

The current challenges and good practices of utilities

“ALARA Programs & Occupational Dose Trend in Wolsong Nuclear Power Plant”

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This is the report of ALARA program and the trend of occupational dose of Wolsong nuclear power station in South Korea, which was presented by Mr. Choi. Wolsong nuclear power station has 4 reactors of PHWR with CANDU system, and they maintain very high performance. [Mr.Mizumachi (chair of the Symposium) introduced that they achieved the world record in capacity factor

at 103%]

Korea introduced ICRP-60 recommendation in the amendment of the atomic act in 1998. KHNP reviewed ALARA program, which was created at each power station individually, and made standard ALARA program for all power stations. Actual planning has been carried out by ALARA implementation committee, whose members are consists of section chiefs, and ALARA committee, whose members are all officers, will review it comprehensively. The concept of ALI : Annual Limit of Intake and DAC : Derived Air Concentration were applied in 2001. ALARA implementation committee has responsibilities on following points;

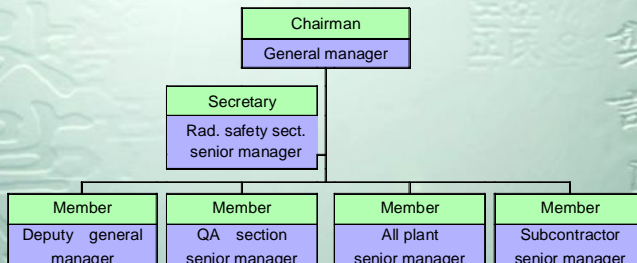
- (1) For the work of expected dose 70-200 man.Sv,
 - Review on optimum Radiation Protection Plan
 - Review on the result of Radiation Dose reduction work which excess 25% more than the expecting radiation dose after the work.
- (2) Review on the Radiation Protection Plan in the following places;
 - Where the tritium density in the air is above 10DAC
 - Where expecting radiation is more than 10 man.Sv

As a result of implementation of ALARA program, while the number of nuclear power station in Korea is increasing, the mount of radiation dose is not increasing. More than that, both individual and gross radiation dose per a reactor are in decreasing trend; therefore, it maintains good radiation working circumstance.

PHWR is greater in internal radiation dose than PWR. Wolsong nuclear power station has the record around 40% of internal radiation dose because of airborne Tritium but it reduced internal radiation dose into 2/1of the previous amount by using a respirator with ice, mobile tritium remove, and other measures

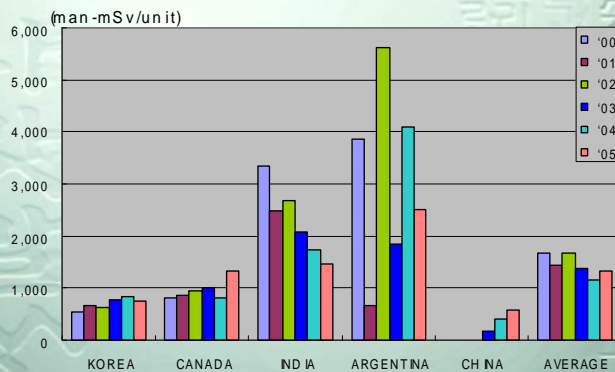
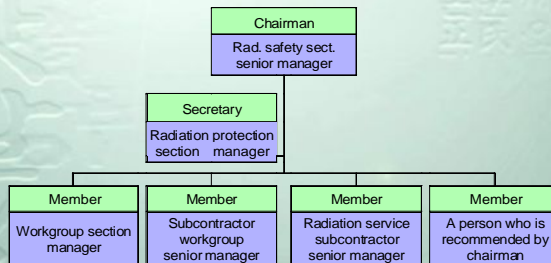
ALARA Program after 2000

Organization of ALARA Committee



ALARA Program after 2000

Organization of ALARA Implementation Committee



Annual radiation exposure dose per PHWR plant