12/22/2022	1400	Condition	Vessel – Material/Equipment Condition	The SANDY GROUND (O.N. 1299657) is a 304.2 ft., 4,669 GT, steel-hull, 10, 000 horsepower passenger vessel regulated under 46 CFR Subchapter H. The vessel's Certificate of Inspection (COI) at the time of the incident had a Certification Date of May 05, 2022, and Expiration Date of May 05, 2023. The SANDY GROUND is a double-ended ferry providing service from St. George Terminal on Staten Island to the Whitehall Terminal in lower Manhattan. It is a multi-deck passenger ferry designed and classified to the requirements of ABS Rules for Classing Steel Vessels for Service on Rivers and Intracoastal Waterways. The ferry was assigned the following class notations by ABS: A1, Ferry Service, River Service, AMS notation. The COI required that the vessel be manned with the following personnel: 1 - Master First Class Pilot, 1 - Licensed Mate, 1 - First Class Pilot, 8 - Deckhands, 1 - Chief Engineer, 1 Licensed Engineer, and 2 - Oilers. The vessel was authorized to carry 4500 passengers and 1 person in addition to crew. The vessel's main propulsion consisted of 4 - EMD 12V 710 Series E 23B main diesel engines with Voith Scheider Propeller units on both the Staten Island End and the New York End. The vessel was built by the Eastern Shipbuilding Group, Inc., in Panama City, Florida with a keel laid date of March 16, 2017, and a delivery date of February 23, 2022. The vessel was the second of three Ollis-Class ferries to be commissioned, along with the first, the SSG MICHAEL H. OLLIS and the third, the DOROTHY DAY. The vessel had been permitted for a Rivers route, in the New York Harbor, above the Narrows on any ferry route. The vessel's Owner and Operator is	COI / EOM Chapter 1/Interview of Mr. Torrey
12/22/2022	1400	Condition	Vessel – Material/Equipment Condition	Plan review was conducted to determine compliance with the requirements outlined in 46 CFR Subchapter H. As per 46 CFR 77.03-1(a), systems of a marine engineering nature are to meet the requirements of Subchapter F. Subchapter F predominantly regulated the design standards and system integration of piping, tanks, valves, deck/bulkhead penetrations, vents, fills, sounds, and filters. There was no regulation that prevented or required the use of a valve in the fuel return line. There was no direct regulation for pressure relief valves in fuel oil systems, any pressure relief device would have been reviewed to the associated regulation. The Marine Safety Center did not receive and had not conducted any plan reviews reflecting additional ball isolation valves for the day tanks in the fuel oil service return piping on the SANDY GROUND.	MSC reply to questions

12/22/2022	1400	Condition	Vessel – Material/Equipment Condition	The engine mounted (secondary) fuel filter assembly was mounted in the conventional position at the right front of the main diesel engine. The filter system was comprised of two identical spin-on filters in a parallel arrangement. Fuel returning from the injectors passed through the return fuel section of the filter assembly manifold (block). A relief valve at the inlet established a fuel back pressure at the injectors for improved operation. The return fuel relief valve was rated at 50 psi (345 kPa). The system was designed that when fuel pressure in the filter assembly manifold reached the cracking pressure of the bypass relief valve, the valve would open allowing fuel to return to the fuel tank, starving the engine. The bypass relief valve was rated at 120 psi (827 kPa). Contained within the fuel manifold/block are four check/relief valves. The two 10 psi check valves served as shuttle valves and allowed the higher pressure of fuel pump outlet or engine prime pump to go through the fuel filters and then to the injector supply loop. The 50 psi check valve was the injector fill valve which ensured that all injectors would get filled before the check valve opened and returned excess fuel back to the fuel tank. The 120 psi relief valve would open when there is either a major blockage in the fuel filters or piping or if the relief valve had ruptured and the fuel would be returned back to the fuel tank. Under these circumstances, the engine would lose power and eventually shut down due to fuel starvation.	Engine Maintenance Manual
12/22/2022	1400	Condition	Vessel – Material/Equipment Condition	The Engineers Operating Manual (EOM) for the Ollis Class Staten Island Ferry (SIF) had outlined for the purpose of the manual and for clarity, that the Staten Island end (SIE) was considered the stern and the New York end (NYE) was considered the bow. The manual had outlined that when viewed from the St. George Terminal in Staten Island and the ferry is departing, the starboard side would be the right side of the ferry (Brooklyn side) and the port side would be the left of the ferry (New Jersey side).	SIF EOM Chapter 1

