DEPARTMENT OF THE NAVY
NAVAL SURFACE WARFARE CENTER
CARDEROCK DIVISION
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WEST BETHESDA MD 20817-5700

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From: Commanding Officer, Naval Surface Warfare Center, Carderock Division
To: Navy Environmental Sustainability Development to Integration (NESDI) Program

Subj: NESDI PROJECT NUMBER 533 FINAL REPORT – ANALYSIS OF SHIPBOARD AND SHORESIDE REGULATED GARBAGE MANAGEMENT PROCESSES TO ENSURE EFFICIENT COMPLIANCE WITH U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE REGULATIONS

Encl: (1) NSWCCD-63-TR–2019/43, "NESDI Project Number 533 Final Report – Analysis of Shipboard and Shoreside Regulated Garbage Management Processes to Ensure Efficient Compliance with U.S. Department of Agriculture Animal and Plant Health Inspection Service Regulations"

1. The Naval Surface Warfare Center, Carderock Division (NSWCCD) is forwarding Enclosure (1), "NESDI Project Number 533 Final Report – Analysis of Shipboard and Shoreside Regulated Garbage Management Processes to Ensure Efficient Compliance with U.S. Department of Agriculture Animal and Plant Health Inspection Service Regulations." This technical report summarizes the results of NSWCCD Code 632's efforts to develop a better understanding of shoreside and shipboard regulated garbage (RG) management processes, with the aim of creating best practices to ensure efficient RG compliance with U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) regulations.

2. NSWCCD collaborated with the Fleet, Navy shoreside personnel (Port Operations, Naval Facilities Engineering Command (NAVFAC), USDA APHIS and U.S. Customs and Border Protection inspectors, Naval Submarine Support Command), Naval Supply Systems Command (NAVSUP), and Naval Sea Systems Command (NAVSEA) to develop a baseline of RG management practices – from origination as foreign food stores to disposal shoreside at a USDA-approved treatment facility – and a standardized best management practices document and training slides that are applicable to all U.S. homeports. NSWCCD also provided recommended changes to related NAVSUP and NAVFAC documents, the Afloat Environmental Protection Coordinator (AEPC) course, and submitted a RG management question to Commander, U.S. Pacific Fleet for inclusion in the Logistics Common Operating Picture Environmental Readiness Tool (LOGCOP ERT). The RG best practices document and slides were evaluated in the fleet for approximately a year. The evaluation period was too short to gauge the impact of the best practices document and slides, and changes to the AEPC course and LOGCOP ERT had not gone into effect. However, there were signs that the best practices were reaching ships and being followed to a limited degree.

Subj: NESDI PROJECT NUMBER 533 FINAL REPORT – ANALYSIS OF SHIPBOARD AND SHORESIDE REGULATED GARBAGE MANAGEMENT PROCESSES TO ENSURE EFFICIENT COMPLIANCE WITH U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE REGULATIONS

3. This report, or any data or data analysis from this report, does not necessarily represent, or imply the NAVSEA Technical Authority position. Consult Naval Ships Technical Manual (NSTM) 593 (Pollution Control), NSTM 670 (Afloat Hazardous Material Control and Management Guidelines) and Naval Vessel Rules (NVR) Part 5, Chapter 7 (Environmental Protection Systems) for NAVSEA Dry Environmental Systems and Hazardous Materials – Ships TWH guidance and direction, or contact the NAVSEA TWH for Dry Environmental Systems and Hazardous Materials – Ships directly.

4. For comments or questions, please contact Ms. Tracy M. Carole, Code 632; COM: (301) 580-5417; e-mail: tracy.carole@navy.mil.

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Naval Surface Warfare Center
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NSWCCD-63-TR-2019/43 March 2020

Platform Integrity Department

Technical Report

NESDI Project Number 533 Final Report – Analysis of Shipboard and Shoreside Regulated Garbage Management Processes to Ensure Efficient Compliance with U.S. Department of Agriculture Animal and Plant Health Inspection Service Regulations

by

Tracy M. Carole
Naval Surface Warfare Center, Carderock Division

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Naval Facilities Engineering Command Engineering and Expeditionary Warfare

NESDI Project Number 533 Final Report – Analysis of Shipboard and Shoreside Regulated Garbage Management Processes to Ensure Efficient Compliance with U.S. Department of Agriculture Animal and Plant Health Inspection Service Regulations

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Naval Surface Warfare Center
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NSWCCD-63-TR-2019/43 **March 2020**

Platform Integrity Department

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14. ABSTRACT:
This technical report summarizes the results of the Navy Environmental Sustainability Development to Integration (NESDI) Program Project Number 533 – Analysis of Shipboard and Shoreside Regulated Garbage Management Processes to Ensure Efficient Compliance with U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) regulations. NSWCCD Code 632 collaborated with the Fleet, shoreside personnel, and other Navy commands to develop a baseline of RG management practices, a standardized best management practices document and training slides that are applicable to all U.S. homeports, and identified multiple delivery methods for the best practices information. A Fleet evaluation of the best practices document and slides was conducted and although the evaluation period was too short to gauge the full impact of the best practices information and delivery methods, there were signs that the information was reaching the ships and being followed to a limited degree.

15. SUBJECT TERMS
NESDI; regulated garbage; foreign garbage; USDA APHIS

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ANALYSIS OF SHIPBOARD AND SHORESIDE REGULATED GARBAGE MANAGEMENT PROCESSES TO ENSURE EFFICIENT COMPLIANCE WITH U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE REGULATIONS

NESDI Project Number 533

NESDI PROJECT FINAL REPORT

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March 2020

NESDI Program
Final Report

Analysis of Shipboard and Shoreside Regulated Garbage Management Processes to Ensure Efficient Compliance with U.S. Department of Agriculture Animal and Plant Health Inspection Service Regulations
Project # 533

Submitted By:		
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ACRONYMS

AEPC – Afloat Environmental Protection Coordinator
AI – Agriculture Inspector
CA – California
CBP – Customs and Border Protection
CNO – Chief of Naval Operations
COMNAVAIRLANT – Commander, Naval Air Force Atlantic
COMNAVAIRPAC – Commander, Naval Air Force Pacific
COMNAVSURFLANT – Commander, Naval Surface Force Atlantic
COMNAVSURFPAC – Commander, Naval Surface Force Pacific
COMPACFLT – Commander, U.S. Pacific Fleet
COMSUBLANT – Commander, Submarine Force Atlantic
COMSUBPAC – Commander, Submarine Force U.S. Pacific Fleet
DB – Double-Bagged
DHS – Department of Homeland Security
FLC – Fleet Logistics Center
GSA – General Services Administration
HI – Hawaii
JBPHH – Joint Base Pearl Harbor-Hickam
LOGCOP ERT – Logistics Common Operating Picture Environmental Readiness Tool
LOGREQ – Logistics Requisition
N/A – Not Applicable
NAVFAC – Naval Facilities Engineering Command
NAVFAC SW – NAVFAC Southwest
NAVSAFENVTRACEN – Naval Safety and Environmental Training Center
NAVSEA – Naval Sea Systems Command
NAVSUP – Naval Supply Systems Command
NAVSUP FMS – NAVSUP Food Management Service
NAVSUP FMT – NAVSUP Food Management Team
NSSC – Naval Submarine Support Command
NESDI – Navy Environmental Sustainability Development to Integration
NS – Naval Station
NSN – National Stock Number
NSWCCD – Naval Surface Warfare Center, Carderock Division
OPNAV – Office of the CNO
PEM – Port Environmental Manual
PPQ – Plant Protection and Quarantine
RG – Regulated Garbage
S/F – Ship's Force
SOP – Standard Operating Procedure
SUPPO – Supply Officer
TYCOM – Type Commander
USDA APHIS – U.S. Department of Agriculture Animal and Plant Health Inspection Service
USFF – U.S. Fleet Forces Command

FIGURES

TABLES

ACKNOWLEDGEMENTS

The contributions and support of many individuals across the Navy Fleet, Navy shoreside personnel, and others were key to the success of this project. The project team would like to thank all of the collaborators listed below that helped define the problem and shape the solution:

- Supply Officers, Food Service Officers, and Culinary Specialists across the Navy Fleet

- Naval Facilities Engineering Command, Port Operations, and other shoreside personnel representing:
    - Naval Station Norfolk
    - Naval Station Mayport
    - Naval Submarine Base New London
    - Naval Submarine Base Kings Bay
    - Naval Base San Diego
    - Naval Base Kitsap, Naval Base Everett
    - Joint Base Pearl Harbor-Hickam and
    - Naval Base Guam

- Environmental, Supply, Food Service, and Food Service Management personnel representing:
    - Commander, Naval Surface Force Atlantic
    - Commander, Naval Surface Force Pacific
    - Commander, Naval Air Force Atlantic
    - Commander, Naval Air Force Pacific
    - Commander, Submarine Force Atlantic
    - Commander, Submarine Force U.S. Pacific Fleet
    - U.S. Fleet Forces Command, and
    - Commander, U.S. Pacific Fleet
    - Naval Supply Systems Command

- U.S. Department of Agriculture Animal and Plant Health Inspection Service representatives.

