Spring 2025

Kesselring Site Defueling of the MARF Prototype

In 2019, the Kenneth A. Kesselring Site in West Milton, NY shutdown one of its remaining two nuclear propulsion plants (also known as the MARF prototype) that provided hands-on training to United States' Naval nuclear operators. The MARF prototype also provided a platform for operational testing of new designs and technologies. In order to start dismantlement and remediation, the MARF prototype has been defueled. Defuelings are well-developed processes and are safe for the community.

Q: What is a Defueling?

A: Defuelings are well-developed processes performed on nuclear-powered aircraft carriers and submarines at nuclear-capable shipyards and the land-based prototypes at the Kesselring Site. Defuelings involve the removal of spent nuclear fuel and inactivation of the entire prototype or ship. Since 1957, the Naval Nuclear Propulsion Program has successfully completed more than 457 refueling and defueling actions. As part of that accomplishment, the Kesselring Site has conducted twelve refueling and defuelings in its history.

Conservative and precise procedures that incorporate years of operational experience are used to complete defueling work tasks. Skilled and experienced shipyard workers from Norfolk Naval Shipyard are utilized to perform the defueling work at the Kesselring Site.

Q: What part of the Defueling will I see driving around town?

A: All of the defueling work is occurring at the Kesselring Site. To support the defueling, spent nuclear fuel is being shipped to the Naval Reactors Facility on the Idaho National Laboratory. Since this shipment involves a large shipping container and the Kesselring Site is not directly serviced by a rail line, a heavy haul vehicle is used to transport the shipping container to the Ballston Spa Industrial Track. The Kesselring Site has used this Ballston Spa Industrial Track many times over the years, most recently in 2024.

The shipment will be made from the Kesselring Site to the Ballston Spa Industrial Track using a heavy haul vehicle (See Figures 1-2). The Heavy Haul vehicle travels very slowly (approximately five miles per hour) between the Kesselring Site and the Ballston Spa Industrial Track. The shipment will be in full compliance with all federal, state, and local requirements. The travel route for the heavy haul vehicle is shown in Figure 4. The Heavy Haul vendor will coordinate the shipment with the New York State Department of Transportation, Saratoga County, and the Village of Ballston Spa.

Q: When will this work be done?

A: The Defueling activity at the Kesselring Site began in November 2024. The outgoing rail shipment from the Kesselring Site to the Ballston Spa Industrial Track is planned for Summer 2025. The Kesselring Site contracted with a subcontractor (Lucia Specialized Hauling) to move the shipment from the Kesselring Site to the Ballston Spa Industrial Track. The subcontractor responsible for conducting the heavy haul will obtain all the proper permits, account for height restrictions, and follow all oversize shipment procedures as required by the New York State Department of Transportation. They will also coordinate with State, county

and local officials to coordinate road closures and impacts to traffic patterns. Local Law Enforcement will ensure roadways are appropriately controlled.

Q: What type of preparation and maintenance must be done to the track?
A: An inspection and brush clearing at the Ballston Spa Industrial Track were conducted. Additionally, Heavy Hauler ground preparation at rail siding in preparation for equipment receipt, which includes leveling and pad placement, was completed. Protective barriers have also been established to limit access and ensure safety in the vicinity of the work area.

Q: Who performed the track preparation and maintenance?
A: Riegel Rail and Lucia Specialized Hauling are experienced contractors with this type of rail preparations and maintenance. Contracts have been awarded to these contractors and initial preparations are complete.

Q: Are the preparations, maintenance, and future efforts going to be disruptive? (examples: loud, off-hour work, etc.)
A: There are no plans for work to occur during evening and weekend hours. Timing of railcar delivery and efforts to meet train schedules may result in some off-hour work that will be minimized to the extent practical. Protective barriers have been established to limit access and ensure safety in the vicinity of the work area.

Q. What is being shipped?
A. After defueling the MARF reactor, spent nuclear fuel will be shipped in a specially designed shipping container.

Q: How many shipments are there going to be?
A. There is one outbound shipment from Kesselring site to the Ballston Spa Industrial Track planned for Summer 2025. The inbound shipment to the Kesselring Site occurred in Spring 2024.

Q: Is this safe?
A: Yes. Each shipment is made in compliance with applicable Department of Transportation (DOT), Department of Energy (DOE), Nuclear Regulatory Commission (NRC), and state regulations and poses no danger to the public. The containers are very robust and were rigorously analyzed and tested to demonstrate performance in a range of situations. From the first shipment of Naval spent nuclear fuel in 1957, the Naval Nuclear Propulsion Program has safely shipped 924 containers of Naval spent nuclear fuel without a single injury to a member of the public or any release of radioactivity.

Q: What is the shipment for?
A: To support the inactivation of the MARF Prototype, the Kesselring Site is conducting a Defueling and Layup Availability of the MARF Prototype which requires shipping a loaded spent nuclear fuel shipping container.

Q: Is the shipment radioactive?
A: Yes. The shipment contains radioactive material which is contained entirely in a specialized shipping container. Each shipment is made in compliance with applicable DOT, DOE, NRC, and state regulations and pose no danger to the public.

Q: Who regulates this kind of shipment?
A: Each shipment is being transported in accordance with applicable DOT, DOE, NRC, and state regulations.

Q: What work will happen at the Ballston Spa Industrial Track?
A: The Ballston Spa Industrial Track is owned by Canadian Pacific Kansas City Railway (CPKC). CPKC and a qualified subcontractor have inspected the rail track, ballast, and ties to meet the requirements of the shipments that will occur. In addition, CPKC and a subcontractor cleared brush in the area as needed to

ensure adequate space existed for the work and shipments. Protective barriers have been installed to limit access and ensure safety in the vicinity of the work area.