12/22/2022	1400	Condition	Vessel – Material/Equipment Condition	The vessel had been outfitted with two fuel oil storage tanks with a combined capacity of 30,000 gallons at 95% and two fuel oil day tanks with a combined capacity of 5,000 gallons at 95%. The port fuel oil storage tank and the port fuel oil day tank were located in the Staten Island End of the Engine Room and the starboard fuel oil storage tank and the starboard fuel oil day tank were located in the New York End of the Engine Room. The vessel was also equipped with a Fuel Oil Purifier system located in the Staten Island End of the Engine Room. The main diesel engines were supplied fuel oil from the port and starboard fuel oil day tanks. The fuel oil was pulled from the port and starboard fuel oil day tanks through the duplex suction strainer by the fuel pump. From the suction strainers, fuel oil traveled to the fuel manifold at the top right front of the engine from and to the duplex Spin-on Fuel Filter Manifold. The fuel block fed fuel oil to the Spin-on Fuel Filter Manifold and received return fuel oil from the engine and directed back to the port and starboard fuel oil day tanks. The fuel lines coming from the block are the fuel oil supply to left & right banks, fuel oil return from left & right banks, the return to the fuel oil day tanks, the fuel oil supply, and the fuel oil prime supply line. The fuel oil piping diagram had listed fuel oil day tank #2 (port) on the Staten Island End and the fuel oil day tank #1 (starboard) on the New York End, and the orientation key plan had the Staten Island End listed as aft and the New York End listed as forward. The fuel oil piping diagram had listed the following system data and material schedule information: max expected fuel oil service pressure at	Fuel Oil Transfer System Drawings & Manual, Photos, SIF EOM Ch. 1 & 3, Ollis Class Training (Excerpt from Training Manual) and the Addendum, 200-233-01-020 Engine TM Volume 2 - Engine Controls, Photos of Engine Room
12/22/2022	1400	Condition	Vessel – Material/Equipment Condition	The Barberi and Molinari Class vessels had been outiftted with pressure relief valves in the fuel oil service return piping.	Barberi Class and Molinari Class Fuel Oil Service System Drawings
12/22/2022	1400	Condition	Organization – Organization Condition	The New York City Department of Transportation, Staten Island Ferry Division, had no established written procedures for leveling off the port and starboard fuel oil day tanks onboard the SANDY GROUND and the SSG MICHAEL H OLLIS.	CG-835
12/22/2022	1400	Condition	Vessel – Material/Equipment Condition	The fuel oil system return valves located on the Staten Island End fuel valve manifold and the New York End fuel valve manifold were used to regulate tank levels for the port and starboard fuel oil day tanks. The fuel oil day tank return valves were installed after the SANDY GROUND was delivered to the Staten Island Ferry Division.	Interviews of CME (Morning Shift), MO1, CME 09FEB23-1/2/3, MO 19JAN23-1/2/4, 26JAN23-1/2/3/4

12/22/2022	1400	Condition	Organization – Organization Condition	The Staten Island Ferry Engineers Operating Manual outlined that incorrect valve line-up may cause equipment damage, contamination of fuel oil, personnel injury, or damage to the environment and that when the ferry is in operation, valves for the "in use" day tanks will remain open. The valves will only be closed to switch tanks or when all machinery is secured.	SIF EOM Chapter 2 and 3
12/22/2022	1400	Condition	Vessel – Material/Equipment Condition	The SANDY GROUND was outfitted with the NOVEC 1230 fire suppression system that used an extinguishing agent considered to be an acceptable alternative to Halon and was approved by the Environmental Protection Agency (EPA) and the National Fire Protection Association (NFPA) for use in fire suppression systems. The NOVEC 1230 fire protection liquid is colorless, electrically non-conductive, has a low odor, and was rated for Class A, B, and C fires. It suppresses fire primarily by physical mechanisms due to its relatively high heat capacitywith minimal effect on the available oxygen. Fixed NOVEC 1230 systems were installed in the Engine Room, EOS, and the Emergency Diesel Generator (EDG) room. The storage tanks for the Engine Room and the Engine Operation Station (EOS) were located in the NOVEC locker whereas the EDG had its own storage tank located in the EDG room. The NOVEC locker was located in the New York End (NYE) Auxiliary Machinery Space (AMR), just forward of the non-potable water storage tank. The stowage capacity of each fixed NOVEC 1230 fire suppression system consisted of the Engine Room – 5334 lbs, the EOS - 383 lbs, and the EDG Room - 152 lbs. Activation of the Engine Room fixed NOVEC 1230 system was from a pneumatic actuation station located in the EOS or locally at the NOVEC locker.	
