U.S. Public Health Service

Centers for Disease Control and Prevention

National Center for Environmental Health

Vessel Sanitation Program

Operations Manual

2000

CENTERS FOR DISEASE CONTROL AND PREVENTION

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and Prevention

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Forward

The Centers for Disease Control and Prevention (CDC) established the Vessel Sanitation Program (VSP) in the 1970's as a cooperative activity with the cruise ship industry. The program assists the cruise ship industry in fulfilling its responsibility for developing and implementing comprehensive sanitation programs in order to minimize the risk of gastrointestinal diseases. Every vessel that has a foreign itinerary and carries 13 or more passengers is subject to twice-yearly inspections and, when necessary, reinspection.

The VSP operated continuously at all major U.S. ports from the early 1970's through 1986, when CDC terminated portions of the program. Industry and public pressures resulted in Congress directing CDC through specific language included in CDC appropriations to resume the VSP. The National Center for Environmental Health (NCEH) at CDC became responsible for the VSP in 1986.

The NCEH held a series of public meetings to determine the needs and desires of the public and cruise ship industry and on March 1, 1987, a restructured program began. In 1988, the program was further modified by introducing user fees to reimburse the U.S. government for costs. A fee based on the vessel's size is charged for inspections and reinspections. A *VSP Operations Manual* based on the FDA 1976 model code for food service and the World Health Organization's *Guide to Ship Sanitation* was published in 1989 to assist the cruise ship industry in educating shipboard personnel.

In 1998, it became apparent that is was time to update the 1989 version of the *VSP Operations Manual*. Changes in the FDA *Food Code*, new science on food safety and protection, and newer technology in the cruise ship industry contributed to the need for a revised Operations Manual. During the past 2 years, the VSP solicited comments from and conducted public meetings with representatives of the cruise industry, general public, FDA and international public health community to ensure that the new manual would appropriately address current public health issues related to cruise ship sanitation.

This document is a result of the cooperative effort of many individuals from both government and private industry, and the public. We would like to thank all those who submitted comments and participated throughout this lengthy process. I must also acknowledge the tremendous commitment of time taken by the VSP staff in drafting this manual. In particular, I must recognize Captain Charles Otto as editor and Captain Daniel Harper as the Senior Environmental Health Officer for the VSP. Both were instrumental in the decision to revise the 1989 document, and in overseeing the process from start to finish.

Although the previous *VSP Operations Manual* was in use for over 10 years, we know that technology and food science will continue to change and evolve. We will continue to review these changes in a public process in an effort to keep the Manual current.

The *VSP Operations Manual - 2000* continues the 25 year tradition of government and industry working together to achieve a successful and cooperative Vessel Sanitation Program that benefits millions of travelers each year.

Dave Forney, Chief
Vessel Sanitation Program

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INFORMATION TO ASSIST THE USER ON MANUAL FORMAT

organization	The *Vessel Sanitation Program Operations Manual* is divided into chapters and then sections that focus on each operational area important to safeguarding public health aboard vessels.
keywords	Each of the guidelines is formated with a keyword or phrase on the left side of the page to assist the user in quickly locating a specific section.
section number	The international numbering system is used to organize the guidelines in this document.
description	The public health compliance recommendation is provided in this statement.
italics	Portions of some sections of these guidelines are written in *italics.* These provisions are not requirements, but are provided to convey relevant information about specific exceptions and alternative means for compliance.
inspection report number	The individual inspection report item number that will be found in violation if this recommendation is not followed is shown to the right of the description.
criticals	Critical compliance items are designated in these guidelines with a **C** to the right of the inspection report number which is also highlighted in red along with the section number.
noncritical items	Noncritical compliance items are the other items in this manual.

1.0 Introduction

1.1 Introduction and Background
1.2 Activities
1.3 Operations Manual

1.1 Introduction and Background

1.1.1 Cooperative Activity

history 1.1.1.1 The Centers for Disease Control and Prevention (CDC) established the Vessel Sanitation Program (VSP) in 1975, as a cooperative activity with the cruise ship industry. This program assists the cruise ship industry in fulfilling its responsibility for developing and implementing comprehensive performance-based systems to protect the health of the traveling public.

cooperation 1.1.1.2 The program fosters cooperation between the cruise ship industry and government to define and reduce health risks associated with vessels and to ensure a healthful and clean environment for vessels' passengers and crew. The industry's aggressive and ongoing efforts to achieve and maintain high standards of food safety and environmental sanitation are critical to the success of protecting public health.

1.2 Activities

1.2.1 Prevention

inspections 1.2.1.1 The VSP conducts a comprehensive food safety and environmental sanitation inspection on vessels that have a foreign itinerary, call on a U.S. port, and carry 13 or more passengers.

surveillance 1.2.1.2 The program conducts ongoing surveillance of gastrointestinal illness and coordinates / conducts outbreak investigations on vessels.

1.2.2 Information

training 1.2.2.1 The VSP provides food safety and environmental sanitation training seminars for vessel and shore operations management personnel.

plan review 1.2.2.2 The program provides consultative services for reviewing plans for renovations and new construction.

construction inspections 1.2.2.3 The program conducts construction inspections at the shipyards and when the vessel makes its initial call at a U.S. port.

information 1.2.2.4 The program disseminates information to the public.

1.3 Operations Manual

1.3.1 Revisions

manual 1.3.1.1 The Operations Manual for the VSP has been modified as a result of emerging public health issues, industry recommendations, introduction of new technologies within the industry, new guidance from sources used in the previous edition, and CDC's experience.

program guidance 1.3.1.2 The program operations and inspections are based on this manual.

periodic review 1.3.1.3 The Operations Manual will be reviewed annually in the public meeting with written submissions for revision based on emerging public health issues and new technologies that may better address the public health issues on vessels.

2.0 Authority

2.1 Public Health Service Act

2.1 Public Health Service Act

2.1.1 Communicable Disease Prevention

communi-cable disease prevention

2.1.1.1 Although cooperation by vessels with the VSP is voluntary, the Public Health Service (PHS) is authorized by the Public Health Service Act (42 U.S.C. Section 264. Quarantine and Inspection - Regulations to control communicable diseases) to take measures necessary to prevent the introduction, transmission, or spread of communicable diseases into the United States from a foreign country.

regulation promulgation

2.1.1.2 In addition, the Public Health Service Act (42 U.S.C. Section 269. Quarantine and Inspection - Bills of health.) authorizes the promulgation of regulations applicable to vessels for preventing the introduction into the United States of "any communicable disease by securing the best sanitary condition of such vessels, their cargoes, passengers, and crews."

inspections

2.1.1.3 Regulations promulgated to carry out these duties authorize the PHS to conduct sanitary inspections on carriers traveling to a U.S. port from a foreign area (42 CFR Section 71.41. General Provisions. Foreign Quarantine - Requirements Upon Arrival at U.S. Ports: Sanitary Inspection). This purpose of the inspection is to determine the existence of vermin, contaminated food or water, or other insanitary conditions that may contribute to the introduction, spread, or transmission of communicable disease.

3.0 Definitions

3.1 Scope
3.2 Definitions

3.1 Scope

3.1.1 Definitions provided in the Operations Manual are provided to clarify terminology commonly used in public health.

3.1.2 The terms defined are shown in relation to Operations Manual chapters where they are used, but they may also pertain to other chapters in this manual.

3.2 Definitions

Authority

"USPHS or PHS" means the U.S. Public Health Service.

Potable Water

"Air-break" means a piping arrangement in which a drain from a fixture, appliance, or device discharges indirectly into another fixture, receptacle, or interceptor at a point below the flood-level rim.

"Air-gap" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood-level rim of the receptacle or receiving fixture. The air gap must be at least twice the diameter of the supply pipe or faucet or at least 3 cm (1 inch), whichever is greater.

"Atmospheric vacuum breaker" means an approved backflow prevention device that is necessary on a potable water outlet designed for an attachment that does not have a shutoff downstream from the attachment to preclude the possibility of backflow.

"Backflow" means the flow of water or other liquids,

mixtures, or substance into the distribution pipes of a potable supply of water from any source or sources other than the source of potable water supply. Back-siphonage is one form of backflow.

"Backflow, check, or non-return valve" means a mechanical device installed in a waste line to prevent the reversal of flow under conditions of back pressure. In the check valve type, the flap should swing into a recess when the line is flowing full, to preclude obstructing the flow.

"Backflow preventer" means an approved backflow-prevention device that is necessary on a potable water outlet.

"Back-siphonage" means the flowing back of used, contaminated, or polluted water from a plumbing fixture or vessel or other source into a water supply pipe as a result of negative pressure in the pipe.

"Black water" means wastewater from water closets (toilets).

"Cross-connection" means any physical connection between two otherwise separate piping systems that allows a flow from one system to the other.

"Gray water" means all domestic wastewater including water from showers, sinks, laundry, and equipment drains, but not wastewater from toilets.

"Halogen" means the group of elements including fluorine, chlorine, bromine, and iodine used for the disinfection of water.

"Harbor area" means that portion of a harbor set aside for vessel anchorage or for ports including wharves, piers, quays, and service areas, the boundaries are the high-water shore line, and others as determined by legal definition, citation of coordinates, or other means.

"Hose connection vacuum breaker" means an approved backflow preventer that attaches directly to a hose bib, has a single check with an atmospheric vent and is not designed for continuous pressure applications.

"mg/L" means milligrams per liter, which is the metric equivalent of parts per million (ppm).

"Non-potable fresh water (Technical water)" means

fresh water intended for laundry use or for washing decks in areas other than the vessel's hospital or food service and food storage areas.

"Pollution" means the presence in water of any foreign substance (organic, inorganic, radiologic, or biologic) that tends to degrade water quality to create a health hazard.

"Potable water" means fresh water intended for drinking, washing, bathing, or showering; for use in the vessel's hospital; for handling, preparing, or cooking food; and for cleaning food storage and preparation areas, utensils, and equipment.

"Potable water tanks" means all tanks into which potable water is bunkered or produced for distribution and from which it is used as potable water.

"Reduced pressure backflow preventer" means an approved backflow device used in high hazard situations that has two independent check valves with an intermediate vacuum breaker and relief valve.

"Sewage" means any liquid waste containing animal or vegetable matter in suspension or solution, including liquids containing chemicals in solution.

"Specialty backflow preventer" means an approved backflow device used in low hazard situations that has two independent check valves with an intermediate vacuum breaker and relief valve.

Food Safety

Additive.
(a) **"Food additive"** has the meaning stated in the Federal Food, Drug, and Cosmetic Act, §201(s) and 21 CFR 170.

(b) **"Color additive"** has the meaning stated in the Federal Food, Drug, and Cosmetic Act, §201(t) and 21 CFR 70.

"Adulterated" has the meaning stated in the Federal Food, Drug, and Cosmetic Act, §402.

