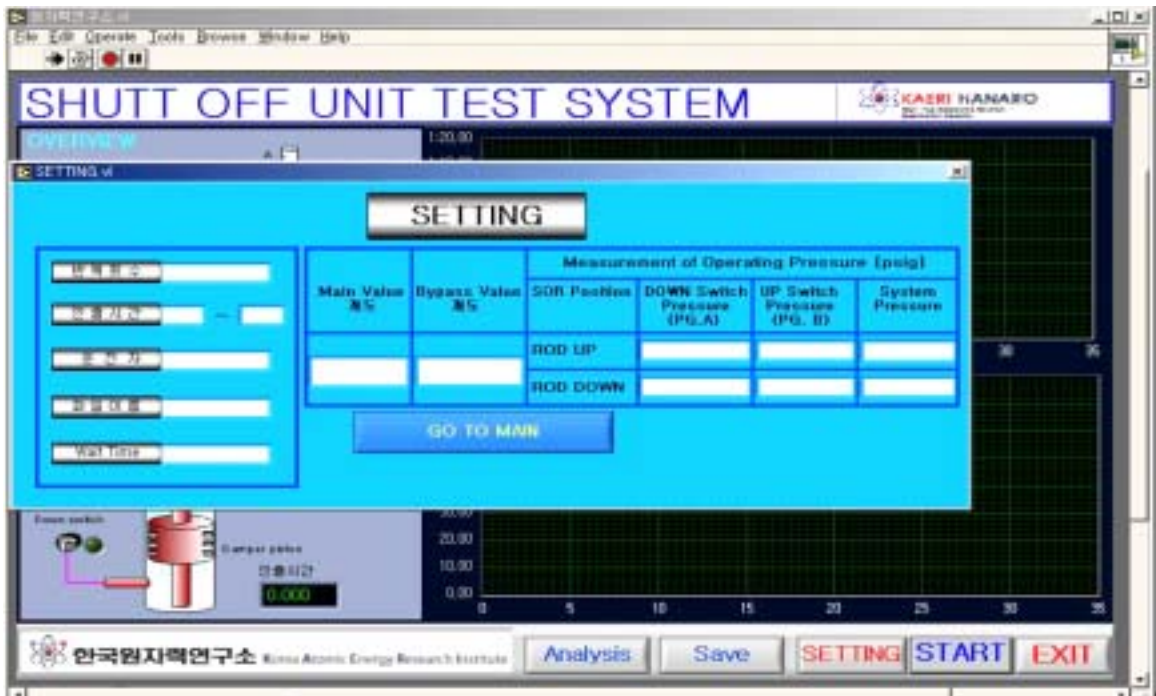
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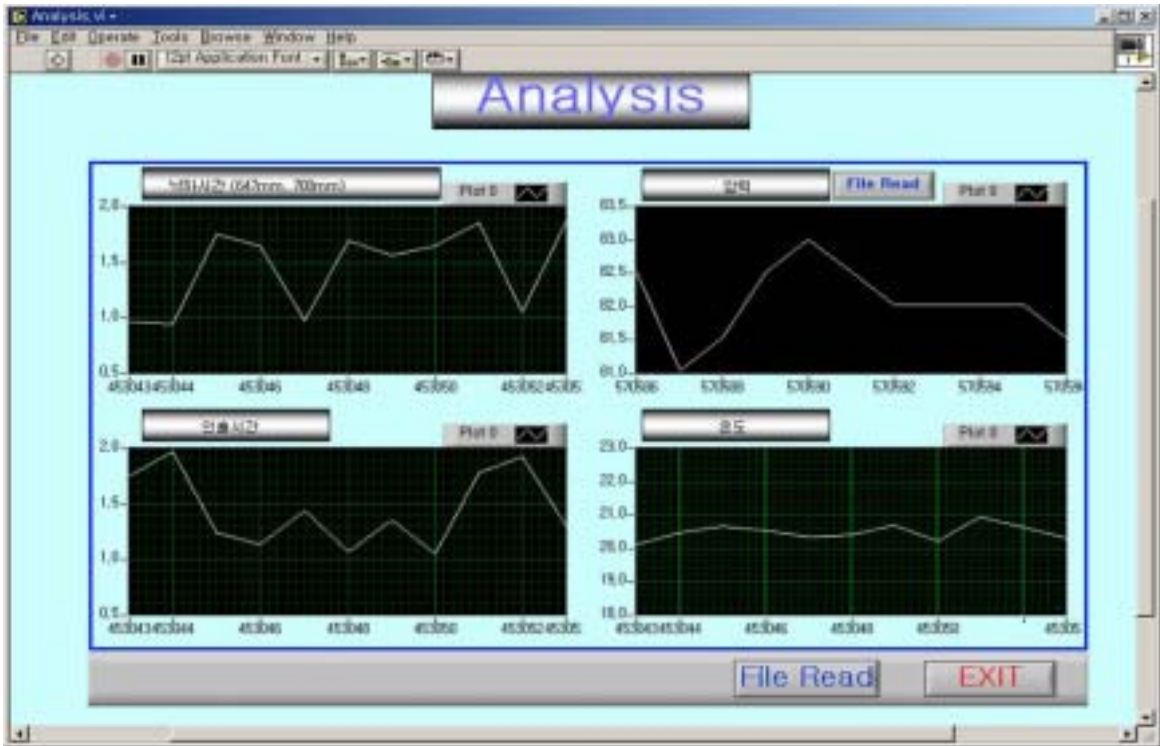
647mm 700mm



