

# **Computerized Radiation Work Classification Criteria in Korean Nuclear Power Plants to Adopt the Input Module of Task Groups in ISOEDAT**

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**ABSTRACT** – Information sharing through ISOE system has known to be an effective tool to support for decision-making process. The ISOEDAT distributed to the member states since 1995 has never been operated in Korea because of operational conflicts with computer environment in Asian region. In this regard, both the CEPN and the KINS devoted to recognize the sources of conflicts that were eliminated recently. In parallel, the database and task allocation of radiation works during outages has been modified to adopt the formula of task groups described in the ISOEDAT. Various efforts are being devoted to implement the new actions for management. Concerns and lessons learned obtained from these modifications will be presented in this paper as well as the pilot test results for grouping radiation work assignments during the outage.

## **1. Introduction**

In nuclear power plants, each data of occupational doses allocated in a radiation work permit is used as a basic tool for ALARA implementation which is of interest to plant manager. Further follow-up assessments are normally carried out by radiation protection group for feedback to the enhancement of radiation protection programmes.

The operators of nuclear power plants (NPPs) would assign radiation works according to the procedure, which might have different practice in NPPs. In this process, validation, analysis and efficiency of the allocated work has been a main interest in Korea NPPs; however, inequality or inconsistency among the compiled data-groups are the difficult aspects to assess or compare those data. Thus, a common practice of classification for radiation works, which the NPP operators are seeking for a better solution, has evolved in Korea and the result will be presented in this paper.

The new ISOEDAT revised to make compatible with Korean computer environment was tested successfully at the end of a project to renovate the information system on NPP activities. The project was to merge all Computer system used to manage radiation works in Korean NPPs into a centralized RAM, which is a subsidiary system of ERP. In order to adopt ISOEDAT infrastructure, the project was modified urgently and the task groups described in the ISOEDAT was reviewed. Significant efforts were devoted to reflect them into the procedure of radiation work permit (RWP), many of them require new actions for management.

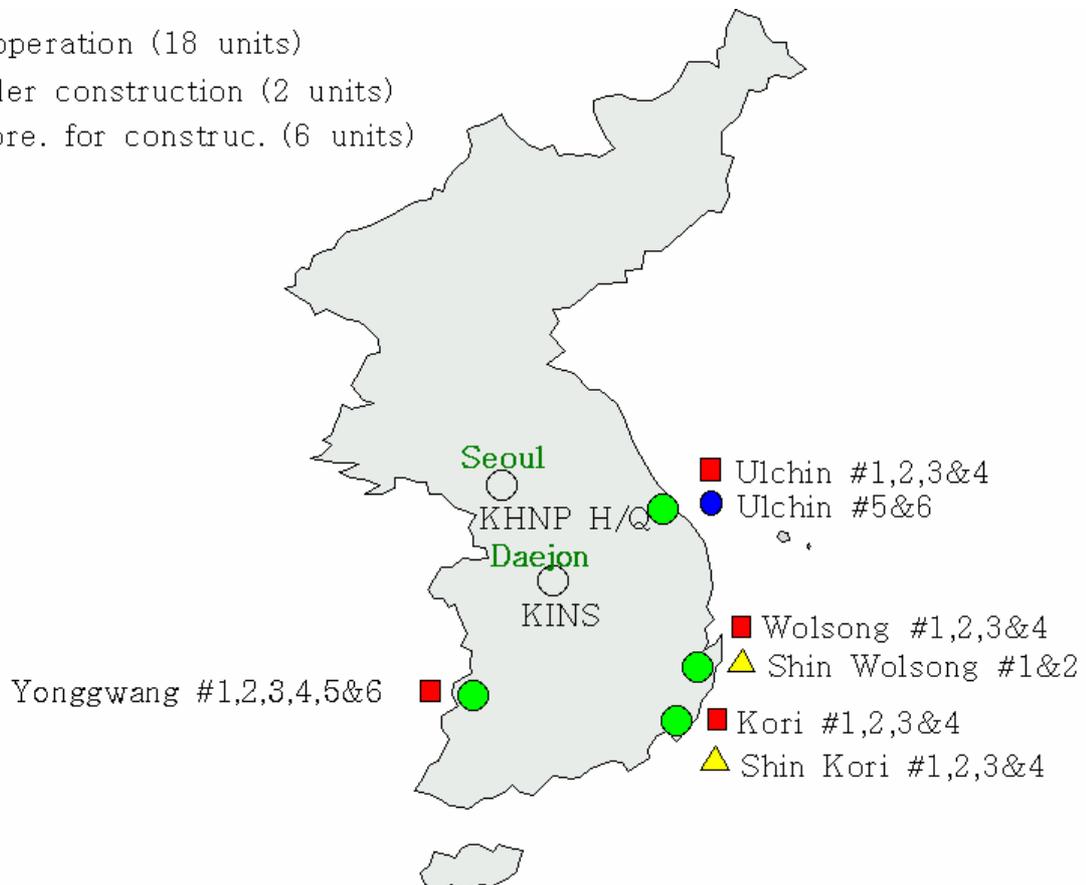
The new system will be used to compare the Korean specific field data with other sister NPPs including indicators obtained from ALARA activities. It is now fully operational except the part of ISOEDAT in RAM. Although significant efforts have been devoted to adopt new requirements for management, the RAM does not provide ISOE equivalent data yet due to lack of motivation to learn a new system and/or poorly evaluating the value of the use of ISOE system for actual radiation work.