12.22/2022	1400	Condition	Person – Person Condition	The engineering crewmembers on the afternoon shift had attended Ollis Class vessel training conducted by the Staten Island Ferry Training Instructors.	Staten Island Ferry F-72 Muster Reports/Ollis Training Below Deck Crewmembers
12/22/2022	1422	Action	Engineering Operations – Changing Watch	The engineering crewmembers commenced crew relief process.	SIF Video Footage/CCTV Timeline
12/22/2022	1424	Action	Engineering Operations – Changing Watch	The CME and the ME for the afternoon shift arrived to the EOS for the watch turnover.	CCTVFootage
12/22/2022	1428	Condition	Vessel – Material/Equipment Condition	The EMS-Marcon Alarm & Monitoring System dated December 22, 2022, logged 1,726 gallons on the port fuel oil day tank and 1,721 gallons on the starboard fuel oil day tank at approximately 1428.	EMS-Marcon Alarm & Monitoring System Day Tank Log

12/22/2022	1430	Action	Engineering Operations – Changing Watch	The engineering crewmembers on the afternoon shift completed the watch turnover with the morning shift. The afternoon shift consisted of the Chief Marine Engineer, Marine Engineer, Marine Oiler 1 , and Marine Oiler 2.	IO Summary - CME (AM) / Interview CME (PM) / SIF Timeline
12/22/2022	1430	Condition	Person – Person Condition	The Chief Marine Engineer (CME) on the afternoon shift had been in the United States Navy and previously worked in CNC Machine Repair, and aboard towing vessels. The CME had worked for the Staten Island Ferry for 32 years with approximately 10 years as a Chief Marine Engineer, and had been previously assigned to another vessel that was out of service, then was reassigned to the SANDY GROUND to fill in for another Chief Marine Engineer who was out on December 22, 2022.	Interview CME (PM)
12/22/2022	1430	Condition	Person – Person Condition	Marine Oiler 1 (MO1) had spent almost 18 years on Deep Sea vessels and had worked for the Staten Island Ferry for 17 years and 8 months. MO1 had started in the position of Marine Oiler and later became a Marine Engineer, then was reestablished to the current position of Marine Oiler. MO1 was the senior Marine Oiler on the afternoon shift on December 22, 2022.	Interview MO1/MO2
12/22/2022	1430	Condition	Person – Person Condition	Marine Oiler 2 (MO2) had worked for the Staten Island Ferry for 17 years as a Marine Oiler and had been a Gas Turbine Technician in the United States Navy.	Interview MO2
12/22/2022	1430	Condition	Person – Person Condition	The Master on the afternoon shift had started with the Staten Island Ferry in 2016. During his first three years, he served as a Mate then Assistant Captain. Then he served as Captain for the past four years, for a total of seven years.	Interview of Captain (PM)
12/22/2022	1430	Condition	Vessel – Material/Equipment Condition	The fuel oil day tank soundings recorded on the SANDY GROUND Ollis Class Engine Logbook listed 1,650 gallons of fuel oil on the port fuel oil day tank and 1,850 gallons fuel oil on the starboard fuel oil day tank.	Photo Log 23-28 Dec 2022/EMS-Marcon Alarm & Monitoring System Day Tank Log/Marine Safety Laboratory Case Report 23-031
12/22/2022	1434	Condition	Vessel – Material/Equipment Condition	The EMS-Marcon Alarm & Monitoring System dated December 22, 2022, logged 1,762 gallons on the port fuel oil day tank and 1,721 gallons on the starboard fuel oil day Tank.	EMS-Marcon Alarm & Monitoring System Day Tank Log
12/22/2022	1435	Action	Engineering Operations – Engineering Systems Operations	The CME and the ME had a discussion with one of the Marine Oilers from the morning shift in regard to the fuel oil system and tank lineup.	SIF Video Footage/CCTV Timeline
12/22/2022	1439	Action	Engineering Operations – Engineering Systems Operations	The ME and one of the Marine Oilers from the morning shift go to the port fuel oil station and had a discussion in regard to pipe design and/or line-up.	SIF Video Footage/CCTV Timeline
12/22/2022	1444	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded to the port fuel oil station.	SIF Video Footage/CCTV Timeline

12/22/2022	1445	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded in the direction towards the starboard fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1535	Condition	Person – Communications Condition	The CME and MO2 observed in a discussion in regard to the fuel oil tank system/line-up.	SIF Video Footage/CCTV Timeline