This research was made possible by the Navy Environmental Sustainability Development to Integration (NESDI) Program with resources provided by the Chief of Naval Operations Energy and Environmental Readiness Division (CNO N45). The NESDI Program seeks to provide solutions by demonstrating, validating, and integrating innovative technologies, processes, materials, and filling knowledge gaps to minimize operational environmental risks, constraints and costs while ensuring Fleet readiness. For more information, visit the NESDI Program website at https://www.navfac.navy.mil/nesdi or contact the NESDI Program Manager at 805-982-4893.

EXECUTIVE SUMMARY

This report describes the results of Naval Surface Warfare Center Carderock Division (NSWCCD) Code 632's efforts to develop a better understanding of shoreside and shipboard regulated garbage (RG) management processes—from origination as foreign food stores to disposal shoreside at a U.S. Department of Agriculture-approved treatment facility—with the aim of creating standard operating procedures (SOPs) or best practices to ensure efficient RG compliance. Regulated garbage is defined as waste material derived from plant or animal materials from foreign countries. U.S. waste that is commingled with RG is also considered RG. The handling, transportation, and disposal of RG is controlled to prevent the introduction and spread of exotic plant and animal pests and diseases. Navy installations are required to operate in accordance with U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) regulations and policies when handling RG and must ensure that Navy vessels are meeting RG labeling, storing, tracking, offload, and disposal requirements. Regulated garbage management is complicated by the fact that it cuts across several shipboard areas of responsibility (e.g., galley/scullery, shipboard supply, shipboard environmental) but is ultimately the responsibility of the Navy installation at which it is offloaded.

With the support of the Fleet, shoreside personnel (Port Operations, Naval Facilities Engineering Command (NAVFAC), USDA APHIS inspectors, Naval Submarine Support Command), NSWCCD developed a baseline of RG management practices. The baseline revealed that the majority of sailors involved with RG management are aware of at least some of the requirements, but knowledge gaps exist across Fleets and ship classes. For example, none of the ships surveyed were aware of the 24-hour rule. Knowledge gaps are due to key personnel receiving little or no information or guidance and/or misinterpreting guidance received. Ultimately, USDA APHIS compliance is ensured at homeports through oversight from Navy and/or Customs and Border Protection (CBP) personnel located ashore. General RG guidance and port-specific details are typically provided in the logistics requisition (LOGREQ) by shoreside personnel with reminders at the time of RG offload. Although RG compliance is achieved, it is often not efficient and may require unnecessary time and effort upon arrival to bag and offload all RG in accordance with USDA APHIS regulations.

Naval Surface Warfare Center Carderock Division collaborated with all stakeholders to develop a standardized best practices document and training slides that are applicable to all U.S. homeports. The best practices document and slides include the definition of RG, examples of when and how USDA APHIS RG requirements apply to vessels, best practices for managing and offloading RG, and an all-hands template that Navy vessels can use to ensure the entire crew is aware of RG requirements prior to return to the United States. As part of the process to standardize how RG is managed across all U.S. homeports, NSWCCD identified a clear, 3-mil (0.003 inch) thick bag that meets USDA APHIS requirements and has a national stock number (NSN), and provided NSNs for materials used to secure and seal bags containing RG. In addition, at the request of the Fleet, NSWCCD developed a label that vessels can use to identify bags of RG and obtained a NSN for it.

The best practices document and slides were provided to the Fleet for distribution to ships in pre-deployment training, and to the shoreside personnel at U.S. homeports for inclusion in LOGREQ responses to ships when requesting services for the first U.S. homeport visit after being overseas. The best practices document and training slides were also made available on the Afloat Compliance site managed by US. Fleet Forces Command (USFF). NAVFAC, Naval Supply Systems Command (NAVSUP), and Naval Sea Systems Command (NAVSEA) documents that address RG and the Afloat Environmental Protection Coordinator (AEPC) course were reviewed and changes were recommended where needed. A RG management question was also submitted to Commander, U.S. Pacific Fleet (COMPACFLT) for inclusion in Logistics Common Operating Picture Environmental Readiness Tool (LOGCOP ERT), a semi-annual assessment of ship/submarine environmental readiness.

The best practices implementation evaluation period was too short to gauge the impact of the best practices document, and changes to the AEPC course and LOGCOP ERT had not gone into effect. However, there are signs that the best practices are reaching ships and being followed to a limited degree, including a noticeable increase in procurement of the clear, 3-mil thick bags, offloaded RG bags sealed in accordance with the best practices document, and some awareness of the 24-hour rule at the end of the best practices evaluation period. More time will be required to determine if this project results in an improvement in RG management. With continuous crew turnover and the fact that RG management is an infrequent exercise, it is clear that sailors will require as many reminders as possible of the RG management requirements. The AEPC course and LOGCOP ERT will help raise awareness of RG management. The NAVSUP Food Management Team (FMT) training would have been a good opportunity to educate Culinary Specialists on RG management requirements, but the NAVSUP Food Management Service (FMS) indicated that they would not include RG management in the training. However, NAVSUP FMS would ensure that the FMT trainers would be able to explain RG management requirements if requested by the Culinary Specialist. NSWCCD recommends that the Fleet request that FMT training include the basics of RG management.

1. INTRODUCTION

1.1 BACKGROUND

Regulated garbage (RG) is defined as waste material derived from plant or animal materials from outside the contiguous continental United States, Alaska, and Canada. U.S. waste that is commingled with RG is also considered RG. The handling, transportation, and disposal of RG is controlled to prevent the introduction and spread of exotic plant and animal pests and diseases. Navy installations are required to operate in accordance with USDA APHIS regulations and policies when handling RG and must ensure that Navy vessels are meeting RG labeling, storing, tracking, offload, and disposal requirements.

Vessels returning from deployment are required to properly dispose of RG and are inspected by a Department of Homeland Security (DHS)-CBP-Agriculture Inspector (AI) representative to ensure compliance. Homeports have 72 hours in which to process or haul RG to an approved treatment facility. There are no known USDA APHIS RG infractions at any U.S. homeports, but the feedback from homeport DHS-CBP-AI inspectors indicates that there are areas for improvement.

Regulated garbage management is complicated by the fact that it extends across several shipboard and shoreside areas of responsibility (e.g., galley/scullery, shipboard supply, shipboard environmental, shoreside environmental, shoreside integrated solid waste, shoreside transportation) and practices vary from homeport to homeport. Despite the shipboard and shoreside guidance on RG management, there is a lack of knowledge of how the RG guidance is implemented aboard vessels and how RG is managed shoreside at all U.S. homeports. The potential exists for uninformed regulated garbage management non-compliance that could be a serious risk to the U.S. environment and agricultural industry.

1.2 REGULATORY DRIVERS

The USDA APHIS, Plant Protection and Quarantine (PPQ) provides oversight for agricultural issues including APHIS regulated garbage. USDA is granted authority to take such action in the Plant Protection Act (PPA) (7 U.S.C. §§ 7701 et. seq.) and the Animal Health Protection Act (7 U.S.C. §§ 8301 et. seq.).

Defense Transportation Regulation – Part V, Chapter 505 states that vessel/aircraft garbage, “will be placed in tight, leak-proof, covered containers and disposed of following port procedures authorized by, or under surveillance of CBP Agriculture Specialist officials. Disposal facilities to incinerate or sterilize must be available and under compliance agreement with CBP in conjunction with USDA APHIS approval before military conveyances will be allowed landing or docking at a U.S. installation or port.”

Regulated garbage management at Navy homeports is governed by the compliance agreement between each U.S. homeport and USDA APHIS, per Title 7 Code of Federal Regulations §330.400-§330.403 and Title 9 Code of Federal Regulations §94.5. The compliance agreements outline the procedures for removing regulated garbage from conveyances. The agreements include contacts to request a RG dumpster or RG pick-up, approved processing facilities, approved hauler(s), back-up plan for RG removal, cleaning and disinfection procedures, training, persons of contact, and sample tracking logs (spills, training).

1.3 OBJECTIVE OF THE PROJECT

The project objective was to develop a better understanding of shoreside and shipboard RG management processes—from origination as foreign food stores to disposal shoreside at a USDA-approved treatment facility—with the aim of creating standard operating procedures or best practices to ensure efficient RG compliance.

2. TECHNOLOGY DESCRIPTION

2.1 TECHNOLOGY OVERVIEW

This study is the first comprehensive look at the RG pathway from the shipboard management of foreign food stores and RG to offload and disposal shoreside. Between the lack of knowledge of how the RG guidance is implemented aboard vessels, the differences in RG shoreside management and disposal between U.S. homeports, and a waste that crosscuts several areas of responsibility both shipboard and shoreside, the potential exists for RG management non-compliance that could be a serious risk to the U.S. environment and agricultural industry.

