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Nevada Site Office Environmental Management

EM NEWS FLASH

Cleanup of Historic Nuclear Rocket Development Facility Blasting Off

BOOM! That's the sound of stimulus funding at work on the Nevada Test Site (NTS) demolishing the Reactor Maintenance, Assembly, and Disassembly (R-MAD) building. Decontamination and decommissioning (D&D) of R-MAD moved up in priority with the availability of American Recovery and Reinvestment Act funding and, in turn, this complex work generated more than 15 full-time positions.

R-MAD is one of several NTS facilities which supported the Nuclear Rocket Development Station program that ended in 1973. D&D of the 80 room, five-level facility is occurring in four phases. Upon completion of D&D, the resulting debris will be appropriately disposed, some of which will be permanently entombed in the facility basement areas. Kevin Cabble, Industrial Sites Federal Sub-Project Director, said "We are following through with our commitment to the State in accordance with the [Federal Facility Agreement and Consent Order \(FFACO\)](#). We want to complete demolition of R-MAD safely and efficiently with the prudent use of taxpayer dollars and approval from the State."

Phase I of D&D, which began in November, included traditional demolition (without explosives) of some portions of the building including the small metal exhaust stack. In addition, the removal of asbestos contained in roofing materials and pipe elbow insulation was accomplished.



Phase I traditional demolition of R-MAD using a hydraulic hammer to dismantle a section of the south block wall and roof. A processor is used to size-reduce the resulting debris.

The R-MAD building was used from 1959 to 1970 for the assembly and disassembly of reactors under the [Nuclear Rocket Development Station](#) program Project Rover. R-MAD assembly high bays were used to load reactor rockets on rail cars for transfer to the test facilities. After the tests were completed, the reactor rockets were transferred back to the R-MAD disassembly high bay hot cell. The reactor rocket was removed from the rail car and large scale disassembly activities performed. The reactor sections of the rocket were transferred to the smaller postmortem hot cells for detailed inspection and dissection. The nuclear fuel associated with the reactor was removed and subsequently transferred to the Idaho National Laboratory in 1975 for reprocessing.

With asbestos removal complete, the

focus shifts to Phase II activities including additional demolition to remove lead doors and plates and size-reducing, packaging, and shipping building debris for disposal at the appropriately regulated facility on the NTS.

Non-explosive demolition during Phase II is accomplished using a track hoe outfitted with a hydraulic hammer to tear down the R-MAD building into pieces. If these pieces are bigger than

three feet, another track hoe outfitted with a processor will break the debris down into smaller pieces for waste packaging. It is important to note that dust suppression methods are used to ensure the safety of the workers, the public and the environment during the entire demolition of R-MAD.

Explosive demolition will occur during Phases III and IV in order to remove building elements still standing including the mezzanine, high bay, the main exhaust stack and the water tower. In preparation for explosive demolition, the concrete walls above the observation windows will be removed so that only columns remain. Holes will be drilled into these columns and explosives placed inside. These explosives are meant to drop the building as much as 40 feet. After building collapse, a hydraulic hammer will break away the remaining concrete and reduce it to the appropriate size for disposal.



Demolition progress at R-MAD Facility, December 2009

It is estimated that approximately ten percent of the R-MAD debris will be closed in place within the three different basement areas which will be capped with approximately one foot of concrete to permanently entomb the debris, making it inaccessible. This method of disposal is accomplished at a significant savings by avoiding specialized packaging and shipping costs. The remaining building debris will be packaged into lined dump trucks and shipped to the NTS Area 5 Radioactive Waste Management Site for disposal.

R-MAD demolition is expected to be complete by March 2010, as the Nevada Site Office begins demolishing the Pluto Disassembly Facility. [Pluto](#), another NTS facility that supported the development of nuclear reactors for flight, was home to the earthbound Tory II-A reactor and its flyable counterpart, the Tory II-C.

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