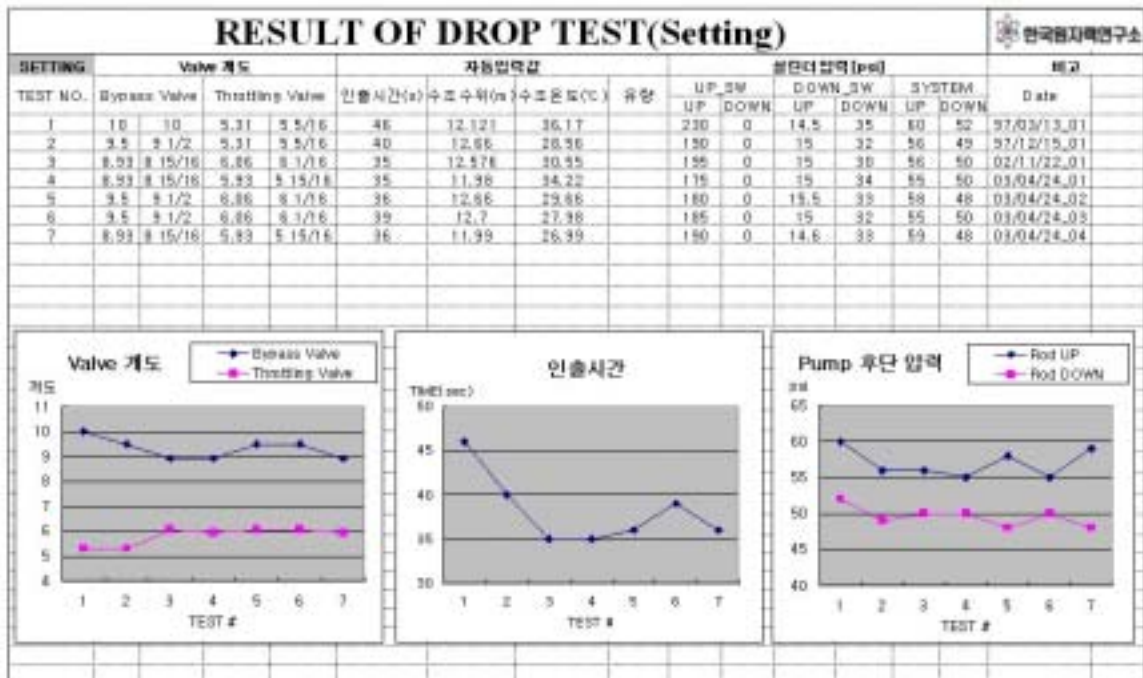
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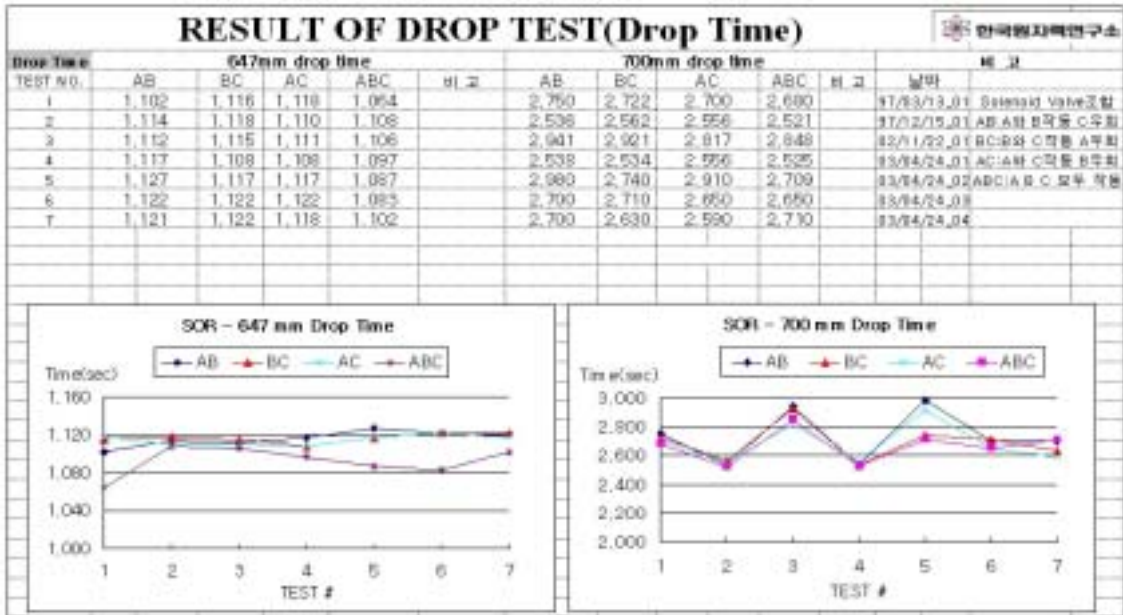
6. setting



7. Analysis



8. (setting)



9. (Drop time)

5.

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2)

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3)

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4)

1. R.R. Bodner, "KMRR Shut-off Unit Test Report", AECL/KAERI, TR-37-31730-001, Rev.1,
1994.1.14
2. Y.G. Cho, S.I. Wu, J.H. LEE, J.S. Ryu, Y.C. Park, J.S. Wu, B. J. Jun, "Ageing Management Program for Reactor Components in HANARO", 9th Meeting of The International Group on Research Reactors, 2003.3.25
3. , " , ,
HANTAP -05-OD-ROP-SI-32, 4, 2002