2.2 TECHNOLOGY DEVELOPMENT

Current RG management processes are as follows. Each U.S. installation has a signed USDA APHIS compliance agreement which outlines the procedures for removing regulated garbage from conveyances, contacts to request a RG dumpster or dumpster pick-up, approved cleaning firm, approved processing facility, hauler/cartage firm(s), back-up plan for RG removal, cleaning and disinfection procedures, contact personnel, and sample tracking logs (RG spill, management training). If returning vessels do not have regulated foreign stores, RG will be offloaded as described in the compliance agreement and the DHS-CBP-AI inspector will ensure that the vessel has been cleared of all regulated foreign stores and RG, and RG has been disposed of according to USDA APHIS procedures. The "24-hour rule" will then be applied (all waste from galley/scullery aboard is treated as RG), after which all garbage will be considered non-RG[1]. Once received by the installation, RG must be processed or hauled within 72 hours.

The process of offloading regulated garbage from vessels varies between installations. For example, at installations under Commander, Navy Region Mid-Atlantic, each returning vessel is responsible for requesting a RG dumpster from the approved contractor, which is delivered to the pier, picked-up within 72 hours of when RG is first transferred to the dumpster, and transported to the treatment facility by the approved contractor. Naval Station Mayport, Naval Submarine Base New London, Naval Submarine Base Kings Bay, Naval Base Kitsap, Naval Base Everett, and Joint Base Pearl Harbor-Hickam also handle RG similarly. At Naval Base Guam, RG containers are left pierside until the 24-hour rule is fulfilled and then they are picked up by NAVFAC Marianas contractors and transported to a treatment facility operated by NAVFAC Marianas; treated RG is transported to a landfill. At NAVFAC Southwest (NAVFAC SW) installations, the Base Support Vehicle and Equipment group owns approved RG trucks and stops by the pier at least once a day for the recently returned vessel to offload its RG. The RG is stored at the USDA-approved storage area on base until the truck is full or the 72 hour limit is reached, whichever is sooner. The Base Support Vehicle and Equipment group transports the RG to the approved third-party-operated sterilization facility via the USDA-approved route where it is manually unloaded from the truck and transferred to approved containers for disposal by the sterilization facility employees.

Shipboard RG management is discussed in the Environmental Readiness Program Manual (OPNAV M-5090.1) and the NAVSUP Publication 486 (P-486) (Food Service Management General Messes). OPNAV M-5090.1 contains a paragraph in the solid waste section that provides general guidance on how

[1] A vessel may not hold its waste for 25 hours and then dispose of the waste as non-RG. If a vessel is not cleared of all regulated foreign stores and RG and does not complete the 24-hour rule, all waste from the vessel will be considered RG and must be disposed of as such, until the vessel completes both the foreign stores/RG offload and 24-hour rule. Additionally, if the first U.S. port visit is less than 24 hours, waste from the vessel will still be considered RG at subsequent U.S. ports until the vessel is cleared of foreign stores/RG and completes the 24-hour rule.

to minimize regulated foreign food stores via consumption, transfer to an outbound vessel prior to docking, or disposal as waste beyond 25 nautical miles from U.S. shores and that plastic waste (e.g., pucks from ships, slugs from submarines) contaminated with regulated foreign source food or garbage, will be treated as RG and disposed of ashore by USDA-approved methods. NAVSUP P-486 defines RG and the 24-hour rule and mentions the PPQ Form 288 used by the DHS-CBP-AI inspector to document the purging or transfer of foreign stores to an outgoing vessel.

With the multitude of players involved in RG management, there is concern that USDA APHIS RG requirements are not being met in an efficient manner. Although some variation between homeports is to be expected (e.g., specifics of RG dumpsters and haulers due to availability of approved RG handling/transportation/treatment companies), standardizing as much of the guidance as possible, including information distribution methods, will help ensure efficient compliance with USDA APHIS requirements.

2.3 TECHNOLOGY ADVANTAGES AND LIMITATIONS

Current RG management processes are not clearly defined at the deckplate level and different parts of the process are described in different manuals and documents. Therefore, sailors may not be receiving complete instructions on how to manage RG and USDA APHIS compliance will require more oversight from Navy shoreside and DHS-CPB-AI personnel.

A standardized best practices document will provide sailors with the information required to efficiently manage RG and minimize the risk of USDA APHIS non-compliance. Establishing a reliable information distribution process that does not rely on a handful of individuals will be key to ensuring that this effort has a lasting impact.

3. PERFORMANCE OBJECTIVES

The performance objectives for this project were to improve the RG management processes, reduce the risk of RG management non-compliance, and reduce the sailor and shoreside RG management burden. The original performance objectives and success criteria are presented below in Table 1.

Table 1. Performance Objectives

Performance Objective	Data Requirements	Success Criteria
QUANTITATIVE		
Improved RG management processes	Volume of RG offloaded	Reduction from baseline
Improved RG management processes	Number of days ship is pierside until DHS-CBP-AI certificate is issued	Reduction from baseline. Reflects amount of foreign food stores remaining
QUALITATIVE		
Risk of RG non-compliance	Feedback from sailors on time spent managing foreign food stores and RG.	Perceived reduction from baseline
	Feedback from senior sailors on degree of junior sailor comprehension of RG management requirements • Reminders required • Explanations requested • RG management situations requiring correction	Perceived reduction from baseline
	Feedback from shoreside personnel on ship's understanding of RG management/offload requirements for DHS-CBP-AI inspection • Completeness of labelling/storing/tracking documentation • Amount of assistance required by ship to comply with requirements	Perceived reduction from baseline
Sailor burden of RG management	Feedback from sailors on time spent managing foreign food stores and RG.	Perceived reduction from baseline
Shoreside personnel burden of RG management	Feedback from shoreside personnel on time spent or number of interactions with ship	Perceived reduction from baseline

4. FACILITY/SITE DESCRIPTION

4.1 FACILITY/SITE LOCATION AND OPERATIONS

For the development of the RG management baseline and best practices, the study considered all U.S. homeports. For the evaluation of the best practices, the study focused on Naval Station Norfolk, Naval Base San Diego, and Joint Base Pearl Harbor-Hickam. Feedback for both baseline development and best practices evaluation was collected from a mixture of ship classes to document the variances of procedures between ship classes.

5. TEST DESIGN

5.1 RG MANAGEMENT BASELINE ESTABLISHMENT

NSWCCD conducted an initial survey of RG management practices at all U.S. homeports listed below to establish a baseline of shipboard knowledge and practices:

- Naval Station Norfolk (Virginia);
- Naval Station Mayport (Florida);
- Naval Submarine Base New London (Connecticut);
- Naval Submarine Base Kings Bay (Georgia);
- Naval Base San Diego (California);
- Naval Base Kitsap, Naval Base Everett (Washington);
- Joint Base Pearl Harbor-Hickam (JBPHH) (Hawaii); and
- Naval Base Guam.

Feedback was collected from 10 Norfolk vessels (CVN, LHD, LPD, DDG, and CG Classes) and 5 vessels (CVN, DDG, and CG Classes) with recent Pearl Harbor port visits. USDA compliance agreements for the U.S. homeports were collected along with RG offload data and feedback from shoreside personnel (Port Operations, NAVFAC, Naval Submarine Support Command (NSSC), and USDA APHIS inspectors) to complete the baseline from the shoreside perspective. Feedback was also collected from USDA APHIS inspector responsible for California, Hawaii, and Guam (CA/HI/Guam) and at the invitation of the CA/HI/Guam inspector, NSWCCD attended a meeting of USDA APHIS inspectors covering all regions of the country.

USDA APHIS inspectors stated that a common issue faced by many USDA APHIS regions is trying to get Navy installations (Fleet and aviation) to update the compliance agreement when the installation command changes. This was noted, but no action was taken by NSWCCD as this is outside the project scope. However, the CA/HI/Guam inspector did point out areas for improvement with respect to offloading RG, including:

- All RG, including pucks, bagged in 3-mil thick bags;
- Bag closure (twisted and zip-tied or taped shut; double-knotting is not acceptable because it leaves openings/gaps);
- Placing only domestic trash in domestic trash container;
- Placing only properly bagged RG in RG container;
- Insufficient number of RG containers ordered (in some cases, excess RG was left unbagged next to the RG containers when the vessel departed); and
- Correct implementation of the 24-hour rule.

Analysis of the shipboard and shoreside feedback and documents revealed that the majority of sailors involved with RG management are aware of at least some of the requirements, but knowledge gaps exist that cut across Fleets and ship classes. Knowledge gaps are due to key personnel receiving zero or partial information or guidance and/or misinterpretation of guidance received. Examples included:

- Unfamiliarity with RG concept
- Awareness of RG, but could not identify all potential sources of RG (e.g., food waste, plastic and cardboard associated with food)
- Awareness of special bagging requirement, but could not identify correct bag thickness

In addition, all ships were unfamiliar with the 24-hour rule that is defined in NAVSUP P-486 and OPNAV M-5090.1.

Figure 1 shows the general RG management pathway and a qualitative estimate of ships performing each step. Obtaining 3-mil thick bags was the only step that all ships successfully performed, although it should be noted that some ships had difficulty procuring bags because they had no national stock number and had to open purchase the bags upon arrival. It should be noted that the step on properly bagging RG is defined as the RG being bagged in 3-mil thick bags and does not include the fine details of acceptable method of bag closure or bag labeling. In none of the RG offloads observed were the individual bags labeled. In one instance, the tri-walls that RG was collected in were labeled.

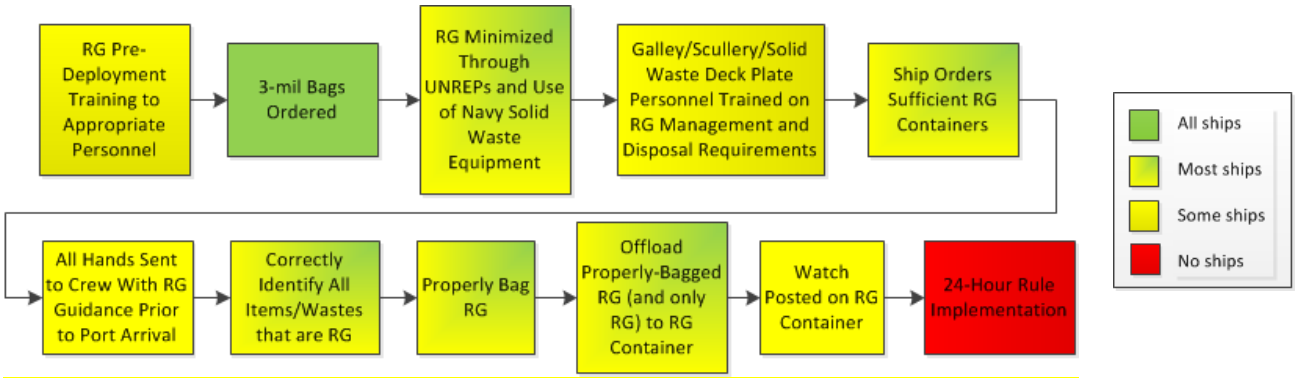

Figure 1. Shipboard RG Management Steps and Estimate of Fleet's Implementation

From the shore perspective, although the USDA APHIS requirements are the same for all homeports, how they are met varies by homeport based on the RG hauler/treatment options available. For instance, most homeports contract out to companies that leave RG containers at the pier for 72 hours before picking up and transporting the containers to a RG treatment facility. At Naval Base San Diego , NAVFAC Transportation owns and manages the RG containers and will transport them to the pier at scheduled times for offload and will then transport the RG collected to a private RG treatment facility within the 72 hour period. This procedure allows for tighter control of the RG and the NAVFAC employee oversight ensures that all RG is bagged properly. In addition, since the RG container is not left unattended pierside for several days, this homeport avoids an issue noted at other homeports of other people putting waste that is not sealed in 3-mil thick bags into the RG container and making the container non-compliant. Naval Base Guam has a steam sterilization facility, but does utilize contractors to maintain, transport, and perform pier-side inspections of the RG containers. It is not unheard of for non-RG that is not in a 3-mil bag to end up in the RG container, whether it is someone from the ship that just returned, another ship on the pier, or a passerby who is too lazy to take domestic trash to the correct container. Some ships have addressed this issue by posting a watch on the RG container because if it is discovered that the RG container is out of compliance, it is up to the ship to bring the container back into compliance. The RG haulers have the right to refuse a RG container that is out of compliance, although there have been no reports of such a refusal.

NSWCCD observed that the RG containers used vary significantly in size and weight restrictions. The containers range in size from 6 cubic yards to 30 cubic yards. The smaller containers open on top and can only be loaded with individual bags. Some of the larger containers have small openings on the side for individual bags and a door at the end that swings open to allow tri-walls to be forklifted in and pallet-jacked all the way to the back of the container. Container weight limits were not a concern for the larger containers, but for the smaller ones, such as the 8 cubic yard containers used at JBPHH, the 1,000-pound limit could easily be exceeded if only loaded with plastic pucks. Knowing the size of the RG containers available at the homeport is critical for ships to be able to order a sufficient number of containers. It is not uncommon for larger ships to underestimate the number of containers required for their RG and while this may be mostly due to not identifying all RG onboard, for large ships and carriers returning to JBPHH the container weight limit has also been an issue.

Some larger decks also had the expectation of being able to offload the RG, held in tri-walls on the hangar bays, directly to the RG container. This is not a viable option, even if the RG container has a door that accommodates a forklift, due to the quantity of tri-walls and the fact that doing so does not allow for efficient packing of RG into the container.

Of the USDA APHIS compliance agreements reviewed for six homeports, two (Naval Base Guam and Naval Station Norfolk) used the following standard language regarding bags and bag closure method: "Any plastic bags used in the handling, transportation or storage of regulated garbage must be at least three (3) mil (0.003-inch) thick and must be intact. Plastic bags used by the establishment for regulated garbage handling, transportation or storage must be uniquely identified by color, tag (attached to the bag) or label (printed on the bag)…Plastic bags used for storage of regulated garbage must be securely closed and leak-proof…" The other four compliance agreements had additional requirements regarding either the bag color or method of bag closure:

- Naval Station Mayport specifies that bags be sealed (using tape, zip ties, or double knots) to prevent leaking.
- Naval Submarine Base New London specifies that "the military base will use standard (3) mil (0.003-inch) or greater and the bags will be clear in color."
- JBPHH specifies that "…bags must be zip tied or taped closed. These are the only two methods acceptable for closure."
- Naval Base San Diego specifies that the bags must be twisted shut and sealed with duct tape.

Feedback from Naval Station Mayport and Naval Base San Diego indicate that the shoreside personnel will provide bags that meet the 3-mil thickness requirement. Naval Station Mayport provides bags that are a minimum 3-mil thick while Naval Base San Diego provides 4-mil thick, clear bags to ships. The greater thickness minimizes the risk of bag failure (and the cleaning and documentation that would be required should a spill occur) while the clear material allows for easier inspection of contents to ensure that there are no inappropriate items in the RG bag. At one of the other homeports, a small gas cylinder was found in the RG container instead of being handled as used/excess hazardous material. The gas cylinder could have potentially caused damage to the RG treatment facility if it had not been found and removed.

Ultimately, USDA APHIS compliance is ensured at homeports through oversight from Navy and/or CBP shoreside personnel. General RG guidance and port-specific details are typically provided in the LOGREQ by shoreside personnel with reminders at the time of RG offload. Although RG compliance is achieved, it is often not efficient and may require additional hours and a work party upon arrival to bag and offload all RG in accordance with USDA APHIS regulations.

5.2 RG MANAGEMENT BEST PRACTICES DEVELOPMENT AND IMPLEMENTATION

Based on the knowledge gaps identified, NSWCCD worked with representatives from Commander, Naval Surface Force Atlantic (COMNAVSURFLANT), Commander, Naval Surface Force Pacific (COMNAVSURFPAC), Commander, Naval Air Force Atlantic (COMNAVAIRLANT), Commander, Naval Air Force Pacific (COMNAVAIRPAC), Commander, Submarine Force Atlantic (COMSUBLANT), Commander, Submarine Force U.S. Pacific Fleet (COMSUBPAC), USFF, and COMPACFLT to develop a standardized best practices document and training slides that are applicable to all U.S. homeports. The best practices document and slides (see Appendices A and B) include the definition of RG, examples of when and how USDA APHIS RG requirements apply to vessels, management and offload best practices, and an all-hands template that Navy vessels can use to ensure the entire crew is aware of RG requirements prior to return to the United States. As part of the process to standardize how RG is managed across all U.S. homeports, NSWCCD identified a clear, 3-mil thick bag that meets USDA APHIS requirements and has a national stock number (NSN) and provided NSNs for materials used to seal bags of RG. In addition, at the request of the Fleet, NSWCCD developed a label (Figure 2) that vessels can use to identify bags of RG and obtained a NSN for it.

Figure 2. RG Bag Label

NSWCCD and the Fleet stakeholders also explored methods for distributing the best practices to sailors. Incorporating RG management into pre-deployment training would give the ships time to order and receive the clear, 3-mil thick bags and other materials prior to return to the United States. The inclusion of RG best practices in LOGREQs is beneficial as a reminder closer to port arrival on how to minimize RG, order a sufficient number of RG containers, and stage RG for an efficient offload. The best practices document and slides were distributed to the Fleet representatives for pre-deployment distribution and to shoreside personnel for inclusion in LOGREQ responses. The Fleet forwarded the best practices to the Supply Corps School for inclusion in the food services segment. NAVFAC personnel involved in RG management at some Navy homeports provide training in RG management to anyone (Fleet or shoreside) and incorporated elements of the best practices into their training materials.

In addition, the following manuals and training courses were reviewed and where needed, changes were submitted to correct or expand upon information covered:

- NAVSUP Publication 486 (P-486),Food Service Management General Messes
- OPNAV M-5090.1, Environmental Readiness Program Manual
- NAVFAC Port Environmental Manuals (PEMs)
- Afloat Environmental Protection Coordinator course provided by Naval Safety and Environmental Training Center (NAVSAFENVTRACEN) (some changes are still pending)

NSWCCD also engaged the NAVSUP FMS, which is responsible for NAVSUP P-486 and the Food Management Teams that provide food management training to each Navy vessel at least once every two years, to ensure that FMT training covered RG management. From initial feedback it sounded as though NAVSUP FMS would ensure that sufficient RG management information was included in the training. However, the last communication in 2019 stated that the RG best practices slides were not included in the fleet training and were instead used to ensure the FMT members understand RG requirements in case the Navy vessel requests clarification on RG requirements.

The USFF Afloat Compliance site was recommended as a home for the RG best practices document and slides by Fleet representatives and both were uploaded to the site in 2018. As another reminder of RG management requirements, COMPACFLT and USFF suggested adding a yes/no-type question to LOGCOP ERT, a semi-annual assessment of ship/sub environmental readiness. NSWCCD submitted a question and it is in the process of being added to LOGCOP ERT.

5.3 BEST PRACTICES IMPLEMENTATION EVALUATION

The RG best practices document and slides were released to the Type Commanders (TYCOMs) and shoreside personnel, and uploaded to the Afloat Compliance site in May 2018. The best practices document and slides were updated in December 2018 to add the RG bag label NSN, and distributed to the TYCOMs, shoreside personnel, and the Afloat Compliance site. To evaluate the RG best practices document and slides content and the fleet and shoreside distribution of the information, NSWCCD surveyed six ships at four locations in 2019 to observe the RG offload and collect feedback on the RG management information received. The data points were limited due to ship schedules and trying to select location/dates with multiple ships returning in hopes of getting at least one ship offload since ship schedules can change with little notice. The following offloads were surveyed:

- Three DDG Class ships at JBPHH
- Two of the DDG Class ships from JBPHH were also surveyed at Naval Base San Diego
- A LSD Class ship and a LPD Class ship were surveyed at Morehead City, North Carolina.
- A LHD Class ship was surveyed at Naval Station (NS) Norfolk.

JBPHH – Three vessels were selected for survey at JBPHH; DDG A, DDG B, and DDG C. Scheduling and access conflicts prevented collection of sailor feedback from DDG A, but the RG containers used for RG offload were located and their contents were inspected. The early arrival and rapid departure of DDG B prevented RG offload observations, but JBPHH Port Operations provided the number of containers ordered. Later correspondence with the Supply Officer (SUPPO) provided some information on bags used and best practices document/slides. DDG C's RG containers were observed after RG was offloaded, but NSWCCD was not able to obtain feedback from the SUPPO.

Naval Base San Diego – At Naval Base San Diego, none of DDG B's RG was bagged prior to the CBP inspection. NAVFAC Transportation provided the crew with clear, 4-mil thick bags and duct tape and a small work party offloaded, bagged, and transferred the RG to the RG container under the supervision of the NAVFAC Transportation employees. Typically, RG is not properly bagged prior to the CBP inspection and NAVFAC Transportation must wait pierside while RG is bagged and offloaded.

Morehead City, NC – One LSD Class ship and one LPD Class ship were selected for survey at Morehead City, North Carolina. NSWCCD did not observe the LSD offload as the SUPPO indicated that there was no RG for disposal. A CBP inspector arrived later that day, inspected the LSD, and determined that there was RG aboard. A work party was assembled to bag and offload the RG. The LSD RG offload information was provided by the shoreside personnel.

NSWCCD provided a copy of the RG best practices guidance prior to offload at the LPD SUPPO's request. All sailor-generated RG was properly bagged prior to arrival. However, some RG was discovered in one of the Marine berthing rooms after they had disembarked. A work party was assembled to bag and offload the RG. The CBP inspector for both LSD and LPD indicated that he had not noticed any improvements in sailor's knowledge of RG requirements.

NS Norfolk – One LHD Class ship was selected for survey at NS Norfolk. NSWCCD verified with the LHD SUPPO prior to port arrival that NS Norfolk would be the first U.S. homeport visited. The SUPPO disembarked shortly after arrival, leaving instructions for the Culinary Specialists that fresh fruits and vegetables needed to be bagged using the 30-gallon, clear, 3-mil thick bags the ship had ordered. LHD personnel seemed unaware that the large pile of food waste in thin black trash bags or wet-strength paper bags in the mess area and in tri-walls on the hangar bay was also RG. Several tri-walls of pucks were reportedly stored in a secured Hazardous Material space to which no key was available.

Inexplicably, a group of CBP inspectors had already been onboard but had not identified the pile of mess area waste, hangar bay tri-walls, or pucks as RG.

NSWCCD reached out to the local CBP to get official guidance for RG bagging since there were no 3-mil thick bags large enough to transfer the non-compliant bags of RG into (CBP directed the crew to triple-bag RG using the larger bags available that were less than 3-mil thick), and for their determination of waste type (RG or domestic trash) still aboard. NSWCCD explained the 24-hour rule and recommended bagging and offloading all RG, including the pucks that were locked away, immediately in order to start the clock on the 24-hour rule. Ship's force assembled a work party of 15-20 sailors to triple-bag the RG, load the bags into tri-walls, forklift the tri-walls to the RG containers which were placed at least 50 yards from the gangway, and then transfer the RG bags into the container. Due to the amount of RG, ship's force was still working on offloading the RG more than five hours later. NSWCCD also observed that by triple-bagging the RG, the RG volume was increased due to the excess air in each layer of the thinner bags, thereby increasing the number of tri-walls and time involved in forklifting them to the RG containers.

Table 2 summarizes the observations and feedback.

The results of the ship surveys demonstrated the best and worst case scenarios of RG management and offload. The LPD surveyed at Morehead City, NC showed that efficient RG management was possible by following the best practices, although bagging was required for the surprise RG left by the Marines. The LHD surveyed at NS Norfolk demonstrated the extra time and effort required to bring a large ship into RG compliance upon arrival and that the lack of RG-compliant bags increased the RG offload duration. Based on the implementation evaluation, the best practices were revised to include a reminder to vessels that carry other detachments (e.g., U.S. Marines, Navy SEALs) to ensure that RG management requirements are communicated to them.

Table 2. RG Offload Observations and Feedback

	JBPHH			Naval Base San Diego		Morehead City, NC		NS Norfolk
	DDG A	**DDG B**	**DDG C**	**DDG B**	**DDG C**	**LSD**	**LPD**	**LHD**
RG Containers Ordered	Three 8-cu. yd.	Three 8-cu. yd.	Three 8-cu. yd.	N/A	N/A	One 30 cu. yd.	One 30 cu. yd.	Two 30 cu. yd.
Sufficient for RG?	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes
Amount of RG?	~1.5 containers	Unknown	~1.5 containers	~2,250 lb	None, according to CBP	~0.5 container	~0.5 container	1.5-2 containers
Any items in RG container not bagged and/or not RG	Yes. 1 unbagged item (shelf), probably not RG	Unknown	No	No	N/A	No	No	No
Bags: 3-mil or double-bagged (DB)?	DB	3-mil	Neither. Single bags, did not appear to be 3-mil thick	4-mil	N/A	3-mil	3-mil	Triple-bagged per CBP
Clear bags?	No, black.	Yes	No, black.	Yes	N/A	No, black.	Yes	No, black.
Bag method of closure?	Most zip-tied; a few taped.	Unknown	Twisted shut and taped.	Taped shut.	N/A	Unknown.	Taped shut.	Double-knotted
Labeled?	No	Unknown	No	No.	N/A	No.	No.	No
If 3-mil bags, how were they obtained?	N/A	Ordered from SERVMART in Guam	N/A	NAVFAC provided	N/A	Unknown.	Ordered through supply system	N/A
Did S/F correctly identify all RG?*	Unknown	Unknown	Unknown	No	N/A	No	Yes	No
S/F aware of 24-hour rule*	Unknown	Unknown	Unknown	Yes	N/A	No.	Yes	No

Table 2. RG Offload Observations and Feedback, Continued

	JBPHH			Naval Base San Diego		Morehead City, NC		NS Norfolk
	DDG A	**DDG B**	**DDG C**	**DDG B**	**DDG C**	**LSD**	**LPD**	**LHD**
Received best practices document/slides?	Unknown	Yes	Unknown	Yes	N/A	No, but photos looked familiar.	Yes	Unknown
From who?	Unknown	SURFPAC and JBPHH FLC	Unknown	SURFPAC, JBPHH FLC	N/A	N/A	NSWCCD	N/A
Was information clear?	Unknown	Yes	Unknown	Yes	N/A	N/A	Yes	N/A
Other training received?	Unknown	No	Unknown	No	Unknown	Surface Squadron in Mayport	Can't remember, but had bag NSNs.	Unknown

* Without guidance from CBP or other shoreside personnel.
N/A = not applicable
S/F = Ship's force

6. PERFORMANCE ASSESSMENT

Based on the RG management process baseline established, it became clear that it would not be feasible to use the original performance objectives developed prior to the baseline study as a measure of success due to the incomplete feedback received, and data requirements that were determined during the baseline and evaluation to not be applicable to the situation. Additionally, the evaluation period was not long enough to ensure that the ships observed at the end of deployment had received the best practices in pre-deployment training or emails. Table 3 summarizes the findings related to the original quantitative and qualitative performance objectives.

Table 3. Performance Assessment Based on Original Objectives

Performance Objective	Data Requirements	Success Criteria	Criteria Met/Reason
QUANTITATIVE			
Improved RG management processes	Volume of RG offloaded	Reduction from baseline	N/A. In general, as long as food stores are depleted, volume of RG is relatively constant by ship class.
Improved RG management processes	Number of days ship is pierside until DHS-CBP-AI certificate is issued	Reduction from baseline. Reflects amount of foreign food stores remaining	N/A. Ships have already consumed foreign food stores and receive domestic status upon arrival from CBP.
QUALITATIVE			
Risk of RG non-compliance	Feedback from sailors on time spent managing foreign food stores and RG.	Perceived reduction from baseline	N/A. Collection of reliable data would be improbable and time would be influenced by number of sailors involved in management and ship class.
	Feedback from senior sailors on degree of junior sailor comprehension of RG management requirements • Reminders required • Explanations requested • RG management situations requiring correction	Perceived reduction from baseline	N/A. Confirmed that biggest issue is information getting stuck at the senior sailor level. Junior sailors may only receive partial RG requirements.
	Feedback from shoreside personnel on ship's understanding of RG management/offload requirements for DHS-CBP-AI inspection • Completeness of labelling/storing/tracking documentation • Amount of assistance required by ship to comply with requirements	Perceived reduction from baseline	No change in ship's understanding of requirements. N/A. Ships are inspected but do not receive assistance from CBP.
Sailor burden of RG management	Feedback from sailors on time spent managing foreign food stores and RG.	Perceived reduction from baseline	N/A. Collection of reliable data would be improbable and time would be influenced by number of sailors involved in management and ship class.
Shoreside personnel burden of RG management	Feedback from shoreside personnel on time spent or number of interactions with ship	Perceived reduction from baseline	No change. In general ships are arriving without all RG already properly bagged.

Although none of the original performance objectives were met, there were signs that information is getting to the fleet, although slowly and sometimes incompletely. Since the deployment of the best practices, procurement of the 3-mil bags through the General Services Administration (GSA) has increased (see Figure 3). Two of the returning ships met by NSWCCD also procured and used the 3-mil bags. Additionally, an order for 1,500 rolls of RG bag labels was placed in August 2019.

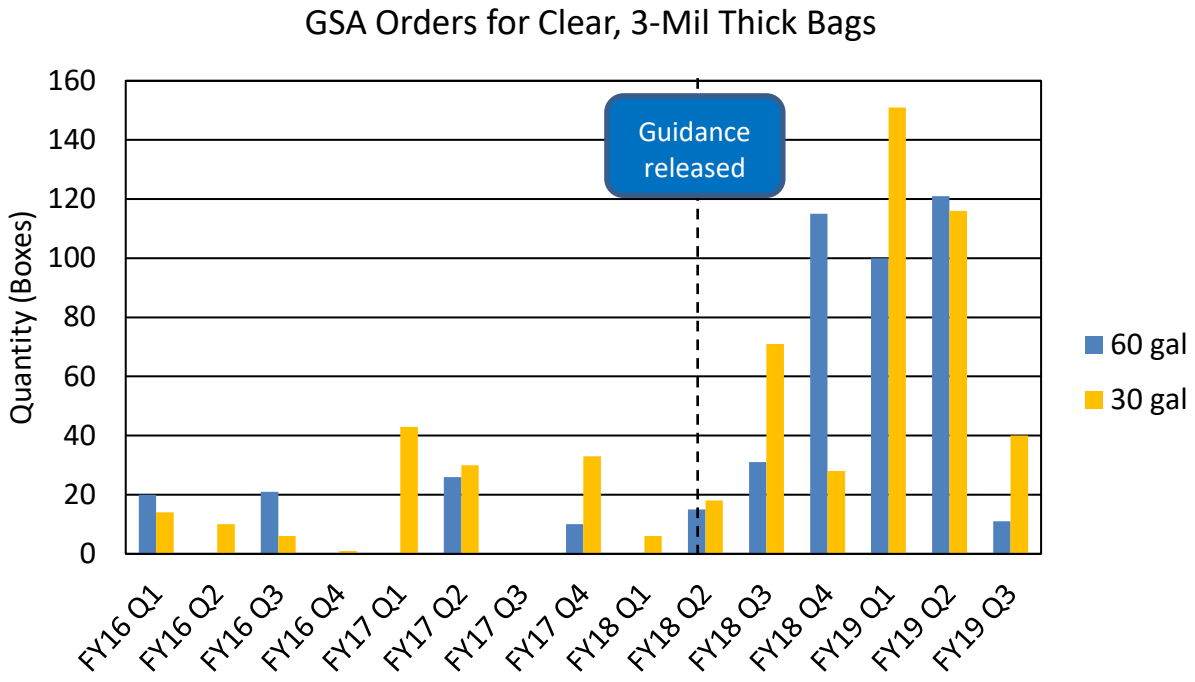

Figure 3. GSA Orders for Clear, 3-Mil Thick Bags

Another positive indicator that ships were receiving and reading the best practices document was the proper method of bag closure employed by the two DDG Class ships whose RG NSWCCD observed. In NSWCCD's experience, CBP inspectors will identify RG and state the bag requirements, but do not instruct sailors in how to seal the bags. The JBPHH compliance agreement specifies how to seal RG bags, but sailors do not have access to the compliance agreement. Therefore, the two ships must have received and read the best practices.

7. COST ASSESSMENT

No cost assessment was performed because the driver for this project was ensuring efficient RG compliance and not cost savings. The only tangible cost associated with RG management is the cost of the RG container and there is no way to eliminate that cost. Based on the USDA APHIS requirements, even if a vessel only procures USDA-approved food stores while deployed, all of the waste materials that are derived in whole or in part from fruits, vegetables, meats, or other plant or animal material, and other materials that have been commingled with it are considered RG by the fact that the vessel visited ports outside of the continental United States, Alaska, and Canada. This is to mitigate the risk posted by undocumented (e.g., personal) purchases of foreign foods. Therefore, all returning vessels are required to order an RG container for their first U.S. port visit. The Navy vessels surveyed throughout the project have been able to minimize food stores and food waste prior to the first U.S port visit through diligent food stores management and processing of food waste using the solid waste equipment suite. Larger

decks have more room for error and could reduce RG volumes through improved segregation of actual RG from trash that only becomes RG through commingling, but it would be impossible to assign a cost to this based on the limited data currently available.

8. CONCLUSIONS AND RECOMMENDATIONS

The project objective was to develop a better understanding of shoreside and shipboard RG management processes—from origination as foreign food stores to disposal shoreside at a USDA-approved treatment facility—with the aim of creating standard operating procedures or best practices to ensure efficient RG compliance. Regulated garbage management is a unique issue involving many stakeholders and implementers, such as NAVFAC, NAVSUP, NAVSEA, the Fleet, and Ship's Force on vessels, and can cut across work centers. Additionally, RG management does not occur often and only at the end of a deployment when the attention of many Sailors is rapidly transitioning to going home, so it is not surprising that the execution of RG requirements and procedures does not always go smoothly. However, it is a regulation with which Navy homeports must comply and NSWCCD endeavored to include all stakeholders in each step of the project with the hopes of making lasting improvements to RG management.

The key takeaways from the RG management baseline study were the existence of RG management knowledge gaps (due primarily to a lack of widespread and timely guidance reaching the appropriate sailors) and a lack of standardized, readily available RG bags, some of which were due to sailors not receiving information in a timely manner. With feedback from the Fleet, shoreside RG management personnel, and USDA APHIS inspectors, a best practices document and training slides were developed to better communicate USDA APHIS RG requirements to Navy end-users. National stock numbers were also identified for two different sizes of clear, 3-mil thick bags for ease of procurement, and at the request of the fleet, a RG bag label was developed and assigned a national stock number.

Information dissemination was the harder aspect of influencing change to address. The best practices document and slides were provided to the Fleet for distribution to ships in pre-deployment training, and to the shoreside personnel at U.S. homeports for inclusion in LOGREQ responses to ships when requesting services for the first U.S. homeport visit. The shoreside personnel were already providing RG information to returning ships via LOGREQ responses, but the best practices document provides more background information, examples, and pictures. The best practices document and training slides were also made available on the USFF Afloat Compliance website. NAVFAC, NAVSUP, and NAVSEA documents that address RG and the AEPC course were reviewed and changes were recommended where needed. A RG management question was also submitted to COMPACFLT for inclusion in LOGCOP ERT.

The best practices implementation evaluation period was too short to gauge the impact of the best practices document and changes to the AEPC course and LOGCOP ERT had not gone into effect. However, there are signs that the best practices are reaching ships and being followed to a limited degree. More time will be required to determine if this project results in improved RG management. With the constant crew turnover and the fact that RG management is an infrequent exercise, it is clear that sailors will require as many reminders as possible of the RG management requirements. The AEPC course, LOGCOP ERT, and Supply Corps School course will help raise awareness of RG management. The NAVSUP FMT training would have been a good opportunity to educate Culinary Specialists on RG management requirements, but the NAVSUP FMS indicated that they would not include RG management in the training. However, NAVSUP FMS would ensure that the FMT trainers would be able to explain RG management requirements if requested by the Culinary Specialist. NSWCCD recommends that the Fleet request that FMT training include the basics of RG management.

9. REFERENCES

NAVSUP P-486, Food Service Management – General Messes, Revision 8, August 2016

OPNAV M-5090.1, Environmental Readiness Program Manual, 10 Jan 2014

Port Environmental Manual, Hampton Roads, April 2018

Port Environmental Manual, Joint Region Marianas, April 2018

Port Environmental Manual, Naval Base Guam, March 2015

Port Environmental Manual, Naval Station Mayport, April 2018

Port Environmental Manual, Naval Submarine Base Kings Bay, April 2018

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USDA APHIS Compliance Agreement, Commander, Navy Region Mid-Atlantic, February 2014

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USDA APHIS Compliance Agreement, NAVFAC Marianas, July 2014

USDA APHIS Compliance Agreement, Naval Submarine Base New London, March 2017

10. APPENDIX A – BEST PRACTICES DOCUMENT

USDA APHIS Regulated Garbage (Foreign Garbage) Best Practices for U.S. Navy Vessels

U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) regulated garbage (RG) regulations prevent the introduction of foreign plant pests/diseases and animal disease into American agriculture which could have serious consequences for our food supply, global trade, and our economy. RG regulations apply to all vessels arriving at a U.S. port (includes U.S. territories and possessions) if the vessel has been in any port outside of the continental United States (CONUS) (excluding Alaska (AK) and Canada), within the previous two years, or has been in any port in Hawaii or a U.S. territory/possession in the last year. U.S. territories/possessions include Puerto Rico, American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, U.S. Virgin Islands, Republic of the Marshall Islands, and Republic of Palau. Exception: The vessel has records documenting that RG requirements (including the 24-hour rule) were fulfilled at the first U.S. port under the cognizance of a U.S. Customs and Border Protection (CBP) or USDA APHIS inspector and, since fulfilling the RG requirements, the vessel has not been in a non-Canadian foreign port or moved to a CONUS/AK port from a Hawaii/U.S. territory/U.S. possession port or moved between Hawaii/U.S. territory/U.S. possession ports.

Regulated Garbage Definition for U.S. Navy Vessels:

All waste material and foreign food stores that are derived in whole or in part from fruits*, vegetables*, meats, or other plant or animal (including poultry) material, and other materials that have been associated (commingled) with any such material. Includes:

- food scraps
- table refuse
- galley refuse
- food wrappers or packaging materials (e.g., plastic, cardboard) from stores, galleys, mess areas, and berthing areas
- **plastic pucks (ships), plastic logs/slugs (submarines).**

Trash (waste that neither contains nor is visually contaminated with RG) is not regulated by USDA APHIS and is therefore unrestricted. Examples of RG and unrestricted trash include:

1. Waste that ***only*** contains empty soda cans ➔ Trash ➔ Unrestricted
2. Waste that ***only*** contains newspapers and magazines ➔ Trash ➔ Unrestricted
3. Waste that contains empty cardboard milk carton, sandwich, fruit, or plastic pucks ➔ **All of it is regulated garbage due to commingling** ➔ Restricted

* If transit is between the continental United States (CONUS)/Alaska/Canada and Hawaii/U.S. territories/possessions, or between Hawaii, U.S. territories, and U.S. possessions, only fresh fruits and vegetable (FF&V) and associated RG must be disposed of per USDA APHIS regulations; meat and other animal materials are exempt.

ANY VESSEL THAT TRIGGERS THE USDA APHIS RG REQUIREMENTS BY VISITING PORTS OUTSIDE OF CONUS/ALASKA/CANADA WITHIN THE PREVIOUS TWO YEARS OR PORTS IN HAWAII/U.S. TERRITORIES/U.S. POSSESSIONS WITHIN THE LAST YEAR, WILL HAVE RG FOR OFFLOAD UPON RETURN TO THE FIRST U.S. PORT AND GENERATE/OFFLOAD RG THROUGH THE 24-HOUR RULE (SEE BELOW FOR DEFINITION), EVEN IF THE VESSEL ONLY RECEIVED U.S. FOOD STORES WHILE DEPLOYED. THIS MITIGATES THE RISK POSED BY UNDOCUMENTED (E.G., PERSONAL) PURCHASES OF FOREIGN FOODS.

24-Hour Rule (per NAVSUP Publication 486)

If there are no FF&V or foreign stores aboard the vessel, and all RG has been offloaded, all galley/scullery garbage produced during the first 24 hours in-port will be handled and disposed of as RG. After the first 24 hours, food service garbage produced onboard is not regulated (unrestricted trash) and no further action is required.

Example Applications of USDA APHIS RG Regulations for U.S. Navy Vessels

1. Vessel returns from Japan and stops in Hawaii for 5 days, then heads to San Diego:
    a. RG process in Hawaii – all foreign plant/animal food stores and regulated garbage
    b. RG process in San Diego – only FF&V and regulated garbage.
2. Vessel returns from foreign port and stops in Guam for 5 days, then heads to Hawaii:
    a. RG process in Guam – all foreign plant/animal food stores and regulated garbage
    b. RG process in Hawaii – only FF&V and regulated garbage
3. Vessel returns from foreign port and stops in first U.S. port for less than 24 hours, then heads to Norfolk:
    a. RG process in first U.S. port – all foreign plant/animal food stores and regulated garbage
    b. RG process in Norfolk? Yes. 24-hour rule was not completed in first U.S. port and must be performed in Norfolk.

    Avoid unnecessary costs of repeating RG process at consecutive CONUS port visits by ensuring ship schedule allows completion of RG process at the first CONUS port.

Regulated Garbage Management/Offload Best Practices

1. Prior to U.S. port arrival:
    a. Vessel orders a sufficient number of clear, 3-mil (0.003-inch) thick plastic bags (below), zip ties or duct tape, and RG bag labels (see step 1e):
        i. 60 gal, 36" x 60", NSN 8105-01-399-4814 (2-box minimum MILSTRIP/GSA order)
        ii. 30 gal, 30" x 30", NSN 8105-00-070-9496
    b. Vessel orders a sufficient number of shoreside RG containers prior to U.S. arrival. Consider:
        i. Size and weight restrictions of RG containers available at the particular port (e.g., a container of only plastic pucks could exceed the weight limit)
        ii. Volumes of RG coming from the food service **and** other sources (plastic pucks, other wastes that have been commingled with RG, and **U.S. Marine spaces**).
    c. After pulper(s) and plastic waste processor(s) have been shut down at the end of deployment, keep trash (see definition above) separate from RG and clearly-labeled as "NOT Regulated Garbage" or "Unrestricted Trash".
    d. Send All Hands message (template at end of this document).
    e. All RG must be put in clear plastic bags that are at least 3-mil thick and intact/leak-proof. Bags must be securely closed (e.g., twisted shut and taped, zip-tied) and labeled as "Regulated Garbage" using the materials below.
        i. Zip ties, NSN 5975-01-034-5871 or similar
        ii. Duct tape, NSN 5640-00-103-2254 or similar

iii. RG bag label, NSN 7690-01-676-7481, or clearly labeled using permanent marker or similar

2. Upon arrival at first U.S. port, at the direction of the CBP inspector, or person designated by CBP, vessel offloads all properly-bagged RG into the shoreside RG container.
   a. **DO:**
      i. Contain RG in leak-proof, 3-mil thick plastic bags.
      ii. Place RG only in the shoreside RG container
      iii. Keep RG container doors closed except when placing RG into the container.
      iv. Report any RG spill to the proper organization. Refer to the Port Environmental Manual (PEM).
   b. **DON'T:**
      i. Don't place any loose waste or open/leaky bags in the RG container. The RG hauler can refuse to pick up the container until all RG has been properly bagged and RG container is cleaned **(REQUIRES DUMPSTER DIVING)**.
      ii. Don't place non-RG (e.g., industrial waste, used/excess hazardous material) into the RG container.
      iii. Don't place RG bags on the ground next to, or on top of, the RG container.
      iv. Don't overfill RG container. Container doors should be able to completely close.

Non-compliant: Bag is not 3-mil, not securely closed.

Compliant: All RG is in 3-mil bags and securely closed.

Non-compliant: RG container is open, some contents not in 3-mil bag.

Compliant: RG container is closed.

3. Perform the 24-hour rule (per NAVSUP Publication 486):
   a. **NOTE: Vessels cannot hold all waste for 24 hours after arrival and then discharge all as trash (unrestricted/domestic).**
   b. **NOTE: If the first U.S. port visit is less than 24 hours, the vessel must fulfill the 24-hour rule at the next U.S. port (requires shoreside RG container(s) at the second U.S. port).**
4. Subsequent visits to ports outside of CONUS, Alaska, and Canada will trigger RG requirements again.

Waste Management Recommendations:

1. Consume all foreign source stores and/or dispose of foreign stores and food wastes according to Naval Ships' Technical Manual Chapter 593.
2. Keep materials (e.g., paper, cardboard, non-food plastic waste) that are not associated with RG items separate and clearly label the stowage container(s)/bags as non-RG.
3. On larger decks, post a watch at the RG and trash collection point(s) aboard ship to ensure items are correctly bagged/labeled by the waste generator, and kept separate.
4. Ensure that other detachments aboard (e.g., U.S. Marines, Navy SEALs) understand and comply with RG requirements.
5. The vessel may want to post a watch on the shoreside RG container(s) to prevent others from putting inappropriate waste in the RG container.

Regulated (Foreign) Garbage Ship All Hands Template

PLEASE READ ENTIRE EMAIL AS IT WILL SAVE YOU FROM RE-SORTING TRASH
We must follow USDA requirements when disposing of all food and food-related wastes that contain fruits, vegetables, meat, or poultry, and other materials that have been associated with them (e.g., food wrappers/packaging, cardboard, PLASTIC PUCKS). This waste is Regulated Garbage (RG) (also referred to as Foreign Garbage) and must be disposed of as follows:
--Bagged in clear, 3-mil (0.003-inch) thick plastic bags.
--Bags not to exceed 35 pounds each.
--Bags must be intact (if ripped, place in another 3-mil thick bag) and secured with duct tape or zip ties.
--Identified as RG using "Regulated Garbage" labels or permanent marker.
--Only placed into the shoreside container labeled as RG.

RG containers found holding loose or improperly-bagged RG or non-RG (industrial waste, used/excess hazardous material/containers) will require dumpster diving to bring the RG container into compliance.

If RG is found in a regular (unrestricted/domestic) trash container, the entire container contents must be handled as RG, properly bagged, and put into an RG container.

After all RG has been offloaded, the ship will operate under the 24-hour rule in which all garbage generated by the galley(s)/scullery(s) for the next 24 hours is managed as RG. After 24 hours, the ship will return to standard domestic trash procedures.

Non-RG (soda cans, water bottles, paper, etc. that have not been in contact with RG) must be disposed of as follows:
--Placed in any type of bag EXCEPT the clear, 3-mil thick bags used for RG.
--Clearly-labeled as non-RG.
--Offloaded to the regular (unrestricted/domestic) trash container.

HAZMAT or containers that had HAZMAT in them will remain onboard and offload coordinated through Supply.

11. APPENDIX B – BEST PRACTICES TRAINING SLIDES

USDA APHIS Regulated Garbage (Foreign Garbage) Management Requirements

Updated October 2019

Regulated (Foreign) Garbage

What is Regulated Garbage (RG)?

- All waste material and foreign food stores that are derived in whole, or in part, from fruits*, vegetables*, meats, or other plant or animal (including poultry) material, and **other materials that have been associated (commingled) with any such material (e.g., plastic pucks, submarine plastic slugs, packaging materials, tri-wall boxes used to store RG prior to port arrival)** generated by Navy vessels returning from deployments outside of the continental United States (CONUS) (excluding Alaska (AK) and Canada).

Who do the USDA APHIS** RG Regulations Apply to?

- All Navy vessels arriving at a U.S. port (includes U.S. territories/possessions) if the vessel has been to any port outside of the CONUS (excluding Alaska and Canada) within the previous two years, or has been in any port in Hawaii or any U.S. territory/possession in the last year.
  - U.S. territories/possessions include Puerto Rico, American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, U.S. Virgin Islands, Republic of the Marshall Islands, and Republic of Palau.
  - Exception: The vessel has records documenting the RG requirements (including the 24-hour rule) were fulfilled at the first U.S. port under the cognizance of a U.S. Customs and Border Protection (CBP) or USDA inspector and, since fulfilling the RG requirements, the vessel has not been in a non-Canadian foreign port or moved to a CONUS/AK port from a Hawaii/U.S. territory/U.S. possession port or moved between Hawaii/U.S. territory/U.S. possession ports.

Why is Compliance with USDA APHIS RG Regulations Important to the Navy?

- Introduction of foreign plant pests/diseases or animal disease into American agriculture could have serious consequences for our food supply, global trade, and our economy.

* If transit is between CONUS/Alaska/Canada and Hawaii/U.S. territories/possessions, or between Hawaii, U.S. territories, and U.S. possessions, only fresh fruits and vegetables (FF&V) and regulated garbage must be disposed of per USDA APHIS regulations; meat and other animal materials are exempt.

** U.S. Department of Agriculture, Animal and Plant Health Inspection Service

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Regulated Garbage Management Requirements

- All RG must be placed in clear, 3-mil (0.003-inch) thick plastic bags that are intact, securely closed (twisted shut and taped or zip-tied), and labeled as "Regulated Garbage" using the materials below:
  - Clear, 3-mil thick bag
    - 60 gal, 36" x 60", NSN 8105-01-399-4814 (2-box minimum MILSTRIP/GSA order)
    - 30 gal, 30" x 30", NSN 8105-00-070-9496
  - Zip ties – NSN 5975-01-034-5871 or similar
  - Duct tape – NSN 5640-00-103-2254 or similar
  - RG bag label – NSN 7690-01-676-7481, or clearly labeled using permanent marker or similar
- Vessel orders shoreside RG containers via logistics requisition (LOGREQ) prior to port arrival.
- Vessel offloads properly-bagged RG into the shoreside RG container upon arrival
  - Only RG can go into the RG container
  - Everything in the RG container must be bagged properly.
  - RG container must be kept closed at all times.
- **24-Hour Rule:** After vessel has been cleared of all foreign food stores and RG, all garbage generated by the galley(s)/scullery(s) for the next 24 hours is handled and disposed of as RG. After 24 hours, the RG regulations no longer apply.
  - Note: If the first U.S. port visit is less than 24 hours, the vessel must fulfill the 24-hour rule at the next U.S. port which will require ordering another RG container.
- Regulated garbage must be removed from the installation within 72 hours.

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Example Applications of USDA APHIS Regulations

- Vessel returns from Japan and stops in Hawaii for 5 days, then heads to San Diego
  - RG process in Hawaii – all foreign plant/animal food stores and regulated garbage
  - RG process in San Diego – only FF&V and regulated garbage
- Vessel returns from foreign port and stops in Guam for 5 days, then heads to Hawaii
  - RG process in Guam – all foreign plant/animal food stores and regulated garbage
  - RG process in Hawaii – only FF&V and regulated garbage
- Vessel returns from foreign port and stops in first U.S. port for **less than 24 hours**, then heads to Norfolk
  - RG process in first U.S. port – all foreign plant/animal food stores and regulated garbage
  - RG process in Norfolk? Yes. 24-hour rule was not completed in the first U.S. port and must be performed in Norfolk.

  Avoid unnecessary costs of repeating RG processes at consecutive CONUS port visits by ensuring ship schedule allows completion of RG process at the first CONUS port.

ANY VESSEL THAT TRIGGERS THE USDA APHIS RG REQUIREMENTS BY VISITING PORTS OUTSIDE OF CONUS/ALASKA/CANADA WITHIN THE PREVIOUS TWO YEARS OR PORTS IN HAWAII/U.S. TERRITORIES/U.S. POSSESSIONS WITHIN THE LAST YEAR, WILL HAVE RG FOR OFFLOAD UPON RETURN TO THE FIRST U.S. PORT AND GENERATE/OFFLOAD RG THROUGH THE 24-HOUR RULE, EVEN IF THE VESSEL ONLY RECEIVED U.S. FOOD STORES WHILE DEPLOYED. THIS MITIGATES THE RISK POSED BY UNDOCUMENTED (E.G., PERSONAL) PURCHASES OF FOREIGN FOODS.

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Regulated Garbage Do's

DO:

- Pre-order sufficient number of clear, 3-mil thick plastic bags; tape/zip ties; and bag labels.
- Minimize RG volume by processing food and wastes using Solid Waste Equipment suite in accordance with Naval Ships' Technical Manual Chapter 593.
- **Include RG generated by the mess, trash room, berthing, and other detachments (e.g., U.S. Marines) when estimating number of RG containers to order. Consider shoreside RG container dimensions (vary by homeport) and weight limits in estimate.**
- Send All Hands message prior to port arrival describing RG requirements and crew actions to minimize RG volume (template in RG Best Practices document).
- Segregate and clearly label RG and non-RG (non-RG can be disposed following standard trash procedures).
- Put all RG in intact, clear, 3-mil thick bags that are securely closed using tape or zip ties and labeled using RG labels.
- Offload properly-bagged RG (and only RG) into the RG container.
- Keep RG container doors closed except when placing RG into the container.
- Post a watch on RG container to prevent others from putting inappropriate waste in the RG container.
- Report any RG spill to the point of contact (POC) identified in the Port Environmental Manual (PEM).

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Regulated Garbage Don'ts

DON'T:

- Don't hold all waste for 24 hours after arrival and then dispose of RG as non-RG.
- Don't place any loose waste or open/leaky bags in the shoreside RG container. RG disposal contractor can refuse the container if contents are non-compliant so sailors will have to dumpster dive and bag RG properly to bring the container in compliance. Contact RG POC identified in the PEM.
- Don't place RG bags on the ground next to or on top of the shoreside RG container.
- Don't place RG bags in a regular/domestic trash container. All container contents will become RG through commingling and will have to be bagged and put in a shoreside RG container. Contact RG POC identified in the PEM.
- Don't overfill shoreside RG container. Container doors should be able to completely close.

Non-compliant: Bag is not 3-mil and not securely closed.

Compliant: All RG is in 3-mil bags and securely closed.

Non-compliant: RG container is open and holds unbagged RG.

Compliant: RG container is closed.

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