12/22/2022	1537	Action	Engineering Operations – Engineering Systems Operations	Marine Oiler 1 and Marine Oiler 2 discussed observations on the Engine Operation Station tank level indicator display screen.	SIF Video Footage/CCTV Timeline, Interviews MO1/MO2, IO summary
12/22/2022	1537	Condition	Vessel – Material/Equipment Condition	The EMS-Marcon Alarm & Monitoring System dated December 22, 2022, logged a difference of approximately 500 gallons between the port and starboard fuel oil day tanks. The port fuel oil day tank ranged between 1,440 to 1,483 gallons of fuel oil and the starboard fuel oil day tank ranged between 1,915 and 1,951 gallons of fuel oil.	EMS-Marcon Alarm & Monitoring System Day Tank Log
12/22/2022	1537	Condition	Vessel – Material/Equipment Condition	Marine Oiler 1 and Marine Oiler 2 observed a difference of approximately 500 gallons between the port and starboard fuel oil day tanks.	Interviews MO1/MO2, IO summary
12/22/2022	1538	Action	Engineering Operations – Engineering Systems Operations	Marine Oiler 1 and Marine Oiler 2 commenced the monitoring of both the port and starboard fuel oil day tank levels as part of the fuel oil day tank leveling off process.	Interviews MO1/MO2, SIF Video Footage/CCTV Timeline
12/22/2022	1541	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded to the port fuel oil station, then proceeded in the direction towards the starboard fuel oil station	SIF Video Footage/CCTV Timeline
12/22/2022	1602	Action	Engineering Operations – Engineering Systems Operations	MO2 operated and made right/clockwise direction turns to the fuel oil service, day tank fuel oil supply port globe valve, located at the port fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1605	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded in the direction towards the starboard fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1606	Condition	Vessel – Material/Equipment Condition	Port day tank low level alarm	EMS-Marcon Alarm & Monitoring System Alarm Log 12-22-22
12/22/2022	1607	Condition	Vessel – Material/Equipment Condition	ME and CME observed the Fuel Oil Tank TLI readings in EOS on the MCS.	SIF Video Footage/CCTV Timeline
12/22/2022	1609	Action	Engineering Operations – Engineering Systems Operations	MO2 operated and made left/counter-clockwise direction turns to the fuel oil service, day tank fuel oil supply port globe valve, located at the port fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1610	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded in the direction towards the starboard fuel oil station.	SIF Video Footage/CCTV Timeline

12/22/2022	1611	Condition	Vessel – Material/Equipment Condition	Port day tank low level alarm	EMS-Marcon Alarm & Monitoring System Alarm Log 12-22-22
12/22/2022	1612	Action	Engineering Operations – Engineering Systems Operations	The CME disabled the port fuel oil day tank alarms to inhibit nuisance alarms.	Interview of CME (PM), Interview MO2, EMS-Marcon Alarm & Monitoring System Alarm Log 12-22-22
12/22/2022	1613	Condition	Vessel – Material/Equipment Condition	Stbd day tank low level alarm	EMS-Marcon Alarm & Monitoring System Alarm Log 12-22-22
12/22/2022	1613	Action	Engineering Operations – Engineering Systems Operations	The CME disabled the starboard fuel oil day tank alarms to inhibit nuisance alarms.	Interview of CME (PM), Interview MO2, EMS-Marcon Alarm & Monitoring System Alarm Log 12-22-22
12/22/2022	1614	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded to the port fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1615	Action	Engineering Operations – Engineering Systems Operations	ME departed the EOS to make a routine round of the machinery space(s) and looked at the port fuel oil tank levels while making round.	SIF Video Footage/CCTV Timeline, Interview of CME (PM), IO Summary ME
12/22/2022	1616	Action	Engineering Operations – Engineering Systems Operations	ME and MO2 proceeded to the starboard fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1617	Action	Engineering Operations – Engineering Systems Operations	MO2 returned to the port fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1618	Condition	Person – Person Condition	MO1 joined MO2 at the port fuel oil station.	SIF Video Footage
12/22/2022	1618	Action	Engineering Operations – Engineering Systems Operations	MO1 proceeded to the starboard fuel oil station.	SIF Video Footage
