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DEPARTMENT OF TRANSPORTATION

U.S. COAST GUARD

STATEMENT OF REAR ADMIRAL ARTHUR E. "GENE" HENN

ON THE CARGO VESSEL SANTA CLARA I INCIDENT

BEFORE THE

COMMITTEE ON MERCHANT MARINE AND FISHERIES

SUBCOMMITTEE ON COAST GUARD AND NAVIGATION

HOUSE OF REPRESENTATIVES

FEBRUARY 27, 1992

Rear Admiral A. E. "Gene" Henn
Chief, Office of Marine Safety, Security and Environmental Protection
United States Coast Guard

Rear Admiral Arthur Eugene Henn became Chief, Office of Marine Safety, Security and Environmental Protection at Coast Guard Headquarters, Washington, D.C., in June 1991. Prior to this assignment, Rear Admiral Henn was Commander of the Maintenance and Logistics Command, Atlantic.

Earlier assignments included that of Operations and Engineering Officer on the Coast Guard cutter Chincoteague; Assistant Chief, Merchant Marine Technical Branch, New Orleans, LA; and Special Project Action Officer, Merchant Marine Technical Division, Coast Guard Headquarters.

He was also Marine Inspector and Senior Investigating Officer, Marine Inspection Office, Philadelphia, PA; Chief, Engineering Branch and Chief, Marine Technical and Hazardous Materials Division, Coast Guard Headquarters; Captain of the Port, New York; Commander, Group, New York; Commander, Subsector, New York, Maritime Defense Zone, Atlantic; and Chief, Operations Division and Chief of Staff, Eighth Coast Guard District, New Orleans, LA.

A 1962 graduate of the Coast Guard Academy, Rear Admiral Henn earned combined master of science degrees in naval architecture, marine engineering and metallurgical engineering from the University of Michigan in 1968. Also, he is a 1982 graduate of the Army War College.

His decorations include the Legion of Merit, two Meritorious Service Medals, four Coast Guard Commendation Ribbons, Coast Guard Unit Commendation Ribbon, Coast Guard Achievement Medal and two Commandant's Letter of Commendation Ribbons.

Rear Admiral Henn is a member of the American Society of Naval Engineers, American Bureau of Shipping, International Cargo Gear Bureau, Marine Index Bureau, Marine Engineering Council of Underwriters Laboratories and the Sealift Committee of the National Defense Transportation Association.

During the past 20 years, he has represented the United States Coast Guard as a member of delegations to the International Maritime Organization, a United Nations specialized agency. He heads United States delegations to meetings of the Maritime Safety and Marine Environment Protection Committees of IMO.

A native of Cincinnati, Ohio, Rear Admiral Henn is married to the former Susan Frances Pedritti, also from Cincinnati. They have two grown children, David and Jennifer.

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UNITED STATES COAST GUARD
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Good morning Chairmen and Members of the Subcommittees. I am Rear Admiral Arthur E. Henn, Chief of the Office of Marine Safety, Security and Environmental Protection for Coast Guard Headquarters in Washington, DC. Because my office manages the Coast Guard programs involved with pollution response and shipment of hazardous materials by water, Admiral Kime has asked me to speak to you today concerning the Coast Guard's role in the incidents involving the M/V SANTA CLARA I. This statement is current as of February 14, 1992; some of the particulars, such as those pertaining to offshore recovery operations, may have changed during the week before this hearing.

The M/V SANTA CLARA I is a 479-foot, 9593 gross ton, Panamanian-flag freight ship which has been converted to carry cargo containers. It was built in 1974. The vessel was enroute from New York to Baltimore following a track approximately 30 to 40 miles off the coast of New Jersey to the Delaware Bay, then to Baltimore via the Chesapeake and Delaware Canal, and Chesapeake Bay. On the morning of January 4, 1992, while at sea off the coast of New Jersey, the M/V SANTA CLARA I lost 21 cargo containers off its deck during a severe storm. Seas during this storm were estimated at 25 to 40 feet, with winds up to 50 knots.

Four of the 21 lost containers held a total of 432 25-gallon drums of arsenic trioxide. The other containers lost overboard held general cargo or were empty. Some containers remaining on board the ship were damaged, including two arsenic trioxide containers. A total of nine drums from these damaged containers on the ship were not accounted for. They are assumed to have been lost at sea.

Arsenic trioxide is a class B poison, listed as a hazardous substance under both the Federal Water Pollution Control Act (FWPCA), or "Clean Water Act," and the Comprehensive Environmental Response, Compensation, and Liability Act, or "CERCLA." For the purpose of reporting a spill, the reportable quantity is one pound. Arsenic trioxide is very heavy and sinks in water. It is extremely lethal if ingested even in minuscule amounts. It mixes very slowly with water and is toxic to aquatic life in low concentrations.

