

Rationale for the Emissions Unit Level Forms for the Cascade Process Vents

The main process at the Portsmouth Gaseous Diffusion Plant (PORTS) is the enrichment of uranium hexafluoride to increase the concentration (assay) of the uranium 235 isotope. The main process equipment is the gaseous diffusion cascade and its ancillary processes without which the cascade will not operate. In 1995 and 1996, the Ohio EPA issued air permits to the plant for approximately 56 minor radiological sources which the operator, the United States Enrichment Corporation (USEC) deemed to contain unnecessary and burdensome requirements. USEC appealed the terms and conditions.

As a result of the appeal, the permits were stayed until the issuance of the Title V air permit. It was agreed that USEC would include the two main emissions sources as non-insignificant and that the remainder of the radiological vents would be considered insignificant. The effective dose equivalent from plant emissions has always been well below the USEPA limit of 10 millirem per year (mrem/yr). This is an extremely conservative limit because the average person receives approximately 360 mrem/yr from natural sources.

All of the pertinent process description has been attached to the most significant source, the Top Purge Cascade Vent (P458). In order to pass the STARShip quality check, it was necessary to attach at least one document to the facility level application for the second source, the Side Purge Cascade Vent (P459). This present document and the cascade process drawing have been attached to this source to pass the quality check. This present document has also been attached to the Top Purge Cascade (P458).