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To: AdvancedReactors-GEISDocsPEm Resource
Subject: NRC - Comparison of Conventional Mill, Heap Leach, and In Situ Recovery Facilities
Attachments: NRC 2020 RecFacil.pdf

Comparison of Conventional Mill, Heap Leach, and In Situ Recovery Facilities

Through the years, the U.S. Nuclear Regulatory Commission (NRC) has licensed numerous uranium recovery facilities in the United States, which used a variety of extraction methods to glean uranium from ore. The following table compares the features of the three main types of facilities, which include conventional uranium mills, heap leach/ion-exchange facilities, and in situ recovery facilities.

Feature	Conventional Uranium Mill	Heap Leach Facility	In Situ Recovery Facility
Recovery Method	Physical and chemical process to extract uranium from mined ore.	Physical and chemical process to extract uranium from mined ore that has been piled in a heap.	Chemical process to extract uranium from underground deposits.
Siting/Location	Generally located in the vicinity of the ore body. Mined ore can be trucked from the mine to the mill. The mine can be either a deep underground shaft or a shallow open pit. The NRC does not regulate the mining of ore.	Generally located in the vicinity of the ore body. Mined ore can be trucked from the mine to the mill. The mine can be either a deep underground shaft or a shallow open pit. The NRC does not regulate the mining of ore.	The wellfield area is located within the ore body. The processing plant is typically in the vicinity of the ore body.
Surface Features	Mill building(s), process tanks, tailings impoundment, and	Process buildings, heap pile consisting of ore crushed to a size of approximately 1-inch in diameter, with an engineered liner system	Wellfield(s) consisting of groundwater injection and extraction wells, header house(s), pipes, processing facility, storage or