12/22/2022	1619	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded to the starboard fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1624	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded to the starboard fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1626	Action	Engineering Operations – Engineering Systems Operations	CME and MO2 discussed fuel oil day tank level observations.	Interview of CME (PM), Interview MO2, SIF Video Footage/CCTV Timeline
12/22/2022	1626	Action	Engineering Operations – Engineering Systems Operations	MO1 returned to the port fuel oil station, operated and made right/clockwise direction turns to the fuel oil service, day tank fuel oil supply port globe valve, located at the port fuel oil station.	SIF Video Footage

12/22/2022	1628	Action	Engineering Operations – Engineering Systems Operations	MO2 and MO1 are at the port fuel oil station and discussed fuel oil TLI observations. MO1 operated and made right/clockwise direction turns to the fuel oil service, day tank fuel oil supply port globe valve, located at the port fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1629	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded to the starboard fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1630	Action	Engineering Operations – Engineering Systems Operations	MO1 returned to the port fuel oil station.	SIF Video Footage
12/22/2022	1630	Action	Engineering Operations – Engineering Systems Operations	MO1 operated and made right/clockwise and left/counter-clockwise direction turns to the fuel oil service, day tank fuel oil supply port globe valve, located at the port fuel oil station.	SIF Video Footage
12/22/2022	1631	Action	Engineering Operations – Engineering Systems Operations	MO2 returned to the EOS.	SIF Video Footage
12/22/2022	1633	Action	Engineering Operations – Engineering Systems Operations	MO1 returned to the EOS.	SIF Video Footage
12/22/2022	1634	Action	Engineering Operations – Engineering Systems Operations	CME, MO1 , and MO2 discussed tank level observations in the EOS.	Interview of MO1, MO2
12/22/2022	1637	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded to the port fuel oil station to trace the system.	SIF Video Footage/CCTV Timeline
12/22/2022	1640	Condition	Vessel – Material/Equipment Condition	the SANDY GROUND had departed the Whitehall Ferry Terminal, with 866 passengers, 16 Staten Island Ferry crewmembers, and 2 NYPD Officers onboard for its scheduled southbound transit to the St. George Ferry Terminal.	CG-2692, Interview of CME/Master, IO Summary
12/22/2022	1641	Action	Engineering Operations – Engineering Systems Operations	MO2 operated and made left/counter-clockwise direction turns to the fuel oil service, day tank fuel oil supply port globe valve, located at the port fuel oil station.	SIF Video Footage
12/22/2022	1642	Action	Engineering Operations – Engineering Systems Operations	MO2 proceeded to the starboard fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1643	Action	Engineering Operations – Engineering Systems Operations	MO1 proceeded to the port fuel oil station and used a stick object to tap on the fuel oil day tank sight glass.	SIF Video Footage/CCTV Timeline
12/22/2022	1643	Action	Engineering Operations – Engineering Systems Operations	MO2 returned to the port fuel oil station, and MO1 and MO2 discussed fuel oil valve lineup.	SIF Video Footage/CCTV Timeline, Interview of MO1, MO2

12/22/2022	1644	Action	Engineering Operations – Engineering Systems Operations	The MO1 and the MO2, at separate times during their discussion at the port fuel oil station, held the handle of the fuel oil service, day tank fuel oil supply port globe valve, located at the port fuel oil station.	SIF Video Footage
12/22/2022	1645	Action	Engineering Operations – Engineering Systems Operations	MO1 and MO2 moved their discussion to the aft EOS vestibule.	SIF Video Footage/CCTV Timeline
12/22/2022	1646	Action	Engineering Operations – Engineering Systems Operations	MO1 and MO2 returned to the EOS and viewed the fuel oil tank levels on the MCS Display.	SIF Video Footage/CCTV Timeline
12/22/2022	1647	Action	Engineering Operations – Engineering Systems Operations	Both Marine Oilers left the EOS. MO1 proceeded to the port fuel oil station. MO2 proceeded to the starboard fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1647	Action	Engineering Operations – Engineering Systems Operations	After observing the port fuel oil day tank level, MO1 joined MO2 at the starboard fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1647	Event	Material Failure/Malfunction	An overpressurization of the fuel oil return system occurred which resulted in the material failure of the spin-on fuel oil filters that are mounted on all four main diesel engines and caused fuel oil to spray from the spin-on fuel oil filter assemblies of #1, #2, #3, and #4 main diesel engines.	EMS-Marcon Alarm & Monitoring System Alarm Log 12-22-22, Main Engine Fuel Oil Pressure at 1646 Time Range
