

## An Utilization Method Cooperating ISO drawings and Bookmarks for NDE

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### 1. Introduction

In-service inspection in a nuclear power plant, to confirm the integrity of the equipment, is performed based on nuclear law. KHNP has performed the in-service inspection for the weld parts of nuclear power plants following the LTP(Long Term Plan). The inspection of weld parts are performed with various non-destructive test methods such as AUT, VT, PT, ECT, etc. The results have been published in the report booklets. Moreover, huge amount of non-destructive inspection data and reports, which are produced from the '78 Kori 1 to newly constructed power plant, are stored in the management department and DDCC of each power plant. Because the data are not classified, it takes much time to find the corresponding non-destructive test results report of a specific unit of a power plant for a particular year.

In addition, it is possibility to make human error because the report is written and submitted after finding manually the non-destructive test results for the concerning weld.

When there is a dispute of the results of non-destructive inspection of a particular weld, analyzes the control center, a result of the power plant and the corresponding non-destructive inspection of a particular weld of ISO drawing in many places such as control center, corresponding power plant and CRI was discussed together will be to derive the final conclusion. For discussion, the person in charge of each site, looking for ISO drawings there is a result of the weld, in the past results history report of non-destructive testing for this, by searching the results of the welding site, telephone and E-mail disadvantage of complicated procedures if necessary to the discussion together in -mail is performed I have. In this paper, we describe the contents introduced the ISO drawings and Bookmark function is trying to complement these drawbacks.

### 2. ISO drawings and Bookmark cooperation ways to use

In this section some of the techniques used to ISO & Bookmark are described.

#### 2.1 ISO Map and weld DB information cooperation

ISO screen, when the user clicks a particular weld a mouse, to the operation of the vector which can recognize the welding site which must be stored in ISO DB is running. Further, the inspection result history data

DB is the identification number of the welds, the information that the overall test results are entered on it must be stored.

If the two types of information has been entered correctly, when the user clicks the weld, and then displayed on the screen to come collect the information of the weld to be matching from DB.

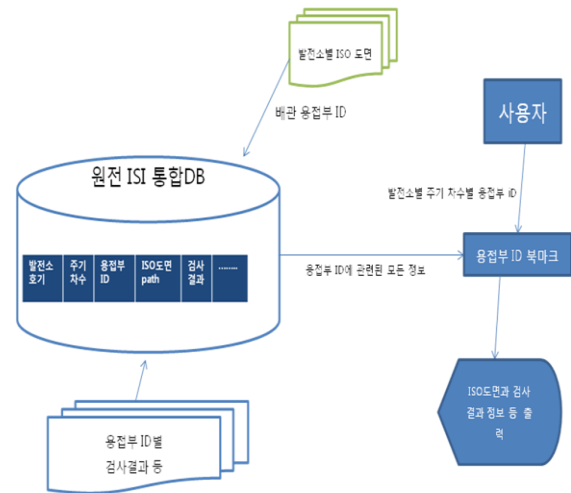


Fig. 2. ISO Map and weld ID bookmark cooperation ISO

#### 2.2 Bookmark cooperation with ISO Map

In ISO drawing screen, the information that is currently watching yourself Mark as bookmarks, sending by specifying the recipient as e-mail, other people receiving the received information, the mark ,By double-clicking, the same environment as the environment in which the creator created the output to the screen, it is ., This is, creator circle, square, shapes and text at the position on the screen of the time of writing was marked on the screen such as lines, such as the setting of View point, reset to the same environment, of other people ,Through the output to the screen, there is efficient and rapid communicate capable features.

Also can specify controversial attachments with the creator of the comment content to indicate the note information, it is possible to check the contents without emailed separately. ,In addition, there is a feature that can be sent by dividing the importance to the business instructions and comments.

### 2.3 Implementation algorithm

1. Search results for non-destructive inspection corresponding to each weld ISO drawings corresponding to the power plant from the DB matching
2. Select the ISO drawings or P & ID drawings of 2D drawings, and select the required weld
3. Save author information in a two-screen, information of the recipient you want to send the information of this bookmark, information of the drawings, screen coordinates information, bookmark information, the memo information to DB
4. It is delivered to the intended recipient, the recipient can verify whether to confirm the bookmark information
5. If you double-click on it to verify if it acquires the bookmark information stored in the DB (3), open to the drawing, by setting the position of the screen in screen coordinates information can be repainted bookmark information, view memo information

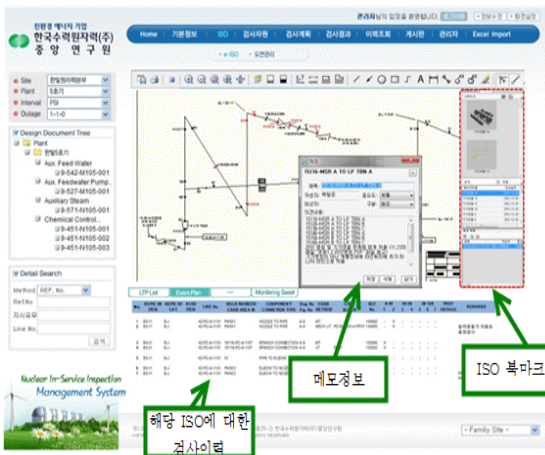


Fig. 3. ISO and Bookmark execution screen

### 3. Conclusions

By applying the present invention utilization, find the ISO drawings manually when querying the results of the non-destructive inspection of past weld, which reduces the time to grasp the content of the non-destructive test results report. And therefore, it is possible to reduce a decision time between each power station and headquarters and CRI person in charge, it is possible to expect an improvement in non-destructive testing operational efficiency, weld nondestructive inspection, it is possible to enhance the results of reliability.

### REFERENCES

- (1) ISI Data Sheet, 2013, ASCO, SAEAN, KPS, UMI
- (2) ASME Section V, 1995 ~ 2004
- (3) KEPIC ME, 2000, 2006
- (4) NPP LTP(long-Term Plan)