The arsenic trioxide was shipped in a powder form, stored in 25-gallon steel drums with steel bands used to fasten the lids. The lids used are not watertight. Each drum weighs approximately 475 pounds and would sink to the bottom quickly.

The loss of the containers and news of the damaged containers remaining on the ship was reported to the Coast Guard by the Baltimore Port Authority at 4:45 P.M. on January 4th. The Coast Guard Marine Safety Office (MSO) in Baltimore responded to the report of the damaged containers and ensured the damaged drums of arsenic trioxide remaining on the vessel were safely retrieved and secured at the port authority to await disposal.

The vessel was allowed to depart Baltimore on January 6th, to continue its voyage to Charleston, South Carolina.

Following the January 4th notification, the Fifth Coast Guard District in Portsmouth, VA, commenced an aerial search for the missing containers using aircraft outfitted with side-looking airborne radar. Only one container was located over the next several days. A review of weather data and the vessel's track was used to help predict the possible location of the other lost containers. The results of this review generally agreed with the locations suggested by the ship's master as the area where he felt the containers were lost.

On January 7th, the Fifth District assigned Coast Guard MSO Philadelphia as the On-Scene Coordinator (OSC) to manage the continuing search for the missing containers. The MSO quickly initiated a three-phase response plan with the following components:

PHASE I - Subsea search for the containers using U.S. Navy minesweeping helicopters, and vessels equipped with sidescanning sonar and remotely operated vehicles. This search was focused on areas along the ship's trackline where the most severe weather was encountered. One of the vessels used during this phase was the EPA vessel PETER W. ANDERSON.

PHASE II - Positive identification of containers from the M/V SANTA CLARA I.

PHASE III - Recovery and disposal of containers or drums.

Until January 13th, only one container, a floating one, had been located. On that day, a U.S. Navy helicopter, using its towed sonar array, located a debris field of containers on the bottom approximately 30 miles offshore. Inclement weather prevented further search until January 19th when the PETER W. ANDERSON deployed its TV-equipped, remotely operated vehicle (ROV). Three containers were identified as being from the M/V SANTA CLARA I. One was confirmed as having contained arsenic trioxide.

The PETER W. ANDERSON then secured its efforts and was relieved by the E.T., a commercial vessel contracted by the U.S. Navy Supervisor of Ship Salvage (NAVSUPSALV). The E.T. is also outfitted with sidescanning sonar and a TV-equipped ROV.

The search for missing containers has continued as weather permits. To date, three of the four missing arsenic containers have been positively identified. In two instances, the drums are located in "piles," close to the containers. Drums are scattered around the third container. Efforts to locate the fourth container were suspended on February 8th when the OSC, in consultation with the NAVSUPSALV representative, decided that there was a good possibility that the drums from the fourth container are actually located in the same pile as the drums from one of the other containers. Also, inclement weather prohibited effective use of the E.T. The expected location of the fourth container will be verified when salvage operations begin.

The OSC in Philadelphia is currently developing a plan of action for salvage. One problem encountered was the discovery of

a container that the cargo manifest lists as containing tungsten, while the placard on the container indicated that it contains sodium cyanide. Sodium cyanide is a highly dangerous substance with chemical properties much like arsenic trioxide. The container will be treated as sodium cyanide until its contents can be verified.

The drums that have been located appear to be in relatively good condition. They are in 120 to 130 feet of water. We have conducted crush tests at the David Taylor Research Center on this type of drum. Results suggest that they should be distorted but intact at this depth. Some leakage can be expected. These tests are consistent with the appearance of the located drums. Most of the drums are deformed from the water pressure, but the lids are intact. Some split seams and missing lids may have been caused by storm damage.

Numerous Federal and State agencies have provided advice to the OSC regarding the potential health effects of the arsenic trioxide. As I mentioned earlier, very low concentrations of the arsenic trioxide, if ingested, would prove lethal to human or aquatic wildlife. The primary human health threat is to fishermen who could pick up the drums in their nets, risking contamination of personnel, fishing gear, and their catch. This risk would continue as long as the drums remain on the ocean floor and would require frequent sampling of the water and sediments to ascertain when the threat may have diminished, which could be decades before the drums corrode. Based on the potential seriousness and long term aspects of the threat, the

OSC feels it is critical to attempt recovery of the drums rather than leaving them to corrode or rupturing them in place. Recovery will remain the OSC's focus unless it is determined that the drums cannot be recovered safely. In that case, the other alternatives would be reconsidered. Safety of the response personnel remains our top priority.