12/22/2022	1647	Condition	Vessel – Material/Equipment Condition	The EMS-Marcon Alarm & Monitoring System Alarm Log 12-22-22 listed low fuel oil pressure alarms for the #1 and #2 main diesel engines at 16:46:52 and at 16:46:53 for the #3 and #4 main diesel engines. Fuel oil spray on the firemain hose cabinet adjacent to the #2 main diesel engine is visible on the CCTV recording at 16:47:55. The alarm on the MCS display is visible on the CCTV recording at 16:47:57.	EMS-Marcon Alarm & Monitoring System Alarm Log 12-22-22/SIF Video Footage
12/22/2022	1647	Condition	Vessel – Material/Equipment Condition	the CME was alerted by the low fuel oil pressure alarms affecting all four main diesel engines that were displayed on the MCS console located in the EOS.	Interview of CME (PM), SIF Video Footage/CCTV Timeline
12/22/2022	1649	Action	Safety and Emergency Operations – Controlling and Fighting Fires	the CME contacted the Pilothouse to notify the Captain of the potential loss of propulsion.	Interview of CME (PM)& Master, SIF Video Footage/CCTV Timeline
12/22/2022	1649	Condition	Vessel – Material/Equipment Condition	MO1 and MO2 were in the engine room and observed fuel oil spraying from the #3 and #4 main diesel engines.	Interview of CME (PM)& Master, SIF Video Footage/CCTV Timeline
12/22/2022	1649	Condition	Vessel – Material/Equipment Condition	The CME observed fuel oil spraying from the spin-on fuel filter assembly on the #2 main diesel engine.	Interview of CME (PM)& Master, SIF Video Footage/CCTV Timeline
12/22/2022	1649	Action	Safety and Emergency Operations – Controlling and Fighting Fires	The CME alerted the Captain of the fuel oil leakage and the imminent loss of propulsion and steering.	Interview of CME (PM)& Master, SIF Video Footage/CCTV Timeline

12/22/2022	1650	Action	Bridge Operations – Shiphandling	The Captain ordered the Pilothouse crew to stop the ferry and to deploy the New York End anchor.	Interview of Master, IO Summary Captain, Asst. Capt. , Mate
12/22/2022	1650	Action	Engineering Operations – Engineering Systems Operations	MO1 proceeded to the port fuel oil station, operated and made left/counter-clockwise direction turns to the fuel oil service, day tank fuel oil supply port globe valve, located at the port fuel oil station.	SIF Video Footage/CCTV Timeline
12/22/2022	1650	Action	Engineering Operations – Engineering Systems Operations	MO2 returned to the EOS.	SIF Video Footage/CCTV Timeline
12/22/2022	1651	Action	Engineering Operations – Engineering Systems Operations	MO1 returned to the port fuel oil station, again turned/adjusted valve(s), and grabbed rags.	SIF Video Footage/CCTV Timeline
12/22/2022	1651	Action	Engineering Operations – Engineering Systems Operations	the CME directed MO2 to the port fuel oil station to check the fuel oil system line-up.	SIF Video Footage/CCTV Timeline/Interview of CME (PM), MO2
12/22/2022	1652	Action	Engineering Operations – Engineering Systems Operations	MO2 observed the fuel oil system line-up and proceeded towards the #4 main diesel engine. MO2 returned to the port fuel oil station, then proceeded to the EOS.	SIF Video Footage
12/22/2022	1653	Condition	Vessel – Material/Equipment Condition	the ME entered the engine room from the Main Deck passenger space access door and observed a shower of fuel oil in the vicinity of the #2 main diesel engine.	SIF Video Footage/CCTV Timeline/Interview of CME (PM), IO Summary Form ME, ME Witness Statement
12/22/2022	1653	Action	Engineering Operations – Engineering Systems Operations	The ME returned to the EOS and informed the CME that fuel oil was hitting the #2 main diesel engine exhaust manifold.	SIF Video Footage/CCTV Timeline/Interview of CME (PM), IO Summary Form ME, ME Witness Statement
12/22/2022	1653	Action	Safety and Emergency Operations – Controlling and Fighting Fires	MO1 used absorbent pads to hamper the fuel oil spray from the #1 main diesel engine spin-on fuel oil filter assembly unto the #2 main diesel engine exhaust manifold.	Interviews of MO1 and MO2
12/22/2022	1654	Action	Safety and Emergency Operations – Controlling and Fighting Fires	MO2 proceeded to the port fuel oil station to retrieve absorbent pads.	
