

Spring 2024

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 a 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 will be 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 Naval aircraft carriers and submarines at nuclear-capable shipyards and the prototypes at the Kesselring Site. Defuelings involve the removal of nuclear fuel and inactivation of the entire prototype or ship. Throughout the last sixty years the Naval Nuclear Propulsion Program has successfully completed more than 457 refueling and defuelings. As part of that accomplishment, the Kesselring Site has conducted eleven refueling and defuelings in its history and this will be the third defueling of a prototype.

Kesselring Site is nearing completion of a new work facility which will ensure that the process can be completed safely and efficiently. Defueling equipment that has successfully been used at shipyards will be sent to Kesselring and used during the defueling operations. Conservative and precise procedures that incorporate years of operational experience are being used to complete the defueling work tasks. Skilled and experienced Shipyard workers from Norfolk Naval Shipyard are present at Kesselring to perform the defueling work. They will complete extensive familiarization training to perfect their skills using mock-ups in advance of actual work.

Q: What will I see driving around town?

A: All of the work will occur at the Kesselring Site. To support the defueling, equipment is being shipped to and from the Kesselring Site from nuclear-capable shipyards and vendors. Some of the equipment shipments are large and since the Kesselring Site is not directly serviced by a rail line, the Ballston Spa Industrial Track has been identified as the best location to transfer the shipments from a rail car to a heavy haul vehicle. The Kesselring Site has used this Ballston Spa Industrial Track many times over the years, most recently in 2021.

Two railcar shipments total (one to the site, and one from the site) of the spent fuel shipping container are required to support the defueling. The shipments contain radioactive material.

The first inbound railcar shipment from the Ballston Spa Industrial Track to the Kesselring Site is planned for May 2024. The shipments to and from the Kesselring Site will be made using heavy haul vehicles (See Figures 1-3). All shipments 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 shipments with the New York State Department of Transportation, Law Enforcement Agencies, Saratoga County, and the Village of Ballston Spa.



Q: When will this work be done?

A: The Defueling activity at the Kesselring Site will begin November 2024. The incoming rail shipment from the Ballston Spa Industrial Track to the Kesselring Site is planned in May 2024, with the return shipment planned for summer 2025. The Kesselring Site contracted with a subcontractor (Lucia Specialized Hauling) to move the shipments to and from the Ballston Spa Industrial Track and the Kesselring Site and that subcontractor will obtain the proper permits and coordinated with local authorities. As such, all shipments will comply with Federal and New York State requirements and regulations.

Q: What type of preparation and maintenance must be done to the track?

A: The rail route will remain within the track area as it exists now. An inspection and brush clearing at the spur were conducted. Additionally, Heavy Hauler ground preparation at the Industrial Track 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, and were both involved in recent past shipments. 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: The Defueling requires shipments by rail and heavy haul vehicle. These include an empty and loaded spent fuel shipping container.

Q: How many shipments are there going to be?

A: There will be 2 shipments (one inbound and one outbound) that will occur over a two-year period between 2024 and 2025.

Q: Is this safe?

A: Yes. Each shipment is made in compliance with applicable DOT, DOE, NRC, and state regulations and pose 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 Reactors Program has safely shipped over 920 containers of Naval spent nuclear fuel without a single injury to a member of the public or any release of radioactivity.

Q: What are the shipments for?

A: To support the inactivation of the MARF Prototype, the Kesselring Site will be conducting a Defueling of the MARF Prototype which requires shipping an empty and loaded spent fuel shipping container.

Q: Are these shipments radioactive?

A: Yes. The shipments contain radioactive material. 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. Canadian Pacific Kansas City and a qualified subcontractor have inspected the rail track, ballast, and ties to meet the requirements of the shipments that will occur. In addition, Canadian Pacific Kansas City 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 the railcar shipment arrives at the Ballston Spa Industrial Track, the normal sequence is to mobilize the Heavy Haul subcontractor on-site and have the railcar delivered to the Ballston Spa Industrial Track by Canadian Pacific Kansas City and conduct arrival inspections on the first day. Over the course of the next several days, the subcontractor will transfer the shipment from the rail to the Heavy Haul vehicle. On the final day, the Heavy Haul vehicle will be inspected to ensure it meets DOT requirements and then the shipment is transported from the Ballston Spa Industrial Track to the Kesselring Site. The Heavy Haul vehicle travels very slowly (approximately five miles per hour). The reverse of the sequence of operations will occur on the outgoing shipment from the Kesselring Site. Consistent with our normal procedures, Federal Couriers will continuously escort the shipment of nuclear fuel.

When the shipment returns from the Kesselring Site to the Ballston Spa Industrial Track the normal sequence is to mobilize the Heavy Haul subcontractor at the Kesselring Site and transport and deliver the Heavy Haul vehicle carrying the shipment to the Ballston Spa Industrial Track on the first day. 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. On the final day, the rail car is inspected to ensure it meets rail transport requirements, the locomotive arrives, and then the rail car is connected and transported from the Ballston Spa Industrial Track to its destination.

Q: How will the shipments travel to and from Ballston Spa?

A: Shipment to the Kesselring Site will normally start after the morning traffic rush and school bus drop-off period and will take several hours. The travel route for the heavy haul vehicles is shown in Figure 4. 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 and Figure 3 illustrates the July 2018 heavy haul shipment that crossed the intersection of Routes 50 and 67 in Ballston Spa, NY. The route will be reverified prior to the return shipment and follow a similar schedule.

Q: What happens to the spent nuclear fuel after it leaves Kesselring?

A: All United States Naval spent nuclear fuel is shipped to the Naval Reactors Facility on the Idaho National Laboratory reservation. The shipments occur via rail and are always accompanied by Federal Couriers. Since 1957, the Naval Nuclear Propulsion Program has made over 920 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 NRC/DOE containers and are manufactured from solid stainless steel. Each shipment is made in compliance with applicable DOT, DOE, NRC, and state regulations and pose no danger to the public. Because of the robust design and the fact that the containers are at least 14" 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, NY State Department of Health, NY State Department of Homeland Security, NY Department of Environmental Conservation, NY 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 routine 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 occurred in early 2024. These discussions will continue at key milestones throughout the project. The intent of these discussions is to ensure that stakeholders are 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: Over 920 shipments of Naval spent nuclear fuel have all been completed without incident and the fuel has safely arrived at the Naval Reactors Facility in Idaho without any impact to the public or the environment.

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 our nation's submarine and aircraft carrier Fleet.

Q: Who do we talk to if we have any questions?

A: Specific questions can be sent to:

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

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



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



Figure 3: Heavy Haul Tractor Pulling Trailer through Intersection of Routes 50 and 67



Figure 4: Travel Route for Heavy Haul Vehicle between the Ballston Spa Industrial Track and Kesselring Site



Figure 5: Shipping Container at the Ballston Spa Industrial Track Being Transferred to the Heavy Haul Vehicle

