

Differences Between TSOs for Regulators and TSOs for Operators

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TSO is a technical and scientific support organization that provides support concerning nuclear and radiation safety issues to the national regulatory authority (NRA) “regulator” or to the nuclear industry “operator”. National regulatory authorities are responsible for licensing nuclear installations, for issuing regulations and for supervising licensed facilities during their operation, with corresponding decision making and enforcement if needed. To perform its tasks, the NRA can do everything itself, with in-house technical and scientific support. However, it is becoming difficult to have specialists in every field of nuclear technology to cover an ever increasing number of topics, including human and organizational aspects. Hence many NRAs opt for outside technical and scientific support. For instance, in the licensing process, a TSO can provide support to an NRA at all stages of the process. At the pre-conceptual phase, the design objectives must be defined for internal and external events and for the various plant operational conditions. In many countries, periodic safety reviews are required. For the initial safety assessment, the TSO can provide the NRA with an evaluation of the actions proposed by the licensee and advise it concerning any additional measures required to maintain or improve the safety of the installation and update the licensing basis. Operational experience of the plant, and of similar plants worldwide, should also be investigated by the TSO, so that the NRA can ask the licensee to identify preventive measures, avoid recurring events, and verify that lessons have been learned and modifications made have met their objectives.

In the case of accidents, the TSO can advise the NRA about the possible accident scenarios and emergency measures that might be necessary. Some TSOs have indeed developed computer codes to predict the radiological consequences of design basis accidents or more severe accidents. When a plant ceases its operations, the TSO can assess the decommissioning plan and monitor its implementation. For all these assessment activities made in support of the NRA, while the TSO should clearly define what the problems are, it should refrain from proposing solutions to the licensees, who bear the complete responsibility for the safety of the licensed installations. In this way, the TSO maintains its freedom to assess the licensee’s proposals. A last field of activity for the TSO in support of the NRA is assistance in developing regulations. As TSOs are well aware of the practices on the shop floor, they are in a position to anticipate possible difficulties in the interpretation of regulations and influence the wording so as to avoid future implementation problems.

In all the fields mentioned above, the NRA will be able to outsource the assessments to the TSO and integrate the results into its decision making and enforcement processes.

The TSO activities in support of the nuclear industry cover some of the same areas as those in support of NRAs. However, the emphasis is not only on the problems to be tackled, but also on proposals for solving them. As its contribution to the licensing process, the TSO can carry out the safety assessment of the project, identify the problem areas and indicate the best solutions. It can also help to prepare the commissioning tests, participate in them and evaluate the results. During operation, the TSO can identify/review modifications to facilitate plant operation, increase plant availability through a reduction of the outage time, prepare the periodic safety reviews, examine measures to extend the life of the installation and assess lessons learned from feedback of operational experience, both national and international. The TSO can even make inspections of the installation during operation, if the operator desires some kind of external audit. When the NRA intends to develop new regulations, the TSO can review the draft regulations and provide comments, reflecting the viewpoints of the operator so as to facilitate full compliance with the requirements. In the case of accidents, the TSO can try to develop different evolution scenarios, evaluate their possible radiological consequences and recommend appropriate countermeasures to the licensee.

Country or International Organisation

Egyptian Nuclear and Radiological Authority

Primary author: Prof. ABDEL GELEEL, Mohamed (Head of Safety of Nuclear Fuel Cycle)

Co-author: Dr TAWFIK, Amaal (Leactural in Radiation Protection Department)

Presenter: Prof. ABDEL GELEEL, Mohamed (Head of Safety of Nuclear Fuel Cycle)

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