Based on environmental and health concerns, plus advice from the Food and Drug Administration, the National Marine Fisheries Service (NMFS) has prohibited fishing in the area around the located containers. This prohibition began February 7th and is effective for 90 days. It will be extended if necessary.

NMFS personnel are also taking a series of samples from the area to determine toxicity and establish baseline data. Water, sediment, and shellfish tissue samples are included. We await the results.

The vessel's owner, a Panamanian company, and the vessel's operator, a Peruvian company, have not yet fulfilled their legal responsibilities to remove or abate the threat off the New Jersey coast. The availability of sophisticated underwater sonar equipment necessary to undertake Phase I of the at-sea response operations is limited. Most belongs to the U.S. Government. These resources generally cannot be contracted to civilian commercial operators, so the Coast Guard OSC has acted as a focal point. The equipment necessary to conduct Phases II and III of the response is also limited, but there are sufficient commercial resources available.

We are continuing to urge the responsible parties to take over the response efforts off the New Jersey Coast, but to date they have declined. We are considering an administrative order to force the issue. If so ordered, and the owner and operator continue to decline, the Federal OSC will initiate Phase III recovery efforts using the CERCLA Superfund. As noted below, the vessel owner's representatives have conducted the necessary response efforts in Baltimore and Charleston. In these cases, they have been somewhat cooperative with the Federal OSC's, and have responded as needed to ensure they met the OSC's directions.

Returning to events on the M/V SANTA CLARA I, at approximately 10:30 P.M. on January 7th, the vessel arrived at Charleston, South Carolina. The vessel was to off-load part of its cargo, including 19 remaining containers of arsenic trioxide. As the vessel was being off-loaded on the morning of January 8th, it was boarded by Coast Guardsmen from the Charleston MSO. During this boarding, the MSO personnel were informed of a magnesium phosphide spill in the number-one cargo hold. The magnesium phosphide came from steel drums which were presumably damaged in the cargo hold during the storm. Magnesium phosphide is potentially very dangerous as it forms toxic phosphine gas when exposed to moisture, and may burn spontaneously.

Because some of the longshoremen working the vessel had complained of respiratory irritation and nausea, and because they may have come in contact with the magnesium phosphide, 42 longshoremen were taken to a local hospital for examination or observation. To date, no further medical problems have been reported.

To limit access to the area, the Coast Guard Captain of the Port (COTP) established a safety zone around the vessel and terminal. Local emergency response units were brought in from the Charleston Fire Department, North Charleston Fire Department, city police, county emergency services, and U.S. Air Force Fire Fighting department. The vessel operator also hired a local cleanup contractor.

All the steel drums of magnesium phosphide had been off-loaded in Baltimore. The drums had broken loose during the storm, became damaged, and left residue on the deck and among lumber also stowed in the hold. The drums had been incorrectly listed on the ship's manifest as "General Cargo," not as "Dangerous Cargo." A check with Baltimore revealed that approximately 825 pounds of the magnesium phosphide were unaccounted for. The Charleston COTP then issued an order to the vessel, detaining it at the terminal until all dangerous cargo was properly recovered.

On January 9th, the vessel was evacuated of all personnel except for a small engineroom detail. Personnel from the Coast Guard National Strike Force (NSF) arrived on scene. The cleanup contractor hired by the vessel's Protection and Indemnity (P&I) Club representative, together with the Coast Guard NSF, local Coast Guard MSO, and fire departments, developed a response plan and a site safety plan.

Initial deactivation of the magnesium phosphide called for raking and leveling the material followed by a two-hour wait. Then small portions of the material were introduced into a 55-

gallon drum of fresh water. Initial efforts produced vigorous reactivity including production of gas, flames and minor detonations. As a result, the contractor decided to reduce the amount of material in subsequent deactivations.

The Coast Guard COTP decided that the safest place to conduct the cleanup was away from the terminal, so on January 10th, the ship was moved to an isolated anchorage in Charleston Harbor. The entire anchorage was established as a safety zone to keep out tour boats and provide an extra margin of safety.

The response plan called for the product to be dry-deactivated by raking it level on the deck of the cargo hold and allowing natural humidity in the air to release the phosphine gas. The dry deactivation process was slow, since the deactivated magnesium phosphide formed a crust as the gases were released, thus sealing the remaining product below. Frequent raking was required to allow the process to continue.

After the product had been dry deactivated, it was then ready for wet deactivation. Very small amounts of the product were immersed in a large drum of water under constant mixing to allow the remainder of the phosphine gases to be released. The products of dry and wet deactivation processes are nonhazardous materials -- a benefit in terms of safety and cost.

The deactivation process was slowed by frequent periods of inclement weather. Monitoring by the Coast Guard and Occupational Safety and Health Administration ensured personnel safety at all times.