"Approved" means acceptable to the VSP based on a determination of conformity with principles, practices, and generally recognized standards that protect public health

such as ANSI/NSF standards, ASSE standards, federal regulations or equivalent international standards and regulations.

"a_w" means water activity which measures the free moisture in a food. It is the quotient of the water vapor pressure of the substance divided by the vapor pressure of pure water at the same temperature.

"Beverage" means a liquid for drinking, including water.

"Bottled drinking water" means water that is sealed in bottles, packages, or other containers and offered for sale and that is safe for human consumption, including bottled mineral water.

"Certification number" means a unique combination of letters and numbers assigned by a shellfish-control authority to a molluscan shellfish dealer according to the provisions of the National Shellfish Sanitation Program.

"CIP" means cleaned in place by circulating or flowing mechanically through a piping system of a detergent solution, water rinse, and sanitizing solution onto or over equipment surfaces that require cleaning, such as the method used, in part, to clean and sanitize a frozen dessert machine.

"CIP" *does not include the cleaning of* EQUIPMENT *such as band saws, slicers, or mixers that are subjected to in-place manual cleaning without the use of a CIP system.*

"CFR" means Code of Federal Regulations. Citations in this Code to the CFR refer sequentially to the Title, Part, and Section numbers, such as 21 CFR 178.1010 refers to Title 21, Part 178, Section 1010.

"Code of Federal Regulations" means the compilation of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government which:

(a) Is published annually by the U.S. Government Printing Office; and

(b) Contains FDA rules in 21 CFR, USDA rules in 7 CFR and 9 CFR, EPA rules in 40 CFR, and Wildlife and Fisheries rules in 50 CFR.

"Comminuted" means reduced in size by methods including chopping, flaking, grinding, or mincing.

"Comminuted" includes fish or meat products that are reduced in size and restructured or reformulated such as gefilte fish, gyros, ground beef, and sausage; and a mixture of 2 or more types of meat that have been reduced in size and combined, such as sausages made from 2 or more meats.

"Confirmed disease outbreak" means a foodborne or waterborne disease outbreak in which laboratory analysis of appropriate specimens identifies a causative agent and epidemiologic analysis implicates the food or water as the source of the illness.

"Consumer" means a person who is a member of the public, takes possession of food, is not functioning in the capacity of an operator of a food establishment or food processing plant, and does not offer the food for resale.

"Corrosion-resistant material" means a material that maintains acceptable surface cleanability characteristics under prolonged influence of the food to be contacted, the normal use of cleaning compounds and sanitizing solutions, and other conditions of the environment where the material is used.

"Critical-control point" means a point or procedure in a specific food system where loss of control may result in an unacceptable health risk.

"Critical limit" means the maximum or minimum value at a critical-control point to which a physical, biologic, or chemical parameter must be controlled to minimize the occurrence of risk from an identified food safety hazard.

"Drinking water" means water that meets 40 CFR 141 National Primary Drinking Water Regulations.

"Drinking water" is traditionally known as "potable water."

"Drinking water" includes the term "water" except where the term used connotes that the water is not potable, such as "boiler water," "mop water," "rainwater," "wastewater," and "nondrinking" water.

"Dry-storage area" means a room or area designated for

the storage of packaged or containerized bulk food that is not potentially hazardous and dry goods such as single-service items.

"Easily cleanable" means a characteristic of a surface that:

(a) Allows effective removal of soil by normal cleaning methods;

(b) Is dependent on the material, design, construction, and installation of the surface; and

(c) Varies with the likelihood of the surface's role in introducing pathogenic or toxigenic agents or other contaminants into food based on the surface's approved placement, purpose, and use.

"Easily cleanable" includes a tiered application of the criteria that qualify the surface as easily cleanable as specified under Subparagraph (a) of this definition to different situations in which varying degrees of cleanability are required such as:

(a) The appropriateness of stainless steel for a food preparation surface, compared with the lack of need for stainless steel to be used for floors or for tables used for consumer dining; or

(b) The need for a different degree of cleanability for a utilitarian attachment or accessory in the kitchen, compared with a decorative attachment or accessory in the consumer dining area.

"Easily movable" means:

(a) Portable; mounted on casters, gliders, or rollers; or provided with a mechanical means to safely tilt a unit of equipment for cleaning; and

(b) Having no utility connection, a utility connection that disconnects quickly, or a flexible utility connection line of sufficient length to allow the equipment to be moved for cleaning of the equipment and adjacent area.

"EPA" means the U.S. Environmental Protection Agency.

"Equipment" means an article used in the operation of a

food establishment, such as a freezer, grinder, hood, ice maker, meat block, mixer, oven, reach-in refrigerator, scale, sink, slicer, stove, table, temperature measuring device for ambient air, vending machine, or warewashing machine.

"Equipment" *does not include items used for handling or storing large quantities of packaged foods that are received from a supplier in a cased or overwrapped lot, such as hand trucks, forklifts, dollies, pallets, racks, and skids.*

"Fish" means fresh or saltwater finfish, crustaceans, and other forms of aquatic life (including alligator, frog, aquatic turtle, jellyfish, sea cucumber, and sea urchin and the roe of such animals) other than birds or mammals, and all mollusks, if such animal life is intended for human consumption.

"Fish" includes an edible human food product derived in whole or in part from fish, including fish that have been processed in any manner.

"Food" means a raw, cooked, or processed edible substance, ice, beverage, or ingredient used or intended for use or for sale in whole or in part for human consumption, or chewing gum.

"Foodborne disease outbreak" means an incident in which:

(a) 2 or more nonrelated persons experience a similar illness after ingesting a common food; and

(b) Epidemiologic analysis implicates the food as the source of the illness.

"Foodborne disease outbreak" also includes a single case of illness such as 1 person ill from botulism or chemical poisoning.

"Food-contact surface" means:

(a) A surface of equipment or a utensil with which food normally comes into contact; or

(b) A surface of equipment or a utensil from which food may drain, drip, or splash into a food, or onto a surface

normally in contact with food.

"Food employee" means a person working with unpackaged food, food equipment or utensils, or food-contact surfaces.

"Food-processing plant" means a commercial operation that manufactures, packages, labels, or stores food for human consumption and does not provide food directly to a consumer.

"Game animal" means an animal, the products of which are food, that is not classified as cattle, sheep, swine, goat, horse, mule, or other equine in 9 CFR Subchapter A - Mandatory Meat Inspection, Part 301, as Poultry in 9 CFR Subchapter C - Mandatory Poultry Products Inspection, Part 381, or as fish as defined under Subparagraph 1-201.10(B)(25).

"Game animal" includes mammals such as reindeer, elk, deer, antelope, water buffalo, bison, rabbit, squirrel, opossum, raccoon, nutria, or muskrat, and nonaquatic reptiles such as land snakes.

"Game animal" does not include ratites such as ostrich, emu, and rhea.

"Grade A standards" means the requirements of the PHS/FDA "Grade A Pasteurized Milk Ordinance" and "Grade A Condensed and Dry Milk Ordinance" with which certain fluid and dry milk and milk products comply.

"General-use pesticide" means a pesticide that is not classified by EPA for restricted use as specified in 40 CFR 152.175.

"HACCP plan" means a written document that delineates the formal procedures for following the Hazard Analysis Critical Control Point principles developed by The National Advisory Committee on Microbiological Criteria for Foods.

"Hazard" means a biologic, chemical, or physical property that may cause an unacceptable consumer health risk.

"Hermetically sealed container" means a container that is designed and intended to be secure against the entry of microorganisms and, in the case of low-acid canned foods, to maintain the commercial sterility of its contents after processing.

"Imminent health hazard" means a significant threat or danger to health that is considered to exist when evidence is sufficient to show that a product, practice, circumstance, or event creates a situation that requires immediate correction or cessation of operation to prevent injury based on the number of potential injuries, and the nature, severity, and duration of the anticipated injury.

"Injected" means manipulating a meat so that infectious or toxigenic microoganisms may be introduced from its surface to its interior through tenderizing with deep penetration or injecting the meat such as with juices which may be referred to as "injecting," "pinning," or "stitch pumping."

"Kitchenware" means food preparation and storage utensils.

"Law" means applicable local, state, federal, or other equivalent international statutes, regulations, and ordinances.

"Linens" means fabric items such as cloth hampers, cloth napkins, table cloths, wiping cloths, and work garments including cloth gloves.

"Meat" means the flesh of animals used as food including the dressed flesh of cattle, swine, sheep, or goats and other edible animals, *except fish, poultry, and wild game animals.*

"Molluscan shellfish" means any edible species of fresh or frozen oysters, clams, mussels, and scallops or edible portions thereof, *except when the scallop product consists only of the shucked adductor muscle*.

"Packaged" means bottled, canned, cartoned, securely bagged, or securely wrapped, whether packaged in a food establishment or a food-processing plant.

***"Packaged"** does not include a wrapper, carry-out box, or other nondurable container used to containerize food to the facilitate food protection during service and receipt of the food by the consumer.*

"Person in charge" means the individual present on a vessel who is responsible for the food operation at the time of inspection such as the Food and Beverage Manager, Food Manager, or Chef.

"Personal-care items" means items or substances that may be poisonous, toxic, or a source of contamination and are used to maintain or enhance a person's health, hygiene, or appearance.

"Personal-care items" include items such as medicines; first aid supplies; and other items such as cosmetics, and toiletries such as toothpaste and mouthwash.

"pH" means the symbol for the negative logarithm of the hydrogen ion concentration, which is a measure of the degree of acidity or basicity of a solution.

Values between 0 and 7 indicate acidity and values between 7 and 14 indicate alkalinity. The value for pure distilled water is 7, which is considered neutral.

"Physical facilities" means the structure and interior surfaces of a vessel's food storage, preparation and service areas, including accessories such as soap and towel dispensers, and attachments, such as light fixtures and heating or air conditioning system vents.

"Plumbing fixture" means a receptacle or device that:

(a) Is permanently or temporarily connected to the water-distribution system of the vessel and demands a supply of water from the system; or

(b) Discharges used water, waste materials, or sewage directly or indirectly to the drainage system of the vessel.

"Plumbing system" means the water supply and distribution pipes; plumbing fixtures and traps; soil, waste, and vent pipes; sanitary sewer drains and vessel drains, including their respective connections, devices, and appurtenances within the vessel; and water-treating equipment.

"Poisonous or toxic materials" means substances that are not intended for ingestion and are included in 4 categories:

(a) Cleaners and sanitizers, which include cleaning and sanitizing agents and agents such as caustics, acids, drying agents, polishes, and other chemicals;

(b) Pesticides *except sanitizers*, which include substances

such as insecticides and rodenticides;

(c) Substances necessary for the operation and maintenance of the establishment such as nonfood-grade lubricants and personal care items that may be deleterious to health; and

(d) Substances that are not necessary for the operation and maintenance of the vessel and are on the vessel, such as petroleum products and paints.