As a result of pilot test, the infrastructure of ISOEDAT input task category was not fully acceptable to Korean NPP work environment. In order to improve the system, the following recommendations should be resolved:

- further revision of task categories based on characteristics of NPP types, for example, PWR/PHWR, Framatom/Westing House
- further guidance to understand the job code in RWP (improperly classified work category will cause wrong statistical result, for example, S/G work or Valve work)
- further training to understand ISOE task categories (initial and periodical)
- enhanced sustainable mechanism for information exchange as well as convenient communication channel (national and international)
- user manual

## 2. KHNP's Power Generating Facilities

- : In operation (18 units)
- : Under construction (2 units)
- ▲ : In pre. for construc. (6 units)



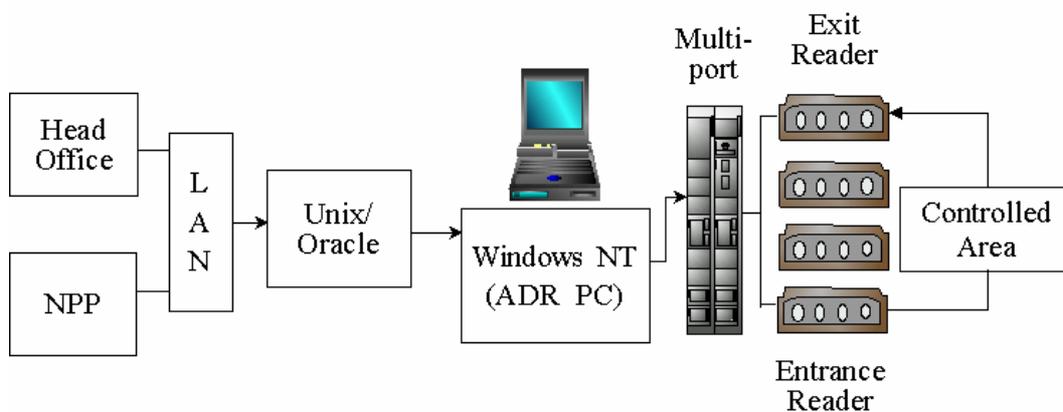
### 3. Radiation Safety Management System

- To enhance the reliability of radiation control data and raise the efficiency of radiation work permit process,

