

Energy Matters

[A Lasting Legacy of the Fukushima Rescue Mission: Part 1 Radioactive Contamination of American Sailors](#)

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By Roger Witherspoon

The Department of Defense has decided to walk away from an unprecedented medical registry of nearly 70,000 American service members, civilian workers, and their families caught in the radioactive clouds blowing from the destroyed nuclear power plants at Fukushima Daiichi in Japan.

The decision to cease updating the registry means there will be no way to determine if patterns of health problems emerge among the members of the Marines, Army, Air Force, Corps of Engineers, and Navy stationed at 63 installations in Japan with their families. In addition, it leaves thousands of sailors and Marines in the USS Ronald Reagan Carrier Strike Group 7 on their own when it comes to determining if any of them are developing problems caused by radiation exposure.

The strike group was detoured from its South Pacific duties and brought to Fukushima for Operation Tomodachi, which was named using the Japanese word for “friend.” It was an 80-day humanitarian aid and rescue mission in the wake of the earthquake and massive tsunami that decimated the northern coastline and killed more than 20,000 people. The rescue operation was requested by the Japanese Government and coordinated by the US State Department, the Nuclear Regulatory Commission, and the Departments of Defense and Energy. In addition to the USS Ronald Reagan with its crew of 5,500, the Strike Group included four destroyers – The Preble, McCampbell, Curtis Wilbur, and McCain – the

cruiser USS Chancellorsville, and several support ships (<http://bit.ly/11bfTqS>).



It was the participants in Operation Tomodachi – land based truck drivers and helicopter crews, and carrier based aircraft and landing craft – who were repeatedly trying to guess where the radioactive clouds were blowing and steer paths out of the way. It was unsuccessful on more than one occasion, according to Defense Department records and participants, resulting in efforts to decontaminate ships travelling through contaminated waters and cleansing helicopters only to send them right back into radioactive clouds.

So far, more than 150 service men and women who participated in the rescue mission and have since developed a variety of medical issues – including tumors, tremors, internal bleeding, and hair loss – which they feel were triggered by their exposure to radiation. They do not blame the Navy for their predicament, but are joined in an expanding law suit against the Tokyo Electric Power Company, TEPCO, for providing false information to the US officials about the extent of spreading radiation from its stricken reactors at Fukushima. And the decision by the Defense Department to abandon the registry leaves them on their own. (<http://bit.ly/XpfJW5>)

Jobs are compartmentalized at sea explained Navy Quartermasters Maurice Enis and Jaime Plym, two of the navigators on the carrier Reagan. Few of those on board knew there were dangerous radioactive plumes blowing in the wind and none knew what ocean currents might be contaminated. They did know there were problems when alarms went off.

“We make our own water through desalinization plants on board,” said Plym, a 28-year-old from St. Augustine, Florida. “But it comes from the ocean and the ocean was contaminated. So we had to get rid of all the water on the ship and keep scouring it and testing it till it was clean.

“You have a nuclear power plant inside the ship that uses water for cooling, and they didn’t want to contaminate our reactor with their reactors’

radiation.”



But avoiding it was not easy. It meant going far enough out to sea where there were no contaminated currents, washing down the ship and its pipes, and then going back towards shore.

“We could actually see the certain parts of the navigation chart where radiation was at, and to navigate through that was nerve wracking,” said Enis. “The general public, like the ship, didn’t really know where it was or what it was and relied on word-of-mouth and rumors. We have more information, but there was no absolute way for us to know how much radiation was out there because we were still being told by the (Japanese) power company that we shouldn’t worry.



“We stayed about 80 days, and we would stay as close as two miles offshore and then sail away. It was a cat and mouse game depending on which way the wind was blowing. We kept coming back because it was a matter of helping the people of Japan who needed help. But it would put us in a different dangerous area. After the first scare and we found there was radiation when they (the power company) told us there was none, we went on lockdown and had to carry around the gas masks.”

When it came to getting timely information on radiation, the Americans on land were just as much at sea. Gregory Jaczko, then Chairman of the US Nuclear Regulatory Commission, urged the evacuation of all Americans within 50 miles of the stricken reactors. And the Defense Department evacuated women and children from the Yokosuka Naval Base, located 300 miles south of Fukushima, after sensors picked up increases in background radiation.

Information was hard to come by, exacerbated by the rigidity of the Japanese bureaucracy. Two nuclear experts at the Union of Concerned Scientists, David Lochbaum, who has

worked as a consultant for the NRC and industry, and Ed Lyman, a nuclear physicist, have examined thousands of government emails and cable traffic during a confusing period where the data base shifted by the hour and concrete information was hard to come by.

“After the explosion in Fukushima Daiichi Unit #4 the Japanese were not able to get enough water into the building to keep the spent fuel pool cool,” Lochbaum said. “So the US airlifted a concrete pumper truck all the way from Australia to an American naval base in the northern part of the island. And the Japanese would not let it leave the base because it wasn’t licensed to travel on Japanese roads. Given the magnitude of their problems, that seemed to be the wrong priority.

“But the Japanese culture is more like a symphony, where everyone follows the conductor’s lead. Whereas American society is more like a jazz ensemble where everyone is playing together, but improvisation is prized.”

