Immobilization vs. **Pu/MOX Fuel**

Key Factors	**Pu to Waste [Immobilization]**	**Pu to Nuclear Fuel to Waste [MOX}**
Metric tonnes (MT) plutonium (Pu) suitable for processing	17-50	0 – 34
Plutonium "product"	ceramic "pucks" containing depleted uranium, titanate mineral, and ~5% plutonium. **Not a commercial product.**	ceramic "pellets" containing depleted uranium and ~5% plutonium. **Must meet stringent commercial specifications**
Final "disposition" form	ceramic pucks in stainless steel cans surrounded by highly radioactive waste	ceramic pellets in zirconium-clad fuel rods in highly radioactive irradiated fuel assembly
Final "disposal" site	National Geologic Repository	National Geologic Repository
Pu processing requirements	"Dry" processes require no liquid purification	Plutonium purification involving nitric acid, oxalic acid, silver nitrate, and other explosive combinations.
Radioactive liquid waste production	0	~ 300,000 gallons/year; including ~80,000 Curies/Year of Am-241
# of federally-escorted, heavily guarded shipments of Pu/MOX fuel from SRS to Duke Reactors near Charlotte, NC and Rock Hill, SC	0	~450
Increased risk of nuclear accidents at Catawba and McGuire NPPs and radioactive contamination of Greater Charlotte and Rock Hill areas	0	Present, not quantified
Ventilation system proposed in plutonium processing facility	Robust, fire resistant, low maintenance sand filters, low vulnerability to sabotage	HEPA filters with history of vulnerabilities to fires, high maintenance costs, and vulnerable to sabotage
Risk from Heavy Crane operations	0	Present, not quanitified risk of criticality accidents during hoisting of fuel assemblies
Latest Cost-Estimate	**$1.5 billion**	**$3.2 billion**