"Potentially hazardous food" means a food that is natural or synthetic and that requires temperature control because it is in a form capable of supporting:

(a) The rapid and progressive growth of infectious or toxigenic microorganisms;

(b) The growth and toxin production of ***Clostridium botulinum***; or

(c) In raw shell eggs, the growth of ***Salmonella enteritidis***.

"Potentially hazardous food" includes an animal food (a food of animal origin) that is raw or heat-treated; a food of plant origin that is heat-treated or consists of raw seed sprouts; cut melons; and garlic and oil mixtures that are not acidified or otherwise modified at a food processing plant in a way that results in mixtures that do not support growth as specified under Subparagraph (a) of this definition.

"Potentially hazardous food" *does not include:*

(a) An air-cooled hard-boiled egg with shell intact;

(b) A food with an a_w *value of 0.85 or less;*

(c) A food with a pH level of 4.6 or below when measured at 24°C (7\5°F);

(d) A food in an unopened hermetically sealed container that is commercially processed to achieve and maintain commercial sterility under conditions of nonrefrigerated storage and distribution; and

(e) A food for which laboratory evidence demonstrates that the rapid and progressive growth of infectious or toxigenic microorganisms or the growth of ***S. enteritidis*** *in eggs or* ***C. botulinum*** *can not occur, such as a food that has an* a_w *and a pH above the levels specified under Subparagraphs (c)(ii) and (iii) of this definition and that may contain a preservative, other barrier to the growth of microorganisms, or a combination of barriers that inhibit the growth of microorganisms.*

(f) A food that may contain an infectious or toxigenic microorganism or chemical or physical contaminant at a level sufficient to cause illness, but that does not support the growth of microorganisms as specified under Subparagraph (a) of this definition.

"Poultry" means:

(a) Any domesticated bird such as chicken, turkey, duck, goose, or guinea, whether live or dead, as defined in 9 CFR 381 Poultry Products Inspection Regulations; and

(b) Any migratory waterfowl, game bird, or squab such as pheasant, partridge, quail, grouse, or guinea, whether live or dead, as defined in 9 CFR 362 Voluntary Poultry Inspection Program.

"Poultry" does not include ratite.

"Primal cut" means a basic major cut into which carcasses and sides of meat are separated, such as a beef round, pork loin, lamb flank, or veal breast.

"Ready-to-eat food" means food in a form that is edible without washing, cooking, or additional preparation by the food establishment or the consumer and that is reasonably expected to be consumed in that form.

"Ready-to-eat food" includes:

(a) Potentially hazardous food that is unpackaged and cooked to the temperature and time required for the specific food;

(b) Raw, washed, cut fruits and vegetables;

(c) Whole, raw fruits and vegetables that are presented for

consumption without the need for further washing, such as at a buffet; and

(d) Other food presented for consumption for which further washing or cooking is not required and from which rinds, peels, husks, or shells are removed.

"Refuse" means solid waste not carried by water through the sewage system.

"Regulatory authority" means the local, state, or federal or equivalent international enforcement body or authorized representative having jurisdiction over the food processing, transportation, warehousing, or other food establishment.

"Restricted-use pesticide" means a pesticide product that contains the active ingredients specified in 40 CFR 152.175 Pesticides classified for restricted use, and that is limited to use by or under the direct supervision of a certified applicator.

"Safe material" means:

(a) An article manufactured from or composed of materials that may not reasonably be expected to result, directly or indirectly, in their becoming a component or otherwise affecting the characteristics of any food;

(b) An additive that is used as specified in §409 or 706 of the Federal Food, Drug, and Cosmetic Act; or

(c) Other materials that are not additives and that are used in conformity with applicable regulations of the FDA.

"Sanitization" means the application of cumulative heat or chemicals on cleaned food-contact surfaces that, when evaluated for efficacy, is sufficient to yield a reduction of 5 logs, which is equal to a 99.999% reduction, of representative disease microorganisms of public health importance.

"Sealed" means free of cracks or other openings that allow the entry or passage of moisture.

"Sewage" means liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.

"Shellfish-control authority" means a state, federal, foreign, tribal, or other government entity legally responsible for administering a program that includes certification of molluscan shellfish harvesters and dealers for interstate commerce.

"Shellstock" means raw, in-shell molluscan shellfish.

"Shucked shellfish" means molluscan shellfish that have one or both shells removed.

"Single-service articles" means tableware, carry-out utensils, and other items such as bags, containers, placemats, stirrers, straws, toothpicks, and wrappers that are designed and constructed for one time, one person use.

"Single-use articles" means utensils and bulk food containers designed and constructed to be used once and discarded.

"Single-use articles" includes items such as wax paper, butcher paper, plastic wrap, formed aluminum food containers, jars, plastic tubs or buckets, bread wrappers, pickle barrels, ketchup bottles, and number 10 cans which do not meet the materials, durability, strength, and cleanability specifications.

"Slacking" means the process of moderating the temperature of a food such as allowing a food to gradually increase from a temperature of -23°C (-10°F) to -4°C (25°F) in preparation for deep-fat frying or to facilitate even heat penetration during the cooking of previously block-frozen food such as spinach.

"Smooth" means:

(a) A food-contact surface having a surface free of pits and inclusions with a cleanability equal to or exceeding that of (100 grit) number 3 stainless steel;

(b) A nonfood-contact surface of equipment having a surface equal to that of commercial grade hot-rolled steel free of visible scale; and

(c) A floor, wall, or ceiling having an even or level surface with no roughness or projections that render it difficult to clean.

"Table-mounted equipment" means equipment that is not portable and is designed to be mounted off the floor on a table, counter, or shelf.

"Tableware" means eating, drinking, and serving utensils for table use such as flatware including forks, knives, and spoons; hollowware including bowls, cups, serving dishes, and tumblers; and plates.

"Temperature measuring device or TMD" means a thermometer, thermocouple, thermistor, or other device that indicates the temperature of food, air, or water.

"USDA" means the U.S. Department of Agriculture.

"Utensil" means a food-contact implement or container used in the storage, preparation, transportation, dispensing, sale, or service of food, such as kitchenware or tableware that is multiuse, single-service, or single-use; gloves used in contact with food; food temperature measuring devices; and probe-type price or identification tags used in contact with food.

"Warewashing" means the cleaning and sanitizing of utensils and food-contact surfaces of equipment.

"Whole-muscle, intact beef" means whole muscle beef that is not injected, mechanically tenderized, reconstructed, or scored and marinated, from which beef steaks may be cut.

Integrated Pest Management

"Integrated Pest Management (IPM)" means a documented organized system of controlling pests through a combination of methods including inspection, baits, traps, effective sanitation and maintenance and judicious use of chemical compounds.

Child-Activity Centers

"Child-activity center" means facilities for child-related activities where children under 6-years old are placed to be cared for by vessel staff.

Administrative Guidelines

"Critical item" means a provision of these guidelines, that, if in noncompliance, is more likely than other deficiencies to contribute to food or water contamination, illness, or environmental health hazard.

"Critical item" is an item that is denoted in these guidelines with a "**C**" to the left of the section number which is also highlighted in red.

"Variance" means a written document issued by the Vessel Sanitation Program that authorizes a modification or waiver of one or more requirements of these guidelines if, in the opinion of the Vessel Sanitation Program, a health hazard or nuisance will not result from the modification or waiver.

4.0 Gastrointestinal Illness Surveillance

4.1 Data Collection
4.2 Notification

4.1 Data Collection

4.1.1 Reportable Cases

4.1.1.1 Definition

case definition 4.1.1.1.1 A reportable case of gastrointestinal illness shall be defined as: 02

(1) Diarrhea (three or more episodes of loose stools in a 24 hour period); or

(2) Vomiting and one additional symptom including one or more episodes of loose stools in a 24-hour period, or abdominal cramps, or headache, or muscle aches, or fever; and

(3) Reported to the master of the vessel, the medical staff, or other designated staff by a passenger or a crew member.

(4) Nausea, although a common symptom of gastrointestinal illness, is specifically excluded from this definition to avoid mis-classifying seasickness (nausea and vomiting) as gastroenteritis.

onset time 4.1.1.1.2 The reportable cases shall include those crew members with a symptom onset time of up to 3 days before boarding the vessel. 02

definition purpose 4.1.1.1.3 *These case definitions are to be used for identifying and classifying cases, both of which are done for reporting purposes. They should not be used as criteria for clinical intervention or public health action. For many conditions of public health importance, action to contain disease should be initiated as soon as a problem is identified; in many circumstances, appropriate public health action should be undertaken even though insufficient information is available to determine whether cases meet the case definition. Nausea, although a common symptom of*

gastrointestinal illness, is excluded to avoid classifying seasickness (nausea and vomiting) as a gastrointestinal illness.

foreign quarantine regulations 4.1.1.1.4 *Foreign quarantine regulations require death and certain illnesses of an arriving international passengers or crew members to be reported to the quarantine station having responsibility for the port of entry. More information can be obtained from: Centers for Disease Control and Prevention, National Center for Infectious Diseases, Division of Quarantine, 1600 Clifton Road, MS E-03, Atlanta, GA 30333 USA, telephone (404) 639-8100, fax (404) 639-2599.*

4.1.2 Records

4.1.2.1 Log

responsibility 4.1.2.1.1 A standardized gastrointestinal illness surveillance log for each cruise shall be maintained daily by the master of the vessel, the medical staff, or other designated staff. 02

cruise information 4.1.2.1.2 The gastrointestinal illness surveillance log shall list the name of the vessel, the cruise dates and the cruise number. 02

log contents 4.1.2.1.3 The log shall list: 02

(1) All reportable cases of gastrointestinal illness;

(2) All passengers and crew members who are dispensed antidiarrheal medication from the master of the vessel, the medical staff, or other designated staff.

log details 4.1.2.1.4 The gastrointestinal illness surveillance log entry for each passenger or crew member shall contain the following information: 02

(1) The first date of clinic visit or report to staff of illness;

(2) The person's name, age and gender;

(3) A designation as passenger or crew member;

(4) Crew member position or job on the vessel, if applicable;

(5) Cabin number;

(6) Meal seating information;

(7) Date and time of illness onset;

(8) Illness symptoms, including the presence of the following selected signs and symptoms: numbers of episodes each of diarrhea and vomiting per day, bloody stools, fever, recorded temperature;

(9) Notation on whether or not a stool specimen was requested and received;

(10) Use of antidiarrheal medication; and

(11) The presence of underlying medical conditions which may affect interpretation of acute gastrointestinal illness for example diabetic diarrhea, inflammatory bowel disease, gastrectomy or others.

medications sold or dispensed

4.1.2.1.5 A separate inventory of the daily total, by quantity and type, of antidiarrheal medications sold or dispensed to the passengers or crew members in all areas of the vessel shall be maintained alongside the gastrointestinal illness surveillance log. 02

4.1.2.2 Questionnaires

food / beverage questionnaire

4.1.2.2.1 Questionnaires detailing activities and meal locations for the 72 hours before illness onset shall be distributed to all passengers and crew members who are gastrointestinal illness cases. The self-administered questionnaires shall contain all of the data elements that appear in the questionnaire found in Annex 13.2. The completed questionnaires shall be maintained alongside the gastrointestinal illness surveillance log. 02

4.1.2.3 Retention

retention

4.1.2.3.1 The medical log, gastrointestinal illness log, the daily inventory of antidiarrheal medication sales, and the 72 hour self-administered questionnaires shall be maintained on the vessel for 12 months. 02

review 4.1.2.3.2 The gastrointestinal illness surveillance log, the daily inventory of antidiarrheal medication sales, and the 72 hour self-administered questionnaires shall be available for review by the VSP during inspections and outbreak investigations. These materials shall be transmitted by facsimile to the VSP for review in outbreak investigations, as requested. 02

4.1.2.4 Confidentiality

privacy 4.1.2.4.1 All personal medical information received by CDC personnel shall be protected in accordance with applicable federal law, including 5 U.S.C. Section 552a. Privacy Act - Records maintained on individuals and the Freedom of Information Act. 5 U.S.C. Section 552. Administrative Procedure - Public information; agency rules, opinions, orders, records, and proceedings.

