

The status of KAERI nuclear material accountability

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1. Introduction

Nuclear material accountability within the framework of IAEA safeguards begins with the nuclear material accounting activities by facility operators and the State system of accounting for and control of nuclear material(SSAC), implemented in accordance with the provisions of the safeguards agreement between the IAEA and the State[1]. IAEA verify the correctness of the nuclear material accounting information in the facility records and the reports provided by the SSAC to the IAEA[1].

This paper are described the status of KAERI nuclear material accountability.

2. Nuclear material accounting reports

3.

Accounting records of all KAERI nuclear material subject to safeguards under agreement between ROK and IAEA for the application of safeguards and need to be submitted to IAEA. Reports to be provided to the IAEA consist of three types as follows.

(1) ICR(Inventory Change Report) showing all changes in the inventory of nuclear material

(2) MBR(Material Balance Report) showing the material balance based on a physical inventory of nuclear material actually present in the material balance area.

(3) PIL(Physical Inventory List)

KAERI have submitted them to IAEA on a timely basis. Table 1. shows the submission status of KAERI nuclear material accounting reports in 2006~2009.

Table 1. Submission status of KAERI nuclear material accounting reports in 2006~2009.

	2006	2007	2008	2009
MBR	21	12	10	11
PIL	23	18	17	19
ICR	84	78	78	97

4. KASIS(KAERI Safeguards Information treatment System)

KASIS is a computerized nuclear material accounting system of KAERI. KAERI developed it for effective nuclear material accountability. All KAERI accounting records are kept and managed by KASIS.

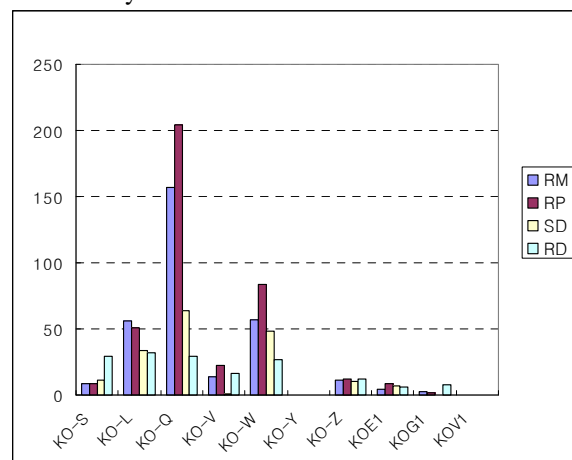
5. Rebatching frequency in respect of each facility of KAERI

There are 12 nuclear facilities at KAERI and MBA codes in respect of each facility are as follows;

- (1) HANARO : KO-S
- (2) IMEF : KO-V
- (3) DUPIC : KO-Y
- (4) ACPF : KOV1
- (5) PIEF : KO-L
- (6) R&D Facility : KO-Q
- (7) LOF : KO-Z
- (8) PRIDE : KOV2
- (9) Nuclear Material Storage Facility : KOE1
- (10) HFFP : KO-W
- (11) UF4 Conversion Plant : KO-I
- (12) URSF : KOG1

Table 2 shows rebatching frequency in respect of each facility of KAERI in the first half of 2010.(Table 2 doesn't indicate those of UF4 Conversion Plant and PRIDE because there is no inventory of nuclear material in UF4 Conversion Plant and PRIDE.) RM/RP are the codes which indicate rebatching (decrease/increase in batch content). SD/RD are the codes which indicate the receipt/ shipment domestic. R&D Facility is the facility having the most frequent RM/RP at KAERI. RM/RP of R&D facility which is a bulk handling facility are frequent due to the batch follow-up and frequent experiment. If rebatching process is not applied in the R&D facility, the accounting procedures will be more efficient. But, IAEA recommended that the batch follow-up is required for all KAERI facilities. Therefore, it is necessary to review the ways to solve this problem.

Table 2. Inventory change frequency in respect of each facility of KAERI in the first half of 2010



6. Conclusion

The status of KAERI nuclear material accountancy is reviewed in this paper. KAERI will make continuous efforts to implement effective nuclear material accountancy and to meet the requirement of ROK-IAEA safeguards agreement.

REFERENCES

- [1] IAEA, "Safeguards glossary (2001 edition), 45.
- [2] IAEA, "Nuclear Material Accounting Handbook"(2008)