The inability to get cohesive, trustworthy information from the Japanese hampered the American rescue effort.



Michael Sebourn, senior chief mechanic for the helicopter squadron based at Atsugi, about 60 miles from Fukushima, recalled that “after the earthquake and tsunami we were given one day notice to pack up the command and go to Misawa, Japan Air Base to provide relief efforts to the Sendai and Fukushima areas. All of the other squadrons were evacuating to Guam. There was a big possibility that the base at Atsugi would be shut down and we would never be returning. We were told to put our names and phone numbers on the dashboards of the cars because we would probably not get them back.

“We were in Misawa 3 ½ weeks, working every day, flying mission after mission after mission to pick people up, rescue people, ferry supplies and things like that. There were a few nuclear technicians scanning individuals coming back from missions. Many times they would cut off their uniforms.”

Sebourn was sent to Guam for three days of intensive training and became the designated

radiation officer. It wasn't easy.

"This was a completely unprecedented event," he said. "We had never dealt with radiation before. We were completely brand new to everything and everyone was clueless. We had had drills dealing with chemical and biological warfare. But we never had any drills dealing with radiation. That was nuclear stuff and we didn't do nuclear stuff. The aviation guys had never dealt with radiation before. We had never had aircraft that was radiated. So we were completely flying blind."

There were rules for Seibourn's group of mechanics. They scanned the returning helicopters for radiation, and then removed any contaminated parts and put them in special containers filled with water and stored on an isolated tarmac. It began snowing in Misawa so the group moved back to their base at Atsugi, closer to Fukushima. Seibourn tracked varying radiation levels in units called Corrected Counts Per Minute on their electronic detectors.

"Normal outside radiation exposure is between five and 10 CCPM," he said. "And that's from the sun. At Atsugi, the background readings were between 200 and 300 CCPM in the air. It was all over. The water was radiated. The ground was radiated. The air was radiated.

"The rule was if there was anything over a count of 500 you needed special gloves. Over 1,000 CCPM and you needed a Tyvek radiation suit. And if it was over 5,000 you needed an entire outfit – suit, respirator, goggles, and two sets of gloves. You couldn't put a contaminated radiator back into the helicopters – they had to be replaced. I remember pulling out a radiator and it read 60,000 CCPM."

But in the end, the safety equipment may not have been enough.

The Tomodachi Medical Registry, developed over a two year period and completed at the end of 2012, was a collective effort of the Departments of Defense, Energy, and Veterans Affairs launched at the insistence of Vermont Senator Bernie Sanders, chairman of the Senate Veterans Affairs Committee. (<http://bit.ly/14ABPuj>)

It was an exhaustive registry essential to develop a medical baseline from which to determine if there were any long lasting repercussions from exposure to radioactivity – particularly iodine and cesium – spewing for months from the Fukushima Daiichi reactor units 1 through 4 into both the air and the sea.

The Registry was unparalleled in its depth. The Defense Department's 252-page assessment of radiation doses the 70,000 Americans may have been exposed to is broken down by a host of factors, including proximity to Fukushima, the type of work being done and its impact on breathing rates, changing weather patterns, sex, size, and age. In the latter

category children were divided into six different age groups, reflecting their varying susceptibility to radiation. (<http://bit.ly/U42a1X>).

In addition, the report states “over 8,000 individuals were monitored for internal radioactive materials and the results of those tests were compared with the calculated doses.”

In the end, however, the Department concluded that their estimates of the maximum possible whole body and thyroid doses of contaminants were not severe enough to warrant further examination.

Navy spokesman Lt. Matthew Allen, in a written statement, said “The DoD has very high confidence in the accuracy of the dose estimates, which were arrived at using highly conservative exposure assumptions (i.e., assuming individuals were outside 24 hours a day for the 60 days in which for environmental radiation levels were elevated and while breathing at higher than normal rates).

“The estimated doses were closely reviewed by the Veterans’ Advisory Board on Dose Reconstruction and by the National Council on Radiation Protection and Measurements who both agreed that the methods used to calculate the estimates were appropriate and the results accurate. In addition the dose estimates were consistent with the estimates made by the Japanese government and by the World Health Organization.”

Defense Department spokeswoman Cynthia Smith added that as a result of the agency’s decision that there was no serious contamination, “There are no health surveillance measures required for any member of the DoD-affiliated population who was on or near the mainland of Japan following the accident and subsequent radiological release from the Fukushima Daiichi Nuclear Power Station beginning on or about March 11, 2011.”

But there are skeptics of the Defense Department’s blanket conclusion that there was not enough radiation poured into the environment to warrant continuous monitoring of the men, women, and children living and working there.



“Radiation does not spread in a homogeneous mix,” said

Lochbaum. “There are hot spots and low spots and nobody knows who is in a high zone or in a low zone. Who knows what the actual radiation dose to an individual is? There are no measurements of what they consumed in water and food.

“This is the Navy’s best attempt to take a few data points they have and extrapolate over the entire group. They took a lot of measurements, but those represent just a point in time. It’s like taking a strobe light outside to take a picture of a nighttime scene. Every time the strobe flashes you will get shots in spots of the area. But do you really capture all of the darkness?”

–Winifred Bird contributed reporting from Japan