UF_6 Cylinder Storage Yard Descriptions
For Portsmouth

At the Portsmouth Gaseous Diffusion Plant there are two UF_6 cylinder storage yards (X-745C and X-745E) managed for the Department of Energy (DOE). In addition to these two storage yards, DOE is temporarily storing additional cylinders on a leased storage yard, X-745G until the X-745C yard expansion is completed. Below is a description of the DOE storage yards followed by a tabular summary, Table 1.

X-745C Cylinder Storage Yard

The X-745C cylinder storage yard is located at the northwest corner of the Portsmouth Site inside the limited area fence (controlled access area – NRC terminology). This storage yard has open access from inside the limited area and is a non-leased facility. The yard is posted as a radioactive controlled area, radioactive material, PNAD required for access as well as hazard communications signs for uranium hexafluoride. It is a Category 2 nuclear facility by PAAA requirements.

This storage yard is Portsmouth's oldest concrete surfaced storage yard. It was built in sections, as more space was required. The oldest section of the yard (Section 1) was constructed in 1975. Figure 1 shows a view of Section 1 from Patrol Road West. Concrete thickness is different depending on whether the technical specifications called for reinforced or non-reinforced concrete. Reinforced concrete is 8 inches thick while un-reinforced concrete is 11 to 12 inches thick.

Figure 1. Section One - X-745C from Patrol Road West.

The total currently paved area (completed in 1980) is approximately 600,000 ft.^{2} with a capacity of approximately 14,000 model 48G cylinders double stacked with 4' isle spacing and 60 inches center-to-center stacking configuration. (NOTE: If stacker pathways were utilized for cylinder storage,

the capacity would be + 17,000 cylinders). A small area adjacent to the extreme southeast section of the yard is compacted gravel. Only clean empty cylinders are stacked in this area on wooden saddles (see Fig. 2). Table 1 includes the saddles in this area adjacent to the yard.

Figure 2. Empty cylinder storage - gravel area of X-745C.

Storage yard X-745C primarily contains double stacked full 14-ton depleted uranium cylinders. All depleted cylinders have been restacked on concrete saddles with 4" isle spacing on concrete saddles. Section 4 of this yard contains full, USEC owned normal feed cylinders (these cylinders may be transferred to DOE). The USEC normal feed cylinders are double stacked such that there is virtually no isle between the cylinders and are still on wood saddles (see Fig. 3).

Figure 3. USEC NF cylinder on wood cradles - no aisle space - DFF&O sample point.

The cylinder yard is bounded by grassy areas which provide storm water run-off ditches. These grassy areas are of varying widths. There are 3 paved vehicle entrances to the yard. They are wide enough for cylinder stacker operations. One is on the eastern side, (off of Scioto Avenue) and two on the northern side (off of 20th Street). Access to Section 1 can be achieved anywhere along its northern edge (gravel). (NOTE: 20th Street at one time was paved with asphalt. Restacking operations required the asphalt be taken up and a compacted gravel be laid down). The South side of the yard has an asphalt road (19th Street) which is in a state of poor repair. The western most portion of the yard (Section 1) is bounded by the perimeter fence patrol road.

Figure 4. Northern paved entrance to X-745C.

There are lights mounted on wooden poles around the periphery of the cylinder yard. One 60-foot light pole sits in the middle of Section 5. It can be seen to the extreme left in Figure 4 above.

The yard has fire-fighting plugs around the yard periphery at various locations. There are 4 down the southern edge of the yard next to 19th Street. There are 2 on the eastern edge of the yard next to Scioto Avenue. There are 2 fire plugs on the northern edge of the yard next to 20th Street.

Surface water run-off must be sampled monthly according to an agreement (DFF&Os) with the OEPA. There are two points of sample on the south edge of the yard and one point of sample on the North edge of the yard in the area of Section 4.