(iv) ''Product'' or ''tails'' stations used to transfer UF6 into containers.

(12) UF6/carrier gas separation systems (MLIS).

Especially designed or prepared process systems for separating UF6 from carrier gas. The carrier gas may be nitrogen, argon, or other gas.

These systems may incorporate equipment such as:

(i) Cryogenic heat exchangers or cryoseparators capable of temperatures of −120 °C or less;

(ii) Cryogenic refrigeration units capable of temperatures of −120 °C or less; or

(iii) UF6 cold traps capable of temperatures of −20 °C or less.

(13) Lasers or Laser systems (AVLIS, MLIS and CRISLA).

Especially designed or prepared for the separation of uranium isotopes. The laser system for the AVLIS process usually consists of two lasers: a copper vapor laser and a dye laser. The laser system for MLIS usually consists of a CO_2 or excimer laser and a multi-pass optical cell with revolving mirrors at both ends. Lasers or laser systems for both processes require a spectrum frequency stabilizer for operation over extended periods.

[61 FR 35605, July 8, 1996]

APPENDIX G TO PART 110—ILLUSTRATIVE LIST OF PLASMA SEPARATION ENRICHMENT PLANT EQUIPMENT AND COMPONENTS UNDER NRC EXPORT LICENSING AUTHORITY

NOTE—In the plasma separation process, a plasma of uranium ions passes through an electric field tuned to the 235U ion resonance frequency so that they preferentially absorb energy and increase the diameter of their corkscrew-like orbits. Ions with a large-diameter path are trapped to produce a product enriched in 235U. The plasma, made by ionizing uranium vapor, is contained in a vacuum chamber with a high-strength magnetic field produced by a superconducting magnet. The main technological systems of the process include the uranium plasma generation system, the separator module with superconducting magnet, and metal removal systems for the collection of ''product'' and ''tails''.

(1) Microwave power sources and antennae.

Especially designed or prepared microwave power sources and antennae for producing or accelerating ions having the following characteristics: greater than 30 GHz frequency and greater than 50 kW mean power output for ion production.

(2) Ion excitation coils.

Especially designed or prepared radio frequency ion excitation coils for frequencies of more than 100 kHz and capable of handling more than 40 kW mean power.

(3) Uranium plasma generation systems.

Especially designed or prepared systems for the generation of uranium plasma, which may contain high power strip or scanning electron beam guns with a delivered power on the target of more than 2.5 kW/cm.

(4) Liquid uranium metal handling systems.

Especially designed or prepared liquid metal handling systems for molten uranium or uranium alloys, consisting of crucible and cooling equipment for the crucibles.

The crucibles and other system parts that come into contact with molten uranium or uranium alloys are made of or protected by corrosion and heat resistance materials, such as tantalum, yttria-coated graphite, graphite coated with other rare earth oxides or mixtures thereof.

(5) Uranium metal ''product'' and ''tails'' collector assemblies.

Especially designed or prepared ''product'' and ''tails'' collector assemblies for uranium metal in solid form. These collector assemblies are made of or protected by materials resistant to the heat and corrosion of uranium metal vapor, such as yttria-coated graphite or tantalum.

(6) Separator module housings.

Especially designed or prepared cylindrical vessels for use in plasma separation enrichment plants for containing the uranium plasma source, radio-frequency drive coil and the ''product'' and ''tails'' collectors.

These housings have a multiplicity of ports for electrical feed-throughs, diffusion pump connections and instrumentation diagnostics and monitoring. They have provisions for opening and closure to allow for refurbishment of internal components and are constructed of a suitable non-magnetic material such as stainless steel.

[61 FR 35606, July 8, 1996]

APPENDIX H TO PART 110—ILLUSTRATIVE LIST OF ELECTROMAGNETIC ENRICHMENT PLANT EQUIPMENT AND COMPONENTS UNDER NRC EXPORT LICENSING AUTHORITY

NOTE—In the electromagnetic process, uranium metal ions produced by ionization of a salt feed material (typically UCL4) are accelerated and passed through a magnetic field that has the effect of causing the ions of different isotopes to follow different paths. The major components of an electromagnetic isotope separator include: a magnetic field for ion-beam diversion/separation of the isotopes, an ion source with its acceleration system, and a collection system for the separated ions. Auxiliary systems for the process include the magnet power supply system, the