4.2 Notification

4.2.1 Routine Report

4.2.1.1 Routine Report Timing

24-hour report **4.2.1.1.1** The master, the medical staff, or other designated staff of a vessel destined for a U.S. port from a foreign port shall submit at least one standardized gastrointestinal illness report based on the number of reportable cases in the gastrointestinal illness log to the VSP no less than 24 hours, but not more than 30 hours before the vessel's expected arrival at the U.S. port. **01** **C**

4-hour update report **4.2.1.1.2** If the number of cases changes after submission of the initial report, an updated report shall be submitted no less than 4 hours before the vessel's arrival at the U.S. port. **01** **C**

4.2.1.2 Report Contents

contents **4.2.1.2.1** The gastrointestinal illness report shall contain: **01** **C**

(1) The name of the vessel;

(2) The ports of embarkation and disembarkation;

(3) The dates of embarkation and disembarkation;

(4) The total numbers of reportable cases of gastrointestinal illness among passengers and crew members, including those who have been disembarked or removed because of illness, even if the number is 0; and

(5) The total number of passengers and crew members on the cruise.

cruise length 4.2.1.2.2 *For cruises lasting longer than 15 days prior to entering a U. S. port, the gastrointestinal illness report may include only those reportable cases and total numbers of passengers and crew members for the 15 days prior to the expected arrival at a U. S. port.*

4.2.2 Special Report

4.2.2.1 Special Report Timing

2% illness rate **4.2.2.1.1** The master, or designated corporate representative, of a vessel with an international itinerary destined for a U.S. port shall submit a special report at any time during a cruise, including between two U.S. ports, when: **01 C**

(1) The cumulative percentage of reportable cases entered in the gastrointestinal illness surveillance log, reaches 2% among passengers or 2% among crew; and

(2) The vessel is within 15 days of expected arrival at a U.S. port.

daily report **4.2.2.1.2** Daily reports of illness status shall be submitted as requested by the VSP following the initial submission of a special report. **01 C**

routine reporting continues **4.2.2.1.3** Routine 24-hours before arrival and 4-hours before arrival reports shall continue to be submitted by the master, or designated corporate representative, of a vessel that has submitted a special report. **01 C**

4.2.2.2 Special Notification

telephone report	4.2.2.2.1	A telephone notification to the VSP shall accompany a special 2% report.	01	C

4.2.3 Report Retention

4.2.3.1 Retention

retention	4.2.3.1.1	The 24 hour, 4 hour, and special reports shall be maintained on the vessel for 12 months.	02
review	4.2.3.1.2	The reports shall be available for review by the VSP during inspections and outbreak investigations.	02

5.0 Potable Water

5.1 Source
5.2 Bunker and Production Halogenation
5.3 Potable Water System
5.4 Potable Water System Halogenation
5.5 Potable Water System Halogen Monitoring
5.6 Microbiologic Monitoring
5.7 Water Distribution System Protection

5.1 Source

5.1.1 Bunkering

5.1.1.1 Standards

safe source	5.1.1.1.1	Drinking water bunkered from shore supplies shall be potable.	03	C

5.1.1.2 Sample Reports

water report	5.1.1.2.1	Where available, the vessel shall have a copy of the most recent microbiologic report from each port before bunkering potable water to verify that the water meets potable standards.	06	
	5.1.1.2.2	*Water samples collected and analyzed by the vessel for the presence of Escherichia coli may be substituted for port water system supplied reports. These samples shall be analyzed utilizing a method accepted in Standard Methods for the Examination of Water and Wastewater.*		
review	5.1.1.2.3	These records shall be maintained on the vessel for 12 months and shall be available to the VSP for review during inspections.	06	

5.1.2 Water Production

5.1.2.1 Location

polluted harbors	5.1.2.1.1	A distillation plant or other process that supplies water to the vessel's potable water system shall not operate in polluted or harbor areas.	03	C

5.2 Bunker and Production Halogenation

5.2.1 Procedures

5.2.1.1 Residual Halogen

halogen level	5.2.1.1.1	Potable water shall be continuously halogenated to at least 2.0 mg/L (ppm) free residual halogen at the time of bunkering or production with an automatic halogenation device.	03	C

5.2.1.2 Monitoring

halogen pre-test	5.2.1.2.1	A halogen demand test and pH shall be conducted on the shore-side water supply before starting the bunkering process to establish the correct halogen dosage.	08
hourly tests	5.2.1.2.2	Free residual halogen monitoring shall be performed at least hourly during the bunkering of potable water and performed at least once every 4 hours during the onboard production of potable water.	08
records	5.2.1.2.3	Accurate records of this monitoring shall be maintained aboard for 12 months and shall be available to the VSP for review during inspections.	08
analyzer-chart recorders	5.2.1.2.4	Halogen analyzer-chart recorders used in lieu of manual tests and logs shall be calibrated at the beginning of bunkering or production, and the calibration shall be recorded on the chart or in a log book.	06
construction	5.2.1.2.5	Halogen analyzer-chart recorders used on bunker water systems shall be constructed and installed in accordance with accepted engineering practices.	06
data logger	5.2.1.2.6	*Electronic data loggers with certified data security features may be used in lieu of chart recorders.*	
halogen sample	5.2.1.2.7	Water samples for halogen testing shall be obtained from a sample cock located on the bunker or production water line at least 3 m (10 feet) after the halogen injection point and before the storage tank.	08
tank sample	5.2.1.2.8	*Bunker water or production water halogen samples may also be taken from potable water tanks which were previously empty.*	

5.3 Potable Water System

5.3.1 Potable Water Tanks

5.3.1.1 Protection

potable tank walls	**5.3.1.1.1**	Potable water tanks shall not share a common wall with the hull of the vessel or with tanks containing non-potable water or other liquids.	**07**	**C**
non-potable piping	5.3.1.1.2	Piping systems carrying sewage or other non-potable liquids shall not pass above or through potable water tanks.	08	
coatings	5.3.1.1.3	Interior coatings on potable water tanks shall be approved for potable water contact.	08	

5.3.1.2 Tank Construction

identification	5.3.1.2.1	Potable water tanks shall be identified with a number and the words “POTABLE WATER” in letters 13 mm (0.5 inch) high.	08
sample valves	5.3.1.2.2	Potable water tanks shall have sample valves which are turned down.	08
vent / overflow	5.3.1.2.3	The potable water tank or combined vent and overflow shall be protected from contamination.	08
level measurement	5.3.1.2.4	Any device for determining the depth of water in the potable water tanks shall be constructed and maintained so as to prevent contaminated substances or liquids from entering the tanks.	08
manual sounding	5.3.1.2.5	Manual sounding of potable water tanks shall be performed only in emergencies and shall be performed in a sanitary manner.	08

5.3.2 Potable Water Piping

5.3.2.1 Protection

identification	5.3.2.1.1	Potable water piping shall be painted light blue or striped with 15 cm (6 inches) light blue bands or a light blue stripe at fittings on each side of partitions, decks, and bulkheads and at intervals not to exceed 5 m (15 feet) in all spaces, except where the decor would be marred by such markings.	08	
protection	**5.3.2.1.2**	Potable water piping shall not pass under or through sewage or other tanks holding non-potable liquids.	**07**	**C**
bunker connection	5.3.2.1.3	The potable water bunker filling line shall begin either horizontally or in a gooseneck position pointing downwards, at a point at least 45 cm (18 inches) above the bunker station deck.	08	
cap / keeper chain	5.3.2.1.4	The potable water filling line shall have a screw cap or plug fastened by a non-corroding chain to an adjacent bulkhead or surface in such a manner that the cap or plug shall not touch the deck when hanging free.	08	
identification	5.3.2.1.5	Each potable water filling line shall be painted light blue and clearly marked “POTABLE WATER FILLING” in letters at least 13 mm (0.5 inch) high, stamped on a non-corrosive label plate or the equivalent and located at or near the point of hose connection.	08	
non-potable fresh water	5.3.2.1.6	Non-potable freshwater, if used on the vessel, shall be bunkered through separate piping using fittings incompatible for potable water bunkering.	08	
different piping	5.3.2.1.7	Non-potable freshwater shall flow through a completely different piping system and be identified with a different color.	08	

5.3.3 Potable Water Hoses

5.3.3.1 Construction

fittings	5.3.3.1.1	Potable water hoses shall have unique fittings from all other hose fittings on the vessel.	08
identification	5.3.3.1.2	Potable water hoses shall be identified for use with potable water.	08

construction	5.3.3.1.3	All hoses, fittings, water filters, and appurtences used for connection with the bunkering of potable water shall be constructed of safe, easily cleanable materials.	08
good repair	5.3.3.1.4	All hoses, fittings, water filters, and appurtences used for connection with the bunkering of potable water shall be maintained in good repair.	08
locker construction	5.3.3.1.5	Potable water hose lockers shall be constructed of smooth, nontoxic, corrosion resistant, easily cleanable material and shall be maintained in good repair.	08
locker identification	5.3.3.1.6	Potable water hose lockers shall be marked “POTABLE WATER HOSE AND FITTING STORAGE” in letters at least 13 mm (0.5 inch) high.	08
locker height	5.3.3.1.7	The potable water hose lockers shall be mounted at least 45 cm (18 inches) above the deck and shall be self-draining.	08
locker closed	5.3.3.1.8	The locker doors shall be closed when not removing hoses and equipment.	08
locker restriction	5.3.3.1.9	The locker shall not be used for any other purpose than storing potable water hoses, fittings, sanitizing buckets, and other associated equipment.	08

