

NRC INTERNATIONAL TRAVEL TRIP REPORT

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Subject: IAEA workshop on ageing management for fuel cycle facilities

Dates of Travel and Countries/Organizations Visited:

9/5/2015 - 9/12/2015, Vienna, Austria. Staff went to IAEA to attend 5-day workshop on ageing.

Desired Outcome:

To understand policies, programs and measures being implemented or considered for Fuel Cycle Facility (FCF) ageing issues by other nuclear organizations.

Results Achieved:

The staff attended a workshop on fuel facility ageing issues. A number of nations provided discussions relative to ageing issues for their facilities or the facilities they regulated. At the workshop, staff served as Chairman for the purpose of conducting the workshop and for providing a report on the activities of the week.

Summary of Trip:

All licensees need to perform safety analyses to support the operation of their fuel cycle facilities. In a number of cases discussed at the workshop this week, it was stated that some regulators, despite no formal regulatory requirements, requested that the safety analyses provided to them to support the licensing of the facility renewals or new applications for a license include the safety impacts due to ageing related effects. At the present time, no formal guidance is available, even by regulators, on what constitutes an acceptable ageing management program and both regulators and licensees are confronted with uncertainty as to what the scope of activities are that are needed to satisfy regulatory requests regarding safety analyses impacts and what types and implementation of licensee programs would be acceptable. Nearly all licensees have no formal ageing management program and the majorities of licensees are either in the early stages of creating a program or are trying to justify the current programs being presently performed by the licensee meet the intended ageing management requirements. Although there is a fair amount of guidance and information on ageing management programs for nuclear reactors, it is not clear that the applicability of that guidance is meaningful due to different components, systems and structures, different hazards, and the magnitudes of consequences and associated risks. It seems clear there is some need for formalized fuel cycle facility specific guidance that defines the content of ageing management programs, provides guidelines on implementation of the program, and can be demonstrated to support the safety of the facilities for all phases of its lifetime. During the workshop, a number of presentations were made encompassing a variety of fuel cycle, spent fuel and reactor facilities with a variety of corresponding regulatory requirements at a number of international locations. Presenters discussed the statuses of ageing management programs for their

facilities and provided examples of how ageing management issues were addressed. From these presentations certain conclusions and facts may be drawn:

One of the key outputs of the safety analysis performed by licensees is the determination of the physical safety controls (SSC's) needed to assure facility safety.

Ageing management has a physical component consideration as well as a programmatic aspect supported by licensee commitments.

The safety analysis methodology used to perform supporting safety analysis for a facility doesn't have a significant impact on ageing management programs and their implementation. Whether deterministic or risk informed methods were applied, the associated requirements for the ageing management aspects of the facility were similar.

Despite no formal guidance on ageing management licensees are doing a number of related actions to support safety that would be considered in ageing management programs.

Ageing management applies to all stages of fuel cycle facility lifetime including operation and decommissioning.

Incorporating ageing management information into the design of the facility would be a prudent action for licensees.

Ageing management programs help maintain the facility safety basis as well as help prevent or mitigate against hazards to the facility.

Ageing management programs need specific definition of the content of a licensee program including the types of programs incorporated into the overall program (ie. Corrosion, defect tracking, maintenance, surveillance, etc) and information regarding the implementation of these programs and how they will be performed and managed by licensees.

The American Nuclear Society (ANS) is in the process of preparing a standard regarding fuel cycle facility and ageing management pointing out some need for formal guidance to support fuel cycle facility safety.

Pending Actions/Planned Next Steps for NRC:

The staff intends to pursue additional discussions and collect data on ageing related issues and attend future IAEA workshops on the ageing issue. The staff is also currently engaged with the American Nuclear Society (ANS) on creating a standard for guidance on fuel cycle ageing issues and implementation of ageing programs at fuel cycle facilities.

Points for Commission Consideration/Interest:

None