

ASME White Paper on RW System Design for the Next Generation of Nuclear Power Plants.

- System capacity (tank space especially) should be designed at twice the projected volume / capacity needs. Past experience has shown that there is almost never enough tank space to handle real operational conditions that exceed early worst-case estimates. Out-of-specification water is too easy to generate.
- Plant drain systems should segregate floor, equipment and chemical waste drains.
- Radwaste tanks should be capable of independent operation to allow segregation and batch processing.
- Radwaste tanks should be interconnected to allow transfer of liquids from one process to another.
- Radwaste tanks should be capable of independent sampling to permit easy identification of the required process.
- Radwaste tanks (liquid and solid) should have sloped or conical bottoms with full bottom drain capacity to allow complete removal of any solids.
- Radwaste piping systems should be designed with minimal bends and high radius turns on solid systems.
- Valves, motors, pumps & other equipment requiring maintenance or repair should be segregated and shielded from tanks or other sources of radiation.
- Radwaste buildings should have adequate truck bay space to permit loading / unloading of multiple shipments simultaneously and / or provide for long-term loading of containers.
- Radwaste buildings should have 'spare' space for the installation of mobile and specialty equipment. Each 'spare' space should have piping connections for waste transfer and access to water, power and air supplies.
- Crane access to truck bays, loading areas, 'spare' equipment areas and processing areas is essential.
- Radwaste buildings need adequate shielding for processing and loading packages. Shielded areas should be capable of being segregated so that different types of processing can occur simultaneously.
- Radwaste buildings should have direct access to the plant location with the highest volume waste generation.
- Radwaste buildings should contain adequate storage space for long-term LLRW storage in case of problems or lack of access to disposal. Storage areas should be located to minimize the effort involved in transferring containers into and out of storage for shipping.
- LLRW storage areas should be analyzed for long-term (>5year) storage.