5.3.3.2 Handling

limit use	5.3.3.2.1	Potable water hoses shall not be used for any other purpose.	08
handling	5.3.3.2.2	All hoses, fittings, water filters, buckets, and appurtences used for connection with the bunkering of potable water shall be handled and stored in a sanitary manner.	08
contamination prevention	5.3.3.2.3	Potable water hoses shall be handled with care to prevent contamination by dragging ends on the ground, pier, or deck surfaces, or by dropping the hose into the harbor.	08
flush / drain	5.3.3.2.4	Potable water hoses shall be flushed before being used and shall be drained after each use.	08
storage	5.3.3.2.5	Potable water hoses shall be stowed with the ends capped, on reels, or racks in potable water hose lockers.	08

5.3.4 Potable Water System Contamination

5.3.4.1 Cleaning and Disinfection

disinfecting	**5.3.4.1.1**	Potable water tanks and any parts of the potable water distribution system shall be cleaned, disinfected, and flushed with potable water: (1) Before being placed in service; and (2) Before returning to operation after repair, replacement; or (3) Being subjected to any contamination, including entry into a potable water tank.	**07**	**C**
annual inspection	5.3.4.1.2	Potable water tanks shall be inspected, cleaned, and disinfected during dry docks and wet docks, or every 2 years, whichever is less.	08	
record retention	5.3.4.1.3	Documentation of the cleaning shall be maintained for 12 months and shall be available to the VSP for review during inspections.	08	
disinfection residual	**5.3.4.1.4**	Disinfection following potential contamination shall be accomplished by increasing free residual halogen to at least 50 mg/L (ppm) throughout the affected area and maintaining this concentration for 4 hours.	**07**	**C**
emergencies	5.3.4.1.5	*In an emergency, this contact time may be shortened to 1 hour by increasing free residual halogen to at least 100 mg/L (ppm) throughout the affected area.*		
flush	5.3.4.1.6	The disinfected parts of the system shall be flushed with potable water until the free residual halogen is #5.00 mg/L (ppm).	08	

5.4 Potable Water System Halogenation

5.4.1 Halogenation Devices

5.4.1.1 Construction and Installation

construction	5.4.1.1.1	All distribution water system halogenation devices shall be constructed and installed in accordance with recommended engineering practices.	06	

5.4.1.2 Operation

residual	**5.4.1.2.1**	The halogenation device shall provide continuous halogenation of the potable water distribution system and shall maintain a free residual halogen of $0.2 mg/L (ppm) and #5.0 mg/L (ppm) throughout the distribution system.	**04**	**C**
controlled	5.4.1.2.2	The amount of halogen injected into the potable water system shall be controlled by a flow meter or a free halogen analyzer.	08	
backup pump	5.4.1.2.3	At least one backup halogen pump shall be available with automatic switchover to maintain the free residual halogen in the event that the primary pump fails.	06	

5.5 Potable Water System Halogen Monitoring

5.5.1 Halogen Analyzer-Chart Recorder

5.5.1.1 Installation

distant point	5.5.1.1.1	A halogen analyzer-chart recorder shall be installed at a distant point in the potable water distribution system where a significant water flow exists.	06	
data logger	5.5.1.1.2	*Electronic data loggers with certified data security features may be used in lieu of chart recorders.*		

5.5.1.2 Operation

maintenance	5.5.1.2.1	The halogen analyzer-chart recorder shall be properly maintained, operated, and calibrated daily in accordance with the manufacturer's instructions.	06	

calibration	5.5.1.2.2	The calibration shall be recorded on the chart or in a log book.	06	
accuracy	**5.5.1.2.3**	The free residual halogen measured by the halogen analyzer shall be ±0.2 mg/L (ppm) of the free residual halogen measured by the manual test.	**05**	**C**
test kit	5.5.1.2.4	The test kit used to calibrate the halogen analyzer shall be graduated in increments no greater than 0.2 mg/L (ppm) in the range of free residual halogen normally maintained in the potable water system.	06	

5.5.2 Halogen Analyzer Charts

5.5.2.1 Chart Design

range	5.5.2.1.1	Halogen analyzer-chart recorder charts shall have a range of 0.0 to 5.0 mg/L (ppm) and have a recording period of 24 hours.	06	
data logger	5.5.2.1.2	Electronic data loggers with certified data security features used in lieu of chart recorders shall produce records that conform to the principles of operation and data display required of the analog charts, including printing the records.	06	
	5.5.2.1.3	Electronic data logging shall be in increments of #15 minutes.	06	

5.5.2.2 Operation

charts	5.5.2.2.1	Halogen analyzer-chart recorder charts shall be changed, initialed, and dated daily. Charts shall contain notations of any unusual water events in the potable water system.	06	
retention	5.5.2.2.2	Halogen analyzer-chart recorder charts shall be retained for at least 12 months and shall be available to the VSP for review during inspections.	06	
chart review	5.5.2.2.3	Records from the halogen analyzer-chart recorder shall verify the free residual halogen of $0.2 mg/L (ppm) and #5.0 mg/L (ppm) in the water distribution system for at least 16 hours in each 24-hour period since the last inspection of the vessel.	06	

5.5.3 Manual Halogen Monitoring

5.3.3.1 Equipment Failure

every 4 hours 5.5.3.1.1 Free residual halogen shall be measured by a manual test kit at the halogen analyzer at least every 4 hours in the event of equipment failure. 06

recording 5.5.3.1.2 Manual readings shall be recorded on a chart or log, shall be retained for at least 12 months, and shall be available to the VSP for review during inspections. 06

limit 5.5.3.1.3 Repairs on malfunctioning halogen analyzer-chart recorders shall be completed within 10 days of equipment failure. 06

5.6 Microbiologic Monitoring

5.6.1 Sampling and Analysis

5.6.1.1 Methodology

samples 5.6.1.1.1 A minimum of four potable water samples per month shall be collected and analyzed for the presence of *Escherichia coli*. Samples shall be collected randomly from locations forward, aft, upper, and lower decks of the vessel. 06

analysis 5.6.1.1.2 Samples shall be analyzed utilizing a method accepted in *Standard Methods for the Examination of Water and Wastewater*. 06

5.6.1.2 Records

records 5.6.1.2.1 Sample results shall be maintained with the halogen analyzer-chart recorder charts, shall be retained for at least 12 months, and shall be available to the VSP for review during inspections. 06

5.7 Water Distribution System Protection

5.7.1 Cross-Connection Control

5.7.1.1 Program

cross-connections	5.7.1.1.1	The potable water distribution system shall be maintained free of cross-connections with non-potable piping systems and tanks.	07	C
protection	5.7.1.1.2	The potable water system shall be protected against backflow or other contamination by backflow preventers or air gaps.	07	C
control program	5.7.1.1.3	The vessel shall provide a comprehensive cross-connection control program that provides safe connections to the potable water system through air gaps or appropriate backflow devices at the following locations, if present: (1) Potable water supply lines to swimming pools, whirlpool spas, hot tubs, bathtubs, showers, and similar facilities; (2) Photographic laboratory developing machines and utility sinks; (3) Beauty and barber shop spray-rinse hoses; (4) Potable water faucets where hoses are connected or can be connected by threaded or quick-connect outlets such as those serving tanks containing chlorine and other chemicals, and deck taps; (5) Garbage grinders and pulpers; (6) Mechanical warewashing machines; (7) Hospital and laundry equipment; (8) Air conditioning expansion tanks; (9) Boiler feed water tanks; (10) Fire systems; (11) Toilets;	08	

(12) Potable water, bilge, and sanitary pumps that require priming;

(13) Freshwater or saltwater ballast systems;

(14) Bilge or other waste water locations;

(15) International shore connection; and

(16) Any other connection between potable and non-potable water systems.

5.7.1.2 Device Installation

backflow preventers	5.7.1.2.1	Backflow preventers shall be installed when air gaps are impractical or when water under pressure is required.	08
2X diameter	5.7.1.2.2	Air gaps shall be at least twice the diameter of the delivery fixture opening and a minimum of 3 cm (1 inch).	08
flood-level rim	5.7.1.2.3	An atmospheric vacuum breaker shall be installed at least 15 cm (6 inches) above the flood-level rim of the fixtures.	08
after valve	5.7.1.2.4	An atmospheric vacuum breaker shall be installed only in the supply line on the discharge side of the last control valve.	08
continuous pressure	5.7.1.2.5	A continuous pressure-type backflow preventer shall be installed when a valve is located downstream from the backflow preventer.	08
backflow preventers	5.7.1.2.6	Backflow preventers shall be provided on all fixtures using potable water and which have submerged inlets.	08
vacuum toilets	5.7.1.2.7	A vacuum breaker shall be installed on a potable water supply that is connected to a vacuum toilet system. An atmospheric vacuum breaker shall be located on the discharge side of the last control valve (flushing device).	08
diversion valves	5.7.1.2.8	Lines to divert potable water to other systems by valves or interchangeable pipe fittings shall have an air gap following the valve.	08
location	5.7.1.2.9	Backflow preventers shall be located so they may be serviced and maintained.	08

5.7.1.3 Air Supply Connections

air supply 5.7.1.3.1 The air supply to a compressed air system that supplies pressure to both non-potable and potable water pneumatic tanks shall be through a press-on (manual) type of air valve or hose. 08

separate compressor 5.7.1.3.2 *A fixed connection of this valve may be used when the air supply is from a separate compressor used exclusively for pressure to potable pneumatic tanks.*

5.7.2 Backflow-Preventer Inspection and Testing

5.7.2.1 Maintenance

maintained 5.7.2.1.1 Backflow preventers shall be maintained in good repair. 08

5.7.2.2 Inspection and Service

schedule 5.7.2.2.1 Backflow prevention devices should be periodically inspected and any failed units shall be replaced. 08

RP annually 5.7.2.2.2 Backflow prevention devices requiring testing, for example reduced pressure backflow preventer and double check valves with test cocks, shall be inspected and tested with a test kit at least annually. Test results showing the pressure differences on both sides of the valves shall be maintained for each device. 08

records 5.7.2.2.3 The inspection and test results for backflow preventers shall be retained for at least 12 months and shall be available to the VSP for review during inspections. 08

6.0 Swimming Pools and Whirlpool Spas

6.1 Flow-Through Seawater Swimming Pools
6.2 Recirculating Swimming Pools
6.3 Whirlpool Spas
6.4 Safety

6.1 Flow-Through Seawater Swimming Pools

6.1.1 Operation

6.1.1.1 At Sea

12 miles	6.1.1.1.1	Flow-through seawater supply systems for swimming pools shall be used only while the vessel is under way and at sea beyond 20 kilometers (12 miles) from nearest land.	10	

6.1.1.2 In Port

drained	6.1.1.2.1	The pool shall be drained before the vessel reaches port, and it shall remain empty while in port.	10	
switched to recirculation	6.1.1.2.2	If the pool is not drained before arriving in port, the pool's seawater filling system shall be shut off 20 kilometers (12 miles) before reaching land, and a recirculation system shall be used with appropriate filtering and halogenation.	10	
1.0 mg/L (ppm)	**6.1.1.2.3**	No bathers shall be allowed to use the pool before a free residual halogen of 1.0 mg/L (ppm) is achieved.	**09**	**C**