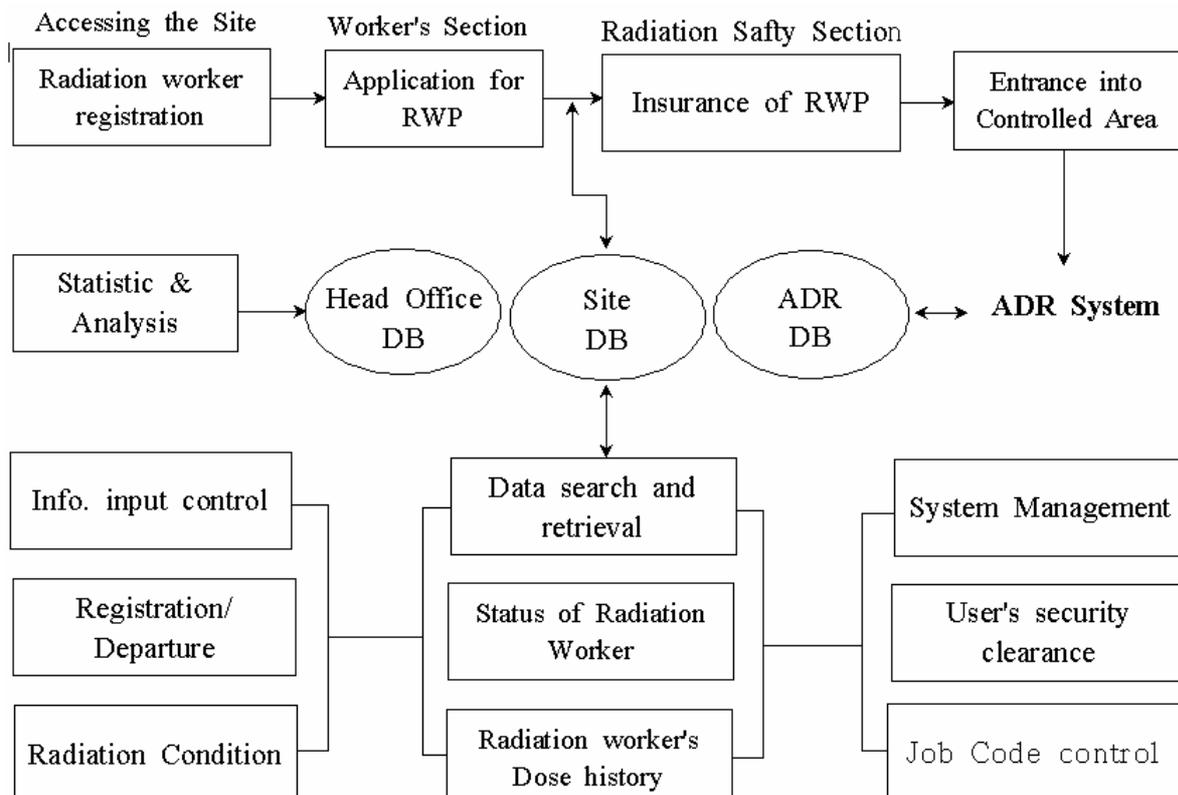
- Major Functions are:

- Radiation worker registration
- Issuance of radiation work permit
- Record radiation worker history  
(Dose, training, medical examination)

### 4. Network



### 5. System Configuration



## 6. Job Code Control

Code No.	Job Descriptions	
	KHNP (Old Code)	ISOEDAT (New One)
A100	Refueling	REFUELING
B100	S/G Inspect. & Maint.	S/G - PRIMARY SIDE
		S/G - SECONDARY SIDE
C100	Pump Inspect. & Maint.	REACTOR VESSEL OR INTERNAL
D100	In Service Inspection	PHR & SI SYSTEM
E100	Containment LLRT	CVCS & COOLANT PUMP SEAL WATER SYSTEM
F100	PHR P/P Maintenance	PRIMARY CIRCUIT
G100	Valve Inspect. & Maint.	VALVE WORK
H100	Incore detecting Sys. Maint.	GENERAL WORK
I100	RCP Inspect. & Maint.	RCS PUMP
J100	PZR Inspect. & Maint.	PZR
K100	Snubber Inspect. & Maint.	ROUTINE INSPECTIONS
L100	Filter Replacement	INSULATION
M100	Floor Decontamination	CONTROL ROD DRIVE
N100	R/W Treatment	DOSE BY SYSTEM
O100	Sys. Operation, Radiation Control, etc.	NOT LIST ABOVE