

### 5.1.1 Treatment of Low and Intermediate Level Liquid Waste

This NE Series document will integrate safety and technical information on technologies for treatment of low and intermediate level liquid waste using Filtration, Evaporation, Chemical Treatment, Ion Exchange, Membranes, etc and supersede 26 current IAEA technical documents, namely TECDOC-1579, TECDOC-1504, TRS-431, TRS- 427, TRS-421, TECDOC-1371, TECDOC-1336, TECDOC-1325, TRS-408, TRS-402, TECDOC-1183, TECDOC-1051, TECDOC-947, TECDOC-929, TECDOC-911, TRS-370, TECDOC 689, TECDOC 675, TECDOC 656, TECDOC 654, and TRS-337, published in period from 1992 to 2007 into one consistent handbook on the subject matter for designers, operators and regulators. The objective of this document is to provide state of the art guidance to MS, to align technical information with safety assessment needs, to provide operating experience and lessons learned and to have adequate basis for development of training material required for technology transfer to less developed Member States.

The new publication should be prepared in period from 2010-12 and implemented to Member States as training material for technology transfer in 2013/14. Responsible officer is Mr. Susanta Kumar Samanta ([S.K.Samanta@iaea.org](mailto:S.K.Samanta@iaea.org)).

The following documents (titles and numbers in the table below) are proposed to be consolidated, updated and organized as a NE Series document:

| Sl. no. | Report No.  | Yr   | Report Title  |
|---------|-------------|------|---|
| 1       | TECDOC-1579 | 2007 | New developments and improvements in processing of 'problematic' radioactive waste  |
| 2       | TECDOC-1504 | 2006 | Innovative waste treatment and conditioning technologies at nuclear power plants  |
| 3       | TRS-431     | 2005 | Application of membrane technologies for liquid radioactive waste processing  |
| 4       | TRS- 427    | 2004 | Predisposal management of organic radioactive waste   |
| 5       | TRS-421     | 2004 | Management of waste containing tritium and carbon-14  |
| 6       | TECDOC-1371 | 2003 | Selection of efficient options for processing and storage of radioactive waste in countries with small amounts of waste generation                  |
| 7       | TECDOC-1336 | 2003 | Combined methods for liquid radioactive waste treatment   |
| 8       | TECDOC-1325 | 2003 | Management of low and intermediate level radioactive wastes with regard to their chemical toxicity  |
| 9       | TRS-408     | 2002 | Application of ion exchange processes for the treatment of radioactive waste and management of spent ion exchangers                                 |
| 10      | TRS-402     | 2001 | Handling and processing of radioactive waste from nuclear applications  |
| 11      | TECDOC-1183 | 2000 | Management of radioactive waste from the use of radionuclides in medicine   |
| 12      | TECDOC-1051 | 1998 | Management of radioactive waste from <sup>99</sup> Mo production  |
| 13      | TECDOC-947  | 1997 | Waste treatment and immobilization technologies involving inorganic sorbents  |
| 14      | TECDOC-929  | 1997 | Treatment technologies for low and intermediate level waste from nuclear applications – Final report of a co-ordinated research programme 1991-1996 |

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| 15 | TECDOC-911 | 1996 | Processing of nuclear power plant waste streams containing boric acid  |
| 16 | TRS-370    | 1994 | Advances in technologies for the treatment of low and intermediate level radioactive liquid wastes                                       |
| 17 | TECDOC-689 | 1993 | Treatment and conditioning of spent ion exchange resins from research reactors, precipitation sludges and other radioactive concentrates |
| 18 | TECDOC-675 | 1992 | Use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories                             |
| 19 | TECDOC-656 | 1992 | Treatment and conditioning of radioactive organic liquids  |
| 20 | TECDOC-654 | 1992 | Handling and treatment of radioactive aqueous wastes   |
| 21 | TRS-337    | 1992 | Chemical precipitation processes for the treatment of aqueous radioactive waste  |
| 22 | TRS-236    | 1984 | Treatment of low and intermediate-level liquid radioactive wastes  |
| 23 | TRS-136    | 1972 | Use of local minerals in the treatment of radioactive waste  |
| 24 | TRS-87     | 1968 | Design and operation of evaporators for radioactive wastes   |
| 25 | TRS-82     | 1968 | Treatment of low and intermediate-level radioactive waste concentrates   |
| 26 | TRS-78     | 1967 | Operation and control of ion- exchange processes for treatment of radioactive wastes   |