

OSART Good Practices

CORP. CHEMISTRY

Organization and functions

EDF corporate, France

Mission Date; 24 Nov.-5 Dec., 2014

Chemistry Laboratory to test chemistry instruments “in the field”.

Description:

The corporate chemistry laboratory CEIDRE runs a test laboratory, with sample lines that are connected to the systems of the secondary circuit of the NPP Chinon. The sample lines thus provide “real” samples and online instruments and other chemical techniques can be tested “in the field”. In addition these water samples can be modified by injecting conditioning chemicals for the secondary circuit (e.g. ethanolamine) to simulate alternative chemical treatment of the systems. Only when these substances can be measured reliably they can be potential candidates as alternative treatment substances. This is an important prerequisite factor to improve plant chemistry with regard to several corrosion processes like general corrosion or flow assisted corrosion (erosion-corrosion in two-phase-systems). Suppliers are provided with relevant experience feedback to modify their instruments.

Technicians are trained on how to operate these instruments and to maintain them. These technicians act as multiplier in the plant. In addition students receive their basic training according their training plan in sampling and instrument maintenance.

Advantages:

Performance checks of instruments over several months, these tests help NPPs to avoid inevitable malfunctions when installing new instruments.

Benefits:

Out of the hundred or more new instruments installed across the fleet, no analysers have had to be changed, thanks to the use of this testing facility.



Intranet Platform for Information Exchange on Chemistry related issues in EDF nuclear fleet

Description:

The chemistry Frequently Asked Questions (FAQ) system assists exchange of information between NPPs and the corporate organization. Corporate commits to provide an answer to any given query within a month. Twenty-four hours a day, the on-call system in place at corporate makes it possible to respond to a chemistry-linked query (chemical specifications, chemical contamination, shutdown transient, chemical clean-up, etc.).

A form is completed by the site and corporate enabling of searches the relevant answers among their own operating experience data bank, or in existing studies. This has made it possible to avoid many days unavailability every year.

There are over 1400 data sheets in the data base, which can be browsed using key words. In this manner, the site or corporate can check whether the question has already been raised by one of the other EDF sites of the nuclear fleet. The data sheets represent an ideal basis for development of responses by corporate.

Advantages:

There is a very good responsiveness on chemistry related issues, whatever the area (normal operations, outage, cleaning, waste, effluents etc.). The data sheets are resources for site decisions when preparing chemistry activities that require optimized chemistry parameters and/or operations activities.

Benefits:

The FAQ sheets have been in use since 2004. They are popular and the sites have easy access to official information from the corporate organization. The regulator has recognized the process as a positive one, and also uses these FAQ sheets in their day-to-day monitoring of the fleet.

The FAQ sheets deal with over 40 different areas. Approximately 140 such sheets are developed every year, i.e. three per week. This is a practice that can be easily replicated by any other engineering structure in charge of support to unit chemistry.