During the magnesium phosphide deactivation, the cleanup contractors also finished removal of many small patches of arsenic trioxide on the vessel's deck. Removal of the arsenic trioxide and magnesium phosphide was completed on February 7th, and the ship was allowed to return to the terminal. The ship was cleared to resume cargo off-loading on February 8th, and all Coast Guard activities in hazardous material removal were terminated.

The Coast Guard and the Department of Justice have been concerned from the outset about recovery of the Federal funds being expended. Operations off the New Jersey coast are being funded by the CERCLA Superfund. The response in Baltimore was paid for by the ship's agent. The response contractors' costs in Charleston have been paid by the vessel's P&I Club, however the Coast Guard's costs have not been paid. On February 7th, the Justice Department filed suit against the M/V SANTA CLARA I and, the owner, operator and master, in Federal District Court. The ship was required to issue a Letter of Undertaking for the full value of the vessel ($2.9 million). Since the United States has ready access to assets equal to the value of the vessel, it was allowed to leave port after consultation with the affected State and Federal agencies. The owner, operator and master remain jointly and severally liable for government response costs that exceed the value of the vessel.

In responding to your question regarding the sufficiency of federal laws and international agreements to address hazardous and noxious substance (HNS) spills, let me state that currently

no international liability and compensation regime exists, though such an instrument is being negotiated. The International Maritime Organization is developing a draft HNS Convention that would assign liability and provide compensation for a range of damages caused by a broad list of HNS substances carried at sea. The types of compensable damages would include personal injury damages, property damages, and costs to restore the environment. Claims could be asserted by both public and private claimants against both the shipowner and against an international fund financed by cargo interests.

Before addressing domestic laws, it is appropriate to mention that the M/V SANTA CLARA I incident is not uncommon in that HNS incidents are frequent and often pose threats to both human health and the environment. During the last decade, there were approximately 800 reportable releases of hazardous substances from vessels. Additionally, there were over 200 explosions and fires on vessels carrying HNS cargo. A report produced for the Coast Guard surveyed international HNS incidents and found that at least one significant HNS release has occurred monthly over the past two decades.

A patchwork of domestic law has evolved to address hazardous substances incidents. As will be mentioned in the EPA's testimony, Federal law provides for the State and Federal Governments to recover response costs and natural resource damages. Although CERCLA allows recovery for response costs and natural resource damages, the $5 million limitation for vessels would limit the ability to recover costs from the responsible

party that exceed this limit. In some circumstances, when response costs exceed this limitation, it may be difficult or impossible to establish the necessary elements to break the cap. If release or threat of release is from a facility, then these limits would not apply.

However, sorting out which of the many domestic laws apply to an HNS incident is not always an easy task. Different laws are triggered depending upon who the victim might be, what types of damage results, where the spill occurs, and what substance is spilled. With different statutes, or different principles of common law, come different standards of and limits to liability. Moreover, non-government claims would be subject to the Federal Limitation on Liability Act.

In the international context, while no HNS liability regime currently exists, a draft HNS Convention should soon be finalized by the IMO Legal Committee which would allow both public and private victims to assert strict liability claims to recover for personal injury and damage to property and the environment.

It is appropriate here to review the investigative aspects of this incident. Due to the seriousness of the incidents, on January 27th, the Commandant ordered the convening of a Board of Inquiry to review all aspects of this shipment.

This board is chaired by a Coast Guard Captain with two other officers participating. In order to conduct a comprehensive investigation and gather all relevant facts, the Board of Inquiry will visit all the sites involved and prepare a report of its findings, conclusions, and recommendations. Since

the board is still conducting its investigation, it would be inappropriate for me to speculate on the outcome.

Each Coast Guard unit involved is reviewing its files on this incident for violations of Federal law or regulations. Where warranted, reports of violation will be prepared and submitted to a Coast Guard hearing officer for assessment of appropriate civil penalties. Federal costs for cleanup operations can be recovered under both CERCLA and the FWPCA. In addition, there is a significant legal sanction imposed for failure to comply with an administrative order. This amounts to up to $25,000 per day which the failure to comply continues. In addition, the vessel owner may also be subject to pay punitive damages of up to three times the cleanup costs.

In conclusion, the overall response to the M/V SANTA CLARA I incident has gone well. Relatively minor delays have resulted from inclement weather and failure of the responsible parties to begin searching for the missing containers. Both OSC's have praised the spirit of cooperation and efforts of the various agencies involved. We are pleased with the effectiveness of the National Response system as laid out in the National Oil and Hazardous Substances Contingency Plan (NCP) which requires full cooperation of agencies at the local, regional, and national levels. This coordinated, cooperative effort by agencies at all levels of government will continue until the situation is resolved.

I will be happy to answer any questions you might have at this time.