

OSART Good Practices

CHEMISTRY

Quality Control of Operational Chemicals & Other Substances

Gösgen, Switzerland

Mission Date; 8-25 November, 1999

The plant has introduced improved equipment and procedures to perform quality control and safe replacement of resins in ion exchanger vessels, thus improved the reactor safety aspects and volume of waste generation.

A mobile ion exchanger vessel is used to flush and if necessary saturate the resin with requisite chemicals outside the process area of use. This leads to the following advantages:

- Elimination of reactor safety risks concerning deboronation of reactor coolant when resin beds are put into service.
- Reduction of waste water to flush the bed before putting into operation.
- Avoiding combustible packing material brought into the plant, mainly to the controlled area.
- Elimination of the risks that packing material would fall into resin vessels during filling.
- Shortening of system and component outage time.
- Simplified control of impurities during flushing and saturation of resin.

Nogent, France

Mission Date; 20 Jan.-6 Feb., 2003

The power plant uses an intranet database with approved suppliers and safety data sheets of materials and products to be used on site. This Intranet database, which is managed by the technical operations unit, allows Nogent NPP to share information with all NPPs of EDF.

The corporate laboratory group supplies specifications for chemical conditioning products like resins, hydrazine etc. to guarantee that these products have no negative impact on corrosion, activity build-up and safety. These products are PMUC certified (products and materials to be used on nuclear plants).

PMUC is available in the EDF Intranet database and contains chemical specifications of the products, characteristics of approved suppliers, e.g. the expiry date of the validation granted to the supplier and address of contact.

For every product safety data sheets are kept up to date.

The Intranet guarantees a real time information feedback e.g. if a supplier does no longer meets the expectations.

As the database is accessible from any office, appropriate products are used systematically and traceable.

The team regarded the use of this database as a good practice.

Incompatibility matrix for storing chemical products in chemical laboratories.

The displaying of the matrix in all storage areas of the chemistry laboratories has brought about quick and seamless improvements in industrial safety and the storage of chemical and/or dangerous products.

The incompatibility matrix for storing chemical products is included in the Memento booklet, nuclear safety and quality expectations. It is also found on each storage cupboard for dangerous products in the chemistry laboratories.

The principles for storing dangerous substances are described in detail in the CHIRAD/00/028 procedure. The incompatibility matrix summarizes in a schematic way the elementary rules for storing chemical products. It is a quick and simple visual tool to know where a chemical product should be stored in relation to the risks pictogram(s) found on its label:

Chemical products are classified in 6 risk categories:

- Oxidant
 - Corrosive- acid
 - Flammable
 - Toxic
 - Corrosive- base
 - Harmful / irritant
- Flammable products should be stored separately from others.
 - The acids should be kept separately from the bases.
 - Harmful / irritant products and toxic products can be stored together.
 - If a product has several risk factors at the same time, the following priority must be taken in terms of classification: oxidizing > flammable > corrosive > toxic > harmful/irritant.