12/22/2022	1654	Event	Fire – Initial	a fire erupted on the #2 main diesel engine at 16:54:06	SIF Video Footage/CCTV Timeline
12/22/2022	1654	Action	Safety and Emergency Operations – Controlling and Fighting Fires	MO2 retrieved absorbent pads and proceeded in the direction towards the main diesel engines, then turned around and ran back to the EOS, and signaled the CME towards the direction of the fire.	SIF Video Footage
12/22/2022	1654	Action	Safety and Emergency Operations – Controlling and Fighting Fires	MO1, who had been in between the #1 and #2 main diesel engines, returned to the EOS and notified the CME of the fire.	SIF Video Footage/CCTV Timeline
12/22/2022	1654	Condition	Person – Person Condition	MO1's clothes had been soaked in fuel oil from attempting to hamper the fuel oil spraying from the #1 main diesel engine spin-on fuel oil filter assembly unto the #2 main diesel engine exhaust manifold.	Interview of MO1

12/22/2022	1654	Action	Safety and Emergency Operations – Controlling and Fighting Fires	The CME informed the Captain of the fire and attempted to secure all four main diesel engines.	SIF Video Footage/CCTV Timeline, Witness Statement CME, Interview of CME
12/22/2022	1654	Condition	Vessel – Material/Equipment Condition	The CME observed on the MCS that a shutdown had been initiated before the CME could secure the main diesel engines.	Interview of CME
12/22/2022	1655	Action	Safety and Emergency Operations – Controlling and Fighting Fires	MO1 and MO2 exited the EOS to look at the fire then returned back to the EOS and signaled the CME towards the escape hatch.	SIF Video Footage/CCTV Timeline
12/22/2022	1655	Action	Safety and Emergency Operations – Controlling and Fighting Fires	the CME ordered the evacuation of the engine room.	Interview of CME, SIF Video Footage/CCTV Timeline
12/22/2022	1655	Action	Safety and Emergency Operations – General Safety	MO2 exited and was the first to evacuate the EOS through the emergency escape hatch.	SIF Video Footage
12/22/2022	1655	Action	Safety and Emergency Operations – General Safety	ME exited and was the second to evacuate the EOS through the emergency escape hatch.	SIF Video Footage
12/22/2022	1655	Action	Bridge Operations – Shiphandling	the Captain ordered the Pilothouse crew to deploy the Staten Island End anchor.	Witness Statement Captain, Interview of Captain, IO Summary Captain, Asst. Captain, Mate
12/22/2022	1656	Action	Safety and Emergency Operations – Controlling and Fighting Fires	the CME requested for the Captain to activate the NOVEC 1230 fire suppression system from the Pilothouse.	Interview of CME
12/22/2022	1656	Condition	Person – Person Condition	The CME was unsure if the NOVEC 1230 fire suppression could be activated from the Pilothouse.	Interview of CME
12/22/2022	1656	Condition	Vessel – Material/Equipment Condition	#4 Main engine shaft stopped at 1656 on CCTV Footage, Camera 147-Engine room-SIE-NJ. The bolts for the main engine output shaft located within the yellow shaft guard enclosure between the main engine transmission end and the #4 main engine fluid coupling are stationary and visible.	SIF Video Footage
12/22/2022	1658	Action	Safety and Emergency Operations – Controlling and Fighting Fires	MO1 exited and was the third to evacuate the EOS through the emergency escape hatch.	Interview of CME, SIF Video Footage/CCTV Timeline
12/22/2022	1658	Action	Safety and Emergency Operations – Controlling and Fighting Fires	The CME activated the emergency fuel shutoff valves located in the EOS prior to exiting through the EOS escape hatch.	Interview of CME, SIF Video Footage/CCTV Timeline
12/22/2022	1658	Condition	Vessel – Material/Equipment Condition	As a result of the emergency fuel shutoff valve activation, all fuel oil supply to the main diesel engines, boilers, and the ship's service diesel generators, which secured normal power.	Interview of CME, SIF Video Footage
12/22/2022	1658	Condition	Vessel – Material/Equipment Condition	Emergency power came online as a result of the automatic start-up of the emergency diesel generator after the emergency fuel shutoff activation.	Interview of CME

12/22/2022	1659	Action	Safety and Emergency Operations – Controlling and Fighting Fires	the CME directed engineering crewmembers to position a fire hose by the engine room door for boundary cooling and relayed to the Captain to start the emergency fire pump.	Interview of CME, MO1, MO2
12/22/2022	1659	Action	Safety and Emergency Operations – Controlling and Fighting Fires	the Pilothouse crew energized the emergency fire pump and secured ventilation to the engine room via the emergency stop buttons located in the Pilothouse.	Interview of Master
12/22/2022	1700	Event	Loss of Electrical Power	A shutdown of the EDG occurred due to a generator malfunction.	EMS-Marcon Alarm & Monitoring System Alarm Log 12-22-22
12/22/2022	1700	Condition	Vessel – Material/Equipment Condition	the SANDY GROUND was without emergency power after a shutdown of the emergency generator occurred.	Interview of CME
