

Ejectors for the Nuclear Industry

Transvac has been supplying custom designed Ejector technology to the Nuclear industry for over 30 years.

Each Ejector is custom designed to suit a customers individual process requirements to ensure maximum operating efficiency.

Transvac can undertake a full design study to assess the viability of using an Ejector for a specific application.

Liquid Jet Pumps to directly entrain and pump Nuclear Waste

Typically motivated by pressurised water, Liquid Jet Pumps can be used to entrain and transfer radioactive waste from settlement tanks / ponds.

Liquid is often used to transport radioactive slurries in order to maintain velocity within long discharge pipelines and thereby prevent solids settlement.

Transvac can offer Liquid Jet Pump designs in standard materials; such as 316L stainless steel or with ceramic internals to resist wear when pumping abrasive slurries.

If required, Transvac can offer test facilities to produce operating envelopes for each Jet Pump design. Transvac can also offer a range of inline separators downstream of the Jet Pump to separate solids and liquids.

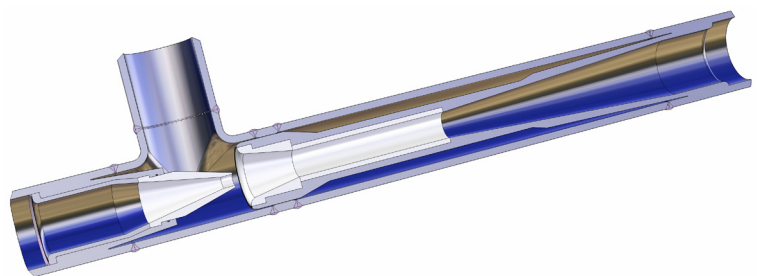
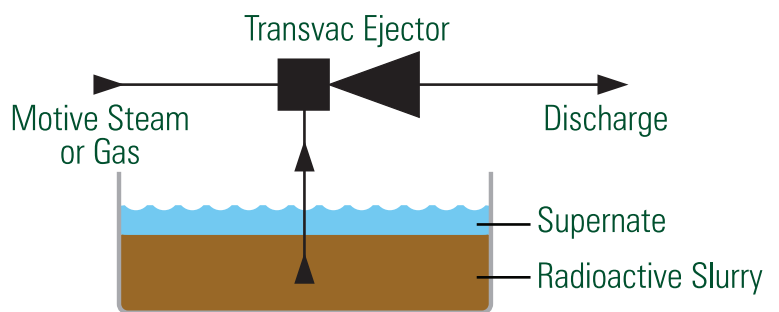
Steam and Gas Jet Syphons to directly entrain and convey Nuclear Waste

Steam is a very effective medium to motivate Ejectors when directly pumping radioactive slurries over short distances. One advantage of using steam is that it is easy to provide and adds very little additional liquid to the radioactive slurry being pumped, which can be major benefit for downstream processes. Typically discharge pressures would be >2 barg.

Gas is not an effective medium for directly entraining and pumping liquids. It can only be used as the motive fluid for entraining and pumping small quantities of liquids / slurries over short distances.

Advantages of Ejectors for Nuclear Applications

- No moving parts
- No Maintenance
- Reliable Operation
- Proven Design
- Simple to control
- Easy to install within pipelines
- Abrasion resistant materials



Transvac Nuclear Ejector complete with Ceramic internals

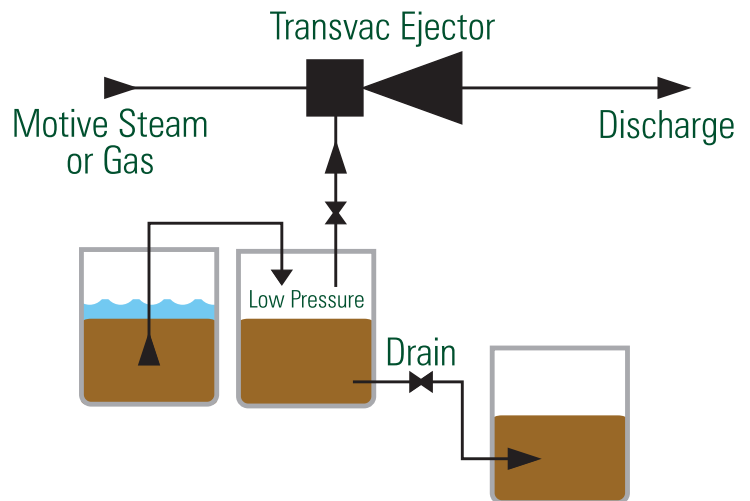
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Steam and Gas Jet Ejectors to indirectly transfer Nuclear Waste

Steam, Air or Nitrogen can be used to motivate an Ejector to create a vacuum within a transfer vessel to draw in liquids / slurries. Steam, Air or Nitrogen is not in direct contact with the fluid being pumped.

Once the volume of liquid reaches a preset level in the transfer vessel the Ejector is switched off. The vessel contents can then be simply drained by gravity to the discharge point.

This quantity pumped is dependant on the volume of the transfer vessel, but it is usually used for transferring small quantities of suction fluids.



Jet Mixers for Tank Mixing

Tank Jet Mixers provide a simple method of mixing / agitating tanks with no in-tank moving parts and no maintenance.

Performance is controllable by adjusting the motive fluid flow provided by an external pump.

Each Tank Jet Mixer is designed to suit the process mixing requirement and single Mixers or a number of mixers mounted on an intank manifold are available.

Transvac can offer the basic mixers or a complete system including pipework, pumps and valves. Materials of construction can offered in most materials including ceramics.



Tank Jet Mixer Nozzles

Gas Pollution Control Systems

Transvac are specialist suppliers of custom designed air pollution control systems covering a number of technologies. Systems include Wet Scrubbing, Activated Carbon Absorption, Thermal Oxidisers and Bio-filtration.

Transvac has supplied scrubber packages to Dounreay to scrub gases from a ventilation system.



Transvac Jet Tower Scrubbing System