

OSART Good Practices
TECHNICAL SUPPORT
Ageing management

South Ukraine3, Ukraine

Mission Date; 9-25 Oct., 2006

Reliability and lifetime extension department.

The department on reliability and lifetime extension has been organized at SUNPP to coordinate and strengthen engineering activities in the field of application of the ageing management programme and preparation of license renewal.

- Since 2004 and in connection to establishment of reliability and the lifetime extension department, organizational measures were taken to assure data collection and work in the form of a working group (23 persons). The working group members are administratively under the home department but in direct organizational link to head of reliability and lifetime extension department.
- Working group members, being mostly part of operation departments, have access to actual data to be collected and put into reliability database. Each member of the working group has his responsibilities and duties including authorization to enter and insert data into the database. All the database activities are regulated by internal document PL.0.3108.013 defining rules and quality process including implementation of the data into "Ukrainian database of NPP's reliability" via NAEK EnergoAtom.
- Higher effectiveness and efficiency of collection and correctness of the data put into the database after establishing the working group.

Ageing management walk-down during commissioning phase.

The plant implemented a process of ageing management walk-downs during the commissioning phase, which includes daily walk-downs and focused walk-downs, to identify the susceptible ageing effects of plant SSCs, focusing on the areas of susceptible deterioration. Focused walk-downs are conducted based on operating experience feedback data.

The status of components that are most likely to be affected by an ageing mechanism, is reviewed considering real environmental conditions, with the focus on the components important for safety and operability. During the walk-down the plant performs quantitative monitoring, including photos, locations data, original supplier's data, etc) and qualitative monitoring (SSCs status).

Benefits:

- Collect original, as installed, data for future ageing trend analysis;
- Identify adverse conditions or phenomena in the early stages of deterioration;
- Determine the environmental factors or trends that are harmful to the system

Special walk-down for bolts:

In recent years, a large amount of experience feedback data was received related to bolt fracture and failure in different nuclear power plants in China. This poses a potential threat to the safe operation of nuclear power plants. The plant had sorted out such bolts based on the experience feedback events and performed focused walk-down to assess conditions of large-diameter bolts. The results showed that some bolts were found already corroded.

The plant Operating Technical Specification department (OTS) has provided the feedback to the professional departments of the nuclear power plant. Based on the feedback, a mitigation methodology was developed to identify whether the corroded bolts could be affected by internal defects or stress corrosion cracking and for surface treatment. This process could be further used for the development of a component specific ageing management programme.



ARE system pipe fixed point anchor bolt



RIS system pipe support bolt