6.2 Recirculating Swimming Pools

6.2.1 Operation

6.2.1.1 Filters

filtered	6.1.2.1.1	Recirculated swimming pool water shall be filtered.	10	
backwashed	6.1.2.1.2	Filter pressure differential shall be monitored, and the filter shall be backwashed as recommended by the manufacturer.	10	

media	6.1.2.1.3	Filter media shall be examined and changed as recommended by the manufacturer.	10	
gauges	6.1.2.1.4	Swimming pool filter pressure gauges and valves shall be replaced when they are defective.	10	
manuals	6.1.2.1.5	The operating manuals for all recirculating swimming pool components such as filters, pumps, and halogenation shall be maintained aboard the vessel in a location that is known by and is accessible to crew members who are responsible for the pool's operations and maintenance.	10	
	6.2.1.2	**Water Quality**		
water chemistry	6.1.2.2.1	The recirculated swimming pool's water flow rates, pH, alkalinity, and clarity shall be monitored and adjusted as recommended by the manufacturer and to maintain optimum public health protection.	10	
fecal accident	6.1.2.2.2	A fecal accident response procedure shall be documented and available for review during inspections.	10	
	6.2.2	**Halogenation**		
	6.2.2.1	**Residual Halogen**		
residual	**6.2.2.1.1**	A free residual halogen of $1.0 and #3.0 mg/L (ppm) shall be maintained in recirculated swimming pools.	**09**	**C**
maintenance	6.2.2.1.2	Halogenation systems shall be operated and maintained in good repair in accordance with the manufacturer's recommendations.	10	
	6.2.2.2	**Residual Halogen Monitoring**		
test kit	6.2.2.2.1	A halogen test kit shall be provided and used.	10	
testing	6.2.2.2.2	Residual halogen logs shall be maintained with residuals measured and recorded every 4 hours during operation.	10	
analyzer-chart recorder	6.2.2.2.3	Halogen analyzer-chart recorders used in lieu of manual tests, and logs shall be calibrated daily, and the calibration shall be recorded on the chart or in a log book.	10	
data logger	6.2.2.2.4	*Electronic data loggers with certified data security features may be used in lieu of chart recorders.*		

charts	6.2.2.2.5	Halogen analyzer-chart recorder charts shall be initialed, dated, and changed daily.	10
logs	6.2.2.2.6	Logs and charts shall contain notations of any unusual water events with the swimming pool operation and corrective actions taken.	10
retention	6.2.2.2.7	Logs and charts shall be retained for at least 12 months and shall be available to the VSP for review during inspections.	10

6.3 Whirlpool Spas

6.3.1 Public Operations

6.3.1.1 Filters

filtration	6.3.1.1.1	Whirlpool spa water shall be filtered.	10
replacement	6.3.1.1.2	At least one replacement cartridge or cannister-type filter shall be available at all times for whirlpool spa filtration systems that use this type of filter.	10
inspection	6.3.1.1.3	Cartridge or cannister-type filters shall be inspected at least weekly for cracks, breaks, damaged components, and excessive organic material accumulation.	10
backwash	6.3.1.1.4	Granular filters shall be backwashed at least daily until the sight glass indicates a clean flow. The uniformity of the backwash action shall be observed, where possible. Other types of filter media shall be backwashed or cleaned at the frequency specified by the manufacturer.	10
examination	6.3.1.1.5	The granular filters shall be opened at least monthly and examined for cracks, mounds, or holes in the filter media. A core sample of the filter media shall be inspected for excessive organic material accumulation using a recommended sedimentation method.	10
replacement	6.3.1.1.6	The granular filter media shall be replaced at least every 6 months. The filter housing shall be cleaned and sanitized before the new filter media is placed in it.	10
maintenance	6.3.1.1.7	Whirlpool spa filter pressure gauges and valves shall be replaced when they are defective.	10
manuals	6.3.1.1.8	The operating manuals for all whirlpool spa components shall be maintained aboard the vessel.	10

6.3.1.2 Water Quality

changed	6.3.1.2.1	The whirlpool spa water shall be changed daily.	10	
pH	6.3.1.2.2	The whirlpool spa water shall be maintained with a pH between 7.2 and 7.8.	10	
fecal accident	6.3.1.2.3	A fecal accident response procedure shall be documented and available to the VSP for review during inspections.	10	

6.3.2 Halogenation

6.3.2.1 Residual Halogen

residual	**6.3.2.1.1**	Whirlpool spas shall maintain a free residual chlorine of $3.0 mg/L (ppm) and #10 mg/L (ppm), or a free residual bromine of $4.0 mg/L (ppm) and #10 mg/L (ppm).	**09**	**C**
shock	6.3.2.1.2	The free residual halogen shall be increased to at least 10.0 mg/L (ppm) in whirlpool spas and circulated for at least 1 hour at the end of each day.	10	
maintenance	6.3.2.1.3	Halogenation systems shall be operated and maintained in good repair in accordance with the manufacturer's recommendations.	10	

6.3.2.2 Residual Halogen Monitoring

test kit	6.3.2.2.1	A halogen test kit shall be provided and used.	10	
testing	6.3.2.2.2	Residual halogen logs shall be maintained with residuals measured and recorded hourly during operation.	10	
analyzer-chart recorder	6.3.2.2.3	Halogen analyzer-chart recorders used in lieu of manual tests and logs shall be calibrated daily, and the calibration shall be recorded on the chart or in a log book.	10	
data logger	6.3.2.2.4	*Electronic data loggers with certified data security features may be used in lieu of chart recorders.*		
charts	6.3.2.3.5	Halogen analyzer-chart recorder charts shall be initialed, dated and changed daily.	10	
logs	6.3.2.3.6	Logs and charts shall contain notations of any unusual water events with the whirlpool spas and corrective actions taken.	10	
retention	6.3.2.3.7	Logs and charts shall be retained for at least 12 months.	10	

6.3.3 Private Cabin Operations

6.3.3.1 Maintenance

cleaning	6.3.3.1.1	Private whirlpool spas located in individual passenger cabins shall be cleaned and disinfected, including associated recirculation systems, between occupancies or weekly, whichever is more frequent.	10
maintenance	6.3.3.1.2	Manufacturer's operation and maintenance instructions shall be available to personnel that service the units.	10

6.3.4 Individual Hydrotherapy Pools

6.3.4.1 Maintenance

cleaning	6.3.4.1.1	Individual hydrotherapy pools shall be cleaned and disinfected, including associated recirculation systems, between occupancies.	10
maintenance	6.3.4.1.2	Manufacturer's operation and maintenance instructions shall be available available to personnel that service the units.	10

6.4 Safety

6.4.1 Public Swimming Pools and Whirlpool Spas

6.4.1.1 Signs and Markings

signs	6.4.1.1.1	Safety signs shall be provided for public swimming pools and whirlpool spas.	10
depth markers	6.4.1.1.2	Depth markers shall be installed for every 1 m (3 feet) in change of depth and shall be displayed prominently so they can be seen from the deck and from in the pool.	10
spas	6.4.1.1.3	A sign shall be installed near the whirlpool spas that lists standard safety precautions and risks, warning against use by particularly susceptible people, such as those who are immunocompromised.	10

6.4.1.2 Equipment

life saving	6.4.1.2.1	Easy access shepherd's hook and approved floatation device shall be provided at a prominent location near each public swimming pool.	10
anti-vortex drain	6.4.1.2.2	Anti-vortex drain covers shall be provided on swimming pools and whirlpool spas.	10
temperature	6.4.1.2.3	A temperature control mechanism to prevent the temperature from exceeding 40°C (104°F) shall be provided on whirlpool spas.	10

6.4.1.3 Restrictions

diapers	6.4.1.3.1	Children in diapers or who are not toilet trained are not permitted in the public swimming pools and whirlpool spas.	10

7.0 Food Safety

7.1 Reserved
7.2 Personnel
7.3 Food
7.4 Equipment and Utensils
7.5 Warewashing and Laundering
7.6 Poisonous and Toxic Materials
7.7 Facilities

7.1 Reserved

7.2 Personnel

7.2.1 Food-Safety Management

7.2.1.1 Food-Safety Knowledge

knowledge

7.2.1.1.1 Based on the risks of foodborne illness inherent to the food operation, during inspections and upon request the person in charge of the food operations on the vessel shall demonstrate to the VSP knowledge of foodborne disease prevention, application of the Hazard Analysis Critical Control Point principles, and the food-safety guidelines in this manual. The person in charge shall demonstrate this knowledge by compliance with these guidelines, by being a domestically or foreign certified food protection manager who has shown proficiency of required information through passing a test that is part of an accredited program, or by responding correctly to the inspector's questions as they relate to the specific food operation. The areas of knowledge shall include: 13 C

personal hygiene

(1) Describing the relation between prevention of foodborne disease and personal hygiene of a food employee;

employee to food disease transmission

(2) Explaining the responsibility of the person in charge of preventing the transmission of foodborne disease by a food employee who has a disease or medical condition that may cause foodborne disease;

symptoms

(3) Describing the symptoms associated with the diseases

that are transmissible through food;

PHF time / temperature

(4) Explaining the significance of the relation between maintaining the time and temperature of potentially hazardous food;

raw / undercooked PHF

(5) Explaining the hazards involved in the consumption of raw or undercooked meat, poultry, eggs, and fish;

safe cooking temperatures

(6) Stating the required food temperatures and times for safe cooking of potentially hazardous food, including meat, poultry, eggs, and fish;

safe holding temperatures

(7) Stating the required temperatures and times for the safe refrigerated storage, hot holding, cooling, and reheating of potentially hazardous food;

cross-contamination

(8) Describing the relation between prevention of foodborne illness and management and control of the following: cross-contamination, hand contact with ready-to-eat foods, handwashing, and maintaining the food operations in a clean condition and in good repair;

equipment and food safety

(9) Explaining the relation between food safety and providing equipment that is sufficient in number and capacity, and properly designed, constructed, located, installed, operated, maintained, and cleaned;

cleaning and sanitizing

(10) Explaining correct procedures for cleaning and sanitizing utensils and food-contact surfaces of equipment;

toxic material controls

(11) Identifying poisonous or toxic materials on the vessel and the procedures necessary to ensure they are safely stored, dispensed, used, and disposed of according to law; and

critical-control points

(12) Identifying critical-control points in the operation from purchasing through service that when not controlled may contribute to the transmission of foodborne illness and explaining steps taken to ensure the points are controlled in accordance with the guidelines in this manual.