When shipments occur from the Kesselring Site to the Ballston Spa Industrial Track, the Heavy Haul subcontractor at the Kesselring Site will transport and deliver the Heavy Haul vehicle carrying the shipment to the Ballston Spa Industrial Track. The Heavy Haul vehicle travels very slowly (approximately five miles per hour) between the Kesselring Site and the Ballston Spa Industrial Track. Over the course of the next several days, the subcontractor transfers the shipment from the Heavy Haul vehicle to the rail car. The rail car is then inspected by an independent subcontractor followed by Canadian Pacific to ensure it meets rail transport requirements, the locomotive arrives, and the rail car is connected and transported from the Ballston Spa Industrial Track to its destination. Consistent with Naval Nuclear Propulsion Program procedures, couriers will continuously escort the shipment of spent nuclear fuel. Local law enforcement will assist in traffic control during the heavy haul portion of the transit.

Q: How will the shipments travel to the Ballston Spa Industrial Track?
A: Shipment to the Ballston Spa Industrial Track will normally start after the morning traffic rush and school bus drop-off period and will take several hours. The travel route for heavy haul vehicles is shown in Figure 3. The Kesselring Site has used this same route previously. The travel route will be surveyed for any interferences (e.g., traffic lights, utility cables) in advance of the scheduled shipment to allow time to make any adjustments and on the day of the transport, support vehicles from the utilities will lift and relocate wires and obstacles as necessary. Figure 5 shows what a typical equipment shipping container looks like.

Q: What happens to the spent nuclear fuel after it leaves Kesselring?
A: Naval spent nuclear fuel is shipped to the Naval Reactors Facility on the Idaho National Laboratory. The shipments occur via rail and are always accompanied by Naval Nuclear Propulsion Program shipment couriers. Since 1957, the Naval Nuclear Propulsion Program has made 924 container shipments of Naval spent nuclear fuel to the Idaho National Laboratory. These shipments have all been done safely with no release of radioactivity and no injury to the workers or the public.

Q: How do I know I will be safe?
A: Shipping containers for spent nuclear fuel are very robust and have been rigorously analyzed and tested to demonstrate performance in a range of situations. The Naval spent nuclear fuel shipping containers are certified as Type B Nuclear Regulatory Commission/Department of Energy containers and are manufactured from solid stainless steel. Each shipment is made in compliance with applicable DOT, DOE, NRC, and state regulations and poses no danger to the public. Because of the robust design and the fact that the containers are at least 10” thick solid stainless steel, if you stood six feet away from a loaded shipping container for a full day you would receive approximately the same amount of radiation that is involved with a typical chest x-ray (10 millirem). Everyday life exposure to radiation is about 300 millirem/year from soil, rocks, cosmic rays and radon.

Q: Who operates the Kesselring Site?
A: The Naval Nuclear Laboratory operates the site. The Naval Nuclear Laboratory is dedicated solely to the support of the United States Naval Nuclear Propulsion Program and is operated by Fluor Marine Propulsion LLC, a wholly owned subsidiary of Fluor Corporation.

Q: Who is involved in this project?
A: The Naval Nuclear Laboratory has been working extensively with Saratoga County, New York State Department of Health, New York State Department of Homeland Security, New York Department of Environmental Conservation, New York State Police Department, and local elected officials.

Q: What communications have been conducted with surrounding Local, County, State and Federal officials?
A: The Naval Nuclear Laboratory conducts meetings, training, and information exchange sessions with surrounding Local, County, State and Federal officials. For the MARF Prototype Defueling general discussions began in 2023 to lay the groundwork for the project and specific discussions began in early 2024. These

discussions have continued at key milestones throughout the project. The intent of these discussions was to ensure that stakeholders were aware of the events supporting the MARF Prototype Defueling.

Q: Has there ever been an issue with the shipment of Naval spent nuclear fuel?
A: 924 shipments of Naval spent nuclear fuel have been completed safely without a single injury to a member of the public or any release of radioactivity.

Q: Are these nuclear weapons? Are they making nuclear weapons now at Kesselring?
A: These are not nuclear weapons, and we do not make nuclear weapons at our sites. The Kesselring Site provides trained world class nuclear operators to ensure the safe and reliable operation of the reactors that provide propulsion power to our nation's submarine and aircraft carrier Fleet.

Q: When will the MARF Prototype be dismantled?
A: The schedule for MARF Prototype dismantlement has not yet been finalized.

Q: Is the MARF Prototype of historical interest?
A: No. The Naval Reactors Laboratory Field Office works closely with the New York State Historic Preservation Office to ensure compliance with the National Historic Preservation Act. Dismantlement of the MARF Prototype was evaluated and determined not to be a contributing element to the Historic District.

Q: Who do we talk to if we have any questions?
A: Specific questions can be sent to:

- Mr. Chris Miller, Naval Nuclear Laboratory Public Affairs
  email: NNLpublicaffairs@unnpp.gov; phone: (518) 395-4413
- Mr. Andre Delvaux, Saratoga County Emergency Services
  email: adelvaux@saratogacountyny.gov; phone: (518) 885-2232
- Mr. Mike Stanley, Saratoga County Emergency Services
  email: mstanley@saratogacountyny.gov; phone: (518) 885-2232

Figure 1 Heavy Haul Convoy Transporting Shipping Container (June 2018)

Figure 2 Heavy Haul Convoy Transporting Shipping Container (June 2018)

Figure 3: Travel Route for Heavy Haul Vehicle between the Ballston Spa Industrial Track and Kesselring Site

Figure 4: Shipping Container at the Ballston Spa Industrial Track Being Transferred from the Heavy Haul Vehicle