12/22/2022	1701	Action	Safety and Emergency Operations – Controlling and Fighting Fires	the Captain granted permission for the CME to activate the NOVEC 1230 fire suppression system.	Interview of CME/Master
12/22/2022	1703	Action	Safety and Emergency Operations – Controlling and Fighting Fires	the CME manually activated the Novec 1230 fire suppression system and had by-passed the 61-second time delay for the immediate release of 5,534 pounds of the fire protection liquid into the engine room.	Interview of CME
12/22/2022	1705	Action	Safety and Emergency Operations – Controlling and Fighting Fires	the CME proceeded to the hurricane deck in an attempt to reestablish emergency power and was unable to start the emergency diesel generator.	Interview of CME
12/22/2022	1705	Condition	Vessel – Material/Equipment Condition	The CME observed that the generator had an engine start lock-out which prevented its operation.	Interview of CME
12/22/2022	1705	Action	Engineering Operations – Engineering Systems Operations	the CME informed the Captain that emergency power could not be restored.	Interview of CME
12/22/2022	1719	Action	Deck Operations – Passenger Safety	The crew of the SANDY GROUND commenced an emergency evacuation of passengers. The NYC Ferries RIVER SPRINTER and GREAT EAGLE, the NY Waterway Ferry FRANKLIN DELANO ROOSEVELT, and the towing vessels MISTER JIM and CHARLES JAMES provided assistance for the vessel-to-vessel transfer of 816 passengers. The RIVER SPRINTER was the first vessel and took onboard 138 passengers, the FRANKLIN D ROOSEVELT was the second vessel and took onboard 558 passengers, and the GREAT EAGLE was the third vessel and took onboard 120 passengers.	Interview of the Master, IO Summary Captain, VTS trackline
12/22/2022	1808	Action	Safety and Emergency Operations – General Safety	The crew of the SANDY GROUND called off the vessel-to-vessel transfer of passengers as winds from the north increased and the SANDY GROUND began to drag anchor. The ferry was placed under tow back to the St. George Ferry Terminal.	Interview of the Master, IO Summary - Captain, IO Summary- CWO Q.

12/22/2022	1825	Condition	Vessel – Material/Equipment Condition	the SANDY GROUND had moored at the St. George Ferry Terminal and the remaining 50 passengers and crewmembers had disembarked.	Interview of Master, IO Summary - Captain, IO Summary- CWO Q. VTS trackline
12/22/2022	1955	Action	Drug/Alcohol Testing – Alcohol Testing (Alcohol Testing Details)	all crewmembers were subject to mandatory chemical testing for evidence of alcohol use in accordance with 46 CFR Subpart 4.06. Two of the sixteen crewmembers were unable to be tested for alcohol within the required time frame as they were receiving medical evaluation and were unavailable to provide a sample.	CG-2692B, Drug Test Results, IO Summary - CWO Q.
12/22/2022	1955	Action	Drug/Alcohol Testing – Drug Testing (Drug Testing Details)	all crewmembers were subject to mandatory chemical testing for evidence of drug and alcohol use in accordance with 46 CFR Subpart 4.06.	CG-2692B, Drug Test Results, IO Summary - CWO Q.
12/22/2022	2200	Condition	Vessel – Material/Equipment Condition	FDNY firefighters established that a 24-hour wait period would be necessary prior to entry into the engine room and to inhibit potential reflash of the fire.	IO Summary - CWO Q.
12/23/2022	1235	Action	Safety and Emergency Operations – Controlling and Fighting Fires	FDNY firefighters entered the engine room and found no hot spots or areas of excessive heat.	IO Summary - CWO Q.
12/23/2022	1235	Condition	Vessel – Material/Equipment Condition	FDNY firefighters deemed the engine room unsafe for entry and commenced ventilation of the space due to high carbon monoxide readings.	IO Summary - CWO Q.
12/23/2022	1742	Condition	Vessel – Material/Equipment Condition	FDNY firefighters cleared the engine room for entry.	IO Summary - CWO Q.
12/23/2022	1810	Condition	Vessel – Material/Equipment Condition	FDNY firefighters had departed the vessel and the engine room had been established safe for workers by a Certified Marine Chemist.	IO Summary - CWO Q.
1/17/2023	1455	Condition	Vessel – Material/Equipment Condition	As a result of the main space engine room fire, USCG Sector New York issued a CG-835 to the SSG MICHAEL H OLLIS, sister vessel of the SANDY GROUND stating the following: The vessel has a voluntary SMS system which must establish and implement safeguards against all identified risks. As a result of an engine room fire on the sister vessel the Sandy Ground and pending investigation it has been identified there is no established written procedure for leveling off the fuel oil day tanks and use of certain valves to conduct this operation. Company must work with ABS to develop these procedures, implement into the SMS, conduct training and document this training with all personnel involved.	CG-835V - SSG MICHAEL H OLLIS Dated January 17, 2023