7.2.1.2 Food-Safety Duties

monitoring duties

7.2.1.2.1 The person in charge of the food operations on the vessel shall ensure that: 13 C

separate areas

(1) Food operations are not conducted in a room used as living or sleeping quarters;

unnecessary persons

(2) Persons unnecessary to the food operation are not allowed in the food preparation, food storage, or warewashing areas, except that brief visits and tours may be authorized if steps are taken to ensure that exposed food; clean equipment, utensils, and linens; and unwrapped single-service and single-use articles are protected from contamination;

access control

(3) Employees and other persons such as delivery and maintenance persons and pesticide applicators entering the food preparation, food storage, and warewashing areas comply with the guidelines in this manual;

handwashing

(4) Food employees are effectively cleaning their hands, by routinely monitoring the employees' handwashing;

receiving

(5) Employees are observing foods as they are received to determine that they are from approved sources, delivered at the required temperatures, protected from contamination, unadulterated, and accurately presented, by routinely monitoring the employees' observations and periodically evaluating foods upon their receipt;

PHF cooking temperature

(6) Employees are properly cooking potentially hazardous food, being particularly careful in cooking foods known to cause severe foodborne illness and death, such as eggs and comminuted meats, through daily oversight of the employees' routine monitoring of the cooking temperatures using appropriate temperature measuring devices properly scaled and calibrated;

PHF cooling

(7) Employees are using proper methods to rapidly cool potentially hazardous foods that are not held hot or are not for consumption within 4 hours, through daily oversight of the employees' routine monitoring of food temperatures during cooling;

consumer advisory

(8) Consumers who order raw or partially cooked ready-to-eat foods of animal origin are informed that the food is

not cooked sufficiently to ensure its safety;

sanitizing

(9) Employees are properly sanitizing cleaned multiuse equipment and utensils before they are reused, through routine monitoring of solution temperature and exposure time for hot water sanitizing, and chemical concentration, pH, temperature, and exposure time for chemical sanitizing;

clean tableware

(10) Consumers are notified that clean tableware is to be used when they return to self-service areas such as salad bars and buffets;

no bare hand contact

(11) Employees are preventing cross-contamination of ready-to-eat food with bare hands by properly using suitable utensils such as deli tissue, spatulas, tongs, single-use gloves, or dispensing equipment; and

employee training

(12) Employees are properly trained in food safety as it relates to their assigned duties.

7.2.2 Employee Health

7.2.2.1 Communicable Diseases and Symptoms

communi-cable diseases

7.2.2.1.1 Food employees suspected of, diagnosed with, or exposed to any communicable diseases caused by ***Salmonella* typhi**, ***Shigella*** spp., ***Escherichia coli*** O157:H7, or hepatitis A virus, or other communicable diseases that can be transmitted by food, shall be restricted from working with exposed food, warewashing, clean equipment, utensils, and linens, and unwrapped single-service and single-use articles. **11** **C**

other symptoms

7.2.2.1.2 Food employees who have conditions or symptoms of boils, open sores, infected wounds, diarrhea, jaundice, fever, vomiting, sore throat with fever, or discharges from the nose or mouth shall report these conditions or symptoms to the vessel's medical staff and shall be restricted from working with exposed food, warewashing, clean equipment, utensils, and linens, and unwrapped single-service and single-use articles. **11** **C**

sneeze / cough

7.2.2.1.3 Food employees experiencing persistent sneezing, coughing, or a runny nose that causes discharges from the eyes, nose, or mouth may not work with exposed food, **11** **C**

warewashing clean equipment, utensils, and table linens; or unwrapped single-service or single-use articles.

restrictions removal **7.2.2.1.4** The restriction may be removed when the person in charge of the food operation obtains written approval from the vessel's physician or equivalent medical staff. **11** **C**

7.2.3 Employee Cleanliness

7.2.3.1 Hands and Arms

hands and arms clean **7.2.3.1.1** Food employees shall keep their hands and exposed portions of their arms clean. **12** **C**

cleaning procedures **7.2.3.1.2** Food employees shall clean their hands and exposed portions of their arms with a cleaning compound in a handwashing sink by vigorously rubbing together the surfaces of their lathered hands and arms for at least 20 seconds and thoroughly rinsing with clean water. Employees shall pay particular attention to the areas underneath the fingernails and between the fingers. **12** **C**

when to wash hands **7.2.3.1.3** Food employees shall clean their hands and exposed portions of their arms immediately before engaging in food preparation including working with exposed food, clean equipment and utensils, and unwrapped single-service and single-use articles and: **12** **C**

after touching (1) After touching bare human body parts other than clean hands and clean, exposed portions of arms;

after toilet (2) After using the toilet room;

after cough / sneeze (3) After coughing, sneezing, using a handkerchief or disposable tissue, using tobacco, eating, or drinking;

after soiled equipment (4) After handling soiled equipment or utensils;

changing tasks (5) During food preparation, as often as necessary to remove soil and contamination and to prevent cross-contamination when changing tasks;

between raw and RTE (6) When switching between working with raw food and working with ready-to-eat food; and

after other contamination (7) After engaging in other activities that contaminate the hands.

hand sanitizer	7.2.3.1.4	A hand sanitizer and a chemical hand sanitizing solution used as a hand dip, if used, shall comply with applicable formulation and use laws.	14	
apply to cleaned hands	**7.2.3.1.5**	A hand sanitizer and a chemical hand sanitizing solution used as a hand dip shall be applied only to hands that are cleaned.	**12**	**C**
	7.2.3.2	**Fingernails**		
fingernails	7.2.3.2.1	Food employees shall keep their fingernails trimmed, filed, and maintained so the edges and surfaces are cleanable and not rough.	14	
fingernail polish / artificial nails	7.2.3.2.2	*Unless wearing intact gloves in good repair*, a food employee may not wear fingernail polish or artificial fingernails when preparing exposed food.	14	
	7.2.3.3	**Jewelry**		
jewelry	7.2.3.3.1	While preparing food, food employees may not wear jewelry on their arms and hands.	14	
plain ring	7.2.3.3.2	*A plain ring such as a smooth simple wedding band may be allowed to be worn by food employees.*		
	7.2.3.4	**Outer Clothing**		
outer clothing	7.2.3.4.1	Food employees shall wear clean outer clothing to prevent contamination of food, equipment, utensils, linens, and single-service and single-use articles.	14	
	7.2.4	**Hygienic Practices**		
	7.2.4.1	**Eating, Drinking, or Using Tobacco**		
eating, drinking and using tobacco	**7.2.4.1.1**	An employee shall eat, drink, or use any form of tobacco only in designated areas where the contamination of exposed food; clean equipment, utensils, and linens; unwrapped single-service and single-use articles; or other items needing protection can not result.	**12**	**C**

7.2.4.2 Hair Restraints

hair restraints 7.2.4.2.1 Food employees shall wear hair restraints such as hats, hair coverings or nets, beard restraints, and clothing that covers body hair, that are designed and worn to effectively keep their hair from contacting exposed food; clean equipment, utensils, and linens; and unwrapped single-service and single-use articles. 14

counter staff / wait staff 7.2.4.2.2 *This section does not apply to food employees such as counter staff who serve only beverages and wrapped or packaged foods, hostesses, and wait staff if they present a minimal risk of contaminating exposed food; clean equipment, utensils, and linens; and unwrapped single-service and single-use articles.*

7.3 Food

7.3.1 Food Condition

7.3.1.1 Safe and Unadulterated

sound condition	7.3.1.1.1	Food shall be safe and unadulterated.	15	C

7.3.2 Food Sources

7.3.2.1 Lawful Sourcing

comply with law	7.3.2.1.1	Food shall be obtained from sources that comply with applicable local, state, federal, or country of origin's statutes, regulations, and ordinances.	15	C
food from private home	7.3.2.1.2	Food prepared in a private home may not be used or offered for human consumption on a vessel.	15	C
fish for undercooked consumption	7.3.2.1.3	Fish, other than molluscan shellfish, that are intended for consumption in their raw form may be served if they are obtained from a supplier that freezes the fish to destroy parasites; or frozen on the vessel and records are retained.	15	C
steaks	7.3.2.1.4	Whole-muscle, intact beef steaks that are intended for consumption in an undercooked form without a consumer advisory shall be:	15	C
from processing plants		(1) Obtained from a food-processing plant that packages the steaks and labels them to indicate they meet the definition of whole-muscle, intact beef; or		
cut on vessel		(2) If individually cut on a vessel, cut from whole-muscle intact beef that is labeled by a food-processing plant to indicate the beef meets the definition of whole-muscle, intact beef, and prepared so they remain intact.		
hermetically sealed containers	7.3.2.1.5	Food in a hermetically sealed container shall be obtained from a food-processing plant that is regulated by the food regulatory agency that has jurisdiction over the plant.	15	C
milk	7.3.2.1.6	Fluid milk and milk products shall be obtained from sources that comply with Grade A standards as specified in law.	15	C

	7.3.2.1.7	Fish and Molluscan Shellfish Sources:	15	C
fish / molluscan shellfish		(1) Fish that are received for service shall be commercially and legally caught or harvested or otherwise approved for service by the VSP.		
no recreationally caught		(2) Molluscan shellfish that are recreationally caught may not be received for service.		
certified source		(3) Molluscan shellfish shall be obtained from sources according to law and the requirements specified in the U.S. Department of Health and Human Services, Public Health Service, Food and Drug Administration, National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish or equivalent standards; and received in interstate commerce shall be from sources that are listed in the FDA Interstate Certified Shellfish Shippers List or equivalent foreign certified shellfish listing.		
wild mushrooms	7.3.2.1.8	Mushroom species picked in the wild shall be obtained from sources where each mushroom is individually inspected and found to be safe by an approved mushroom identification expert. *This requirement does not apply to:* *(1) Cultivated wild mushroom species that are grown, harvested, and processed in an operation that is regulated by the food regulatory agency that has jurisdiction over the operation; or* *(2) Wild mushroom species if they are in packaged form and are the product of a food-processing plant that is regulated by the food regulatory agency that has jurisdiction over the plant.*	15	C
game animals	7.3.2.1.9	If game animals are received for sale or service they shall be:	15	C
commercially raised		(1) Commercially raised for food and raised, slaughtered, and processed under law; or		
inspection program		(2) Under a voluntary inspection program administered by the USDA for game animals such as exotic animals (reindeer, elk, deer, antelope, water buffalo, or bison) that are inspected and approved in accordance with 9 CFR 352 Voluntary Exotic Animal Program or rabbits that are "inspected and certified" in accordance with 9 CFR 354 Rabbit Inspection Program.		

endangered species

(3) A game animal may not be received for service if it is a species of wildlife that is listed in 50 CFR 17 Endangered and Threatened Wildlife and Plants.

7.3.2.2 Receiving Condition

receiving temperatures

7.3.2.2.1 Receiving temperatures shall be as follows: **16** **C**

(1) Refrigerated, potentially hazardous food shall be at a temperature of 7°C (45°F) or below when received.

(2) *If a temperature other than 7°C (45°F) for a potentially hazardous food is specified in law governing its distribution, such as laws governing milk, molluscan shellfish, and shell eggs, the food may be received at the specified temperature.*

(3) Potentially hazardous food that is cooked and received hot shall be at a temperature of 60°C (140°F) or above.

(4) A food that is labeled frozen and shipped frozen by a food-processing plant shall be received frozen.

(5) Upon receipt, potentially hazardous food shall be free of evidence of previous temperature abuse.

food additives

7.3.2.2.2 Food may not contain unapproved food additives or additives that exceed amounts specified in law. **15** **C**

shell eggs

7.3.2.2.3 Shell eggs shall be received clean and sound and may not exceed the restricted egg tolerances specified in law. **15** **C**

egg and milk products

7.3.2.2.4 Eggs and milk products shall be received as follows: **15** **C**

egg products

(1) Liquid, frozen, and dry eggs and egg products shall be obtained pasteurized.

milk products

(2) Fluid and dry milk and milk products complying with Grade A standards as specified in law shall be obtained pasteurized.

frozen milk products

(3) Frozen milk products, such as ice cream, shall be obtained pasteurized as specified in 21 CFR 135 Frozen Desserts.

cheese

(4) Cheese shall be obtained pasteurized unless

		alternative procedures to pasteurization are specified in the CFR, such as 21 CFR 133 Cheeses and Related Cheese Products, for curing certain cheese varieties.		
package integrity	**7.3.2.2.5**	Food packages shall be in good condition and protect the integrity of the contents so that the food is not exposed to adulteration or potential contaminants. Canned goods with dents on end or side seams may not be used.	**15**	**C**
ice	**7.3.2.2.6**	Ice for use as a food or a cooling medium shall be made from drinking water.	**15**	**C**
shucked shellfish	**7.3.2.2.7**	Raw shucked shellfish shall be obtained in nonreturnable packages which bear a legible label as specified in the National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish.	**15**	**C**
shellstock shellfish	**7.3.2.2.8**	Shellstock shall be obtained in containers bearing legible source identification tags or labels that are affixed by the harvester and each dealer that depurates, ships, or reships the shellstock, as specified in the National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish.	**15**	**C**
shellstock condition	7.3.2.2.9	Shellstock shall be reasonably free of mud, dead shellfish, and shellfish with broken shells when received by a vessel. Dead shellfish or shellstock with badly broken shells shall be discarded.	19	
	7.3.2.3	**Maintaining Molluscan Shellfish Identification**		
shucked identification	**7.3.2.3.1**	Shucked molluscan shellfish may not be removed from the container in which they are received other than immediately before preparation for service.	**15**	**C**
shellstock identification	**7.3.2.3.2**	Shellstock shellfish tags shall:	**15**	**C**
attached		(1) Remain attached to the container in which the shellstock are received until the container is empty.		
retained 90 days		(2) Be maintained by retaining shellstock tags or labels for 90 calendar days from the date the container is emptied by using an approved record keeping system that keeps the tags or labels in chronologic order correlated to the date when the shellstock are served.		

7.3.3 Food Protection

7.3.3.1 Employee Contamination

wash hands

7.3.3.1.1 Food employees shall wash their hands. **12** **C**

RTE - hand contact prohibited

7.3.3.1.2 *Except when washing fruits and vegetables or when otherwise approved*, food employees may not contact exposed, ready-to-eat food with their bare hands and shall use suitable utensils such as deli tissue, spatulas, tongs, single-use gloves, or dispensing equipment. **12** **C**

not RTE contact minimized

7.3.3.1.3 Food employees shall minimize bare hand and arm contact with exposed food that is not in a ready-to-eat form. **12** **C**

tasting

7.3.3.1.4 A food employee shall not use a utensil more than once to taste food that is to be served. **12** **C**

7.3.3.2 Food and Ingredient Contamination

cross-contamination

7.3.3.2.1 Food shall be protected from cross-contamination by: **18** **C**

raw animal foods

(1) Physically separating raw animal foods during storage, preparation, holding, and display from raw ready-to-eat food including other raw animal food such as fish for sushi or molluscan shellfish, or other raw ready-to-eat food such as vegetables, and cooked ready-to-eat food; so products do not physically touch, and so as to prevent dripping of one product into another;

different species

(2) *Except when combined as ingredients*, separating types of raw animal foods from each other such as beef, fish, lamb, pork, and poultry during storage, preparation, holding, and display by using separate equipment for each type, or arranging each type of food in equipment so that cross-contamination of one type with another is prevented, and preparing each type of food at different times or in separate areas;

cleaning / sanitizing

(3) Cleaning and sanitizing equipment and utensils;

packaging / containers

(4) Storing the food in packages, covered containers, or wrappings;

cleaning containers

protecting

(5) Cleaning hermetically sealed containers of food of visible soil before opening;

containers		(6) Protecting food containers that are received packaged together in a case or overwrap from cuts when the case or overwrap is opened;		
damaged / spoiled		(7) Separating damaged, spoiled, or recalled food being held on the vessel; and		
raw / RTE vegetables		(8) Separating fruits and vegetables, before they are washed, from ready-to-eat food.		
	7.3.3.2.2	*Storing the food in packages, covered containers, or wrappings does not apply to:* *(1) Whole, uncut, raw fruits and vegetables and nuts in the shell, that require peeling or hulling before consumption;* *(2) Primal cuts, quarters, or sides of raw meat or slab bacon that are hung on clean, sanitized hooks or placed on clean, sanitized racks;* *(3) Whole, uncut, processed meats such as country hams, and smoked or cured sausages that are placed on clean, sanitized racks;* *(4) Food being cooled; or* *(5) Shellstock*.		
container identity	7.3.3.2.3	Working containers holding food or food ingredients that are removed from their original packages for use on the vessel, such as cooking oils, flour, herbs, potato flakes, salt, spices, and sugar shall be identified with the common name of the food. *Containers holding food that can be readily and unmistakably recognized such as dry pasta need not be identified*.	19	
pasteurized eggs	**7.3.3.2.4**	Pasteurized eggs or egg products shall be substituted for raw shell eggs in the preparation of foods such as Caesar salad, hollandaise, or Béarnaise sauce, mayonnaise, eggnog, ice cream, and egg-fortified beverages that are not cooked.	**18**	**C**
wash fruits / vegetables	7.3.3.2.5	Raw fruits and vegetables shall be thoroughly washed in water to remove soil and other contaminants before being cut, combined with other ingredients, cooked, served, or offered for human consumption in ready-to-eat form.	19	

vegetable washes	7.3.3.2.6	*Fruits and vegetables may be washed by using chemicals specified under 21 CFR 173.315.*		
	7.3.3.3	**Ice as Coolant**		
ice used as a coolant	7.3.3.3.1	After use as a medium for cooling the exterior surfaces of food such as melons or fish, packaged foods such as canned beverages or cooling coils and tubes of equipment, ice may not be used as food.	19	
coolant	7.3.3.3.2	Packaged food may not be stored in direct contact with ice or water if the food is subject to the entry of water because of the nature of its packaging, wrapping, or container, or its positioning in the ice or water.	19	
undrained ice	7.3.3.3.3	Except as specified below, unpackaged food may not be stored in direct contact with undrained ice.	19	
raw fruit / vegetables	7.3.3.3.4	*Whole, raw fruits or vegetables; cut, raw vegetables such as celery or carrot sticks, or cut potatoes; and tofu may be immersed in ice or water.*		
raw chicken / fish	7.3.3.3.5	*Raw chicken and raw fish that are received immersed in ice in shipping containers may remain in that condition while in storage awaiting preparation, display, or service.*		
	7.3.3.4	**Equipment, Utensils, and Linens**		
cleaned and sanitized	**7.3.3.4.1**	Food shall only contact surfaces of equipment and utensils that are cleaned and sanitized.	**26**	**C**
storage during use	7.3.3.4.2	During pauses in food preparation or dispensing, food preparation and dispensing utensils shall be stored:	19	
handles out		(1) In the food with their handles above the top of the food and the container;		
storage bins		(2) In food that is not potentially hazardous with their handles above the top of the food within containers or equipment that can be closed, such as bins of sugar, flour, or cinnamon;		
clean surfaces		(3) On a clean portion of the food preparation table or cooking equipment only if the in-use utensil and the food-contact surface of the food preparation table or cooking equipment are frequently cleaned and sanitized;		
running water		(4) In running water of sufficient velocity to flush		

		particulates to the drain, if used with moist food such as ice cream or mashed potatoes;	
ice scoops		(5) In a clean, protected location if the utensils, such as ice scoops, are used only with a food that is not potentially hazardous; or	
heated water		(6) In a container of water if the water is maintained at a temperature of at least 60°C (140°F) and the container is frequently cleaned and sanitized.	
linens / napkins	7.3.3.4.3	Linens and napkins may not be used in contact with food *unless they are used to line a container for the service of foods and the linens and napkins are replaced each time the container is refilled for a new consumer.*	19
wiping cloths	7.3.3.4.4	Wiping cloths shall be restricted to the following:	25
no other purpose		(1) Cloths that are in use for wiping food spills shall be used for no other purpose.	
dry or stored in sanitizer		(2) Cloths used for wiping food spills shall be dry and used for wiping food spills from tableware and single-service articles or wet and cleaned, stored in a chemical sanitizer, and used for wiping spills from food-contact and nonfood-contact surfaces of equipment.	
separate for raw		(3) Dry or wet cloths that are used with raw animal foods shall be kept separate from cloths used for other purposes, and wet cloths used with raw animal foods shall be kept in a separate sanitizing solution.	
clean solution		(4) Wet wiping cloths used with a freshly made sanitizing solution and dry wiping cloths shall be free of food debris and visible soil.	
gloves	7.3.3.4.5	Gloves shall be used as follows:	19
one task / discard		(1) If used, single-use gloves shall be used for only one task such as working with ready-to-eat food or with raw animal food, used for no other purpose, and discarded when damaged or soiled or when interruptions occur in the operation.	
slash-resistant		(2) Slash-resistant gloves that are used to protect the hands during operations requiring cutting shall be used in direct contact only with food that is subsequently cooked such as frozen food or a primal cut of meat.	

covered when RTE food prep

(3) *Slash-resistant gloves may be used with ready-to-eat food that will not be subsequently cooked if the slash-resistant gloves have a smooth, durable, and nonabsorbent outer surface; or if the slash-resistant gloves are covered with a smooth, durable, nonabsorbent glove or a single-use glove.*

cloth gloves

(4) Cloth gloves may not be used in direct contact with food unless the food is subsequently cooked such as frozen food or a primal cut of meat.

second portions and refills

7.3.3.4.6 Procedures for second portions and refills shall be as follows: 19

soiled tableware

(1) Except for refilling a consumer's drinking cup or container without contact between the pouring utensil and the lip-contact area of the drinking cup or container, food employees may not use tableware, including single-service articles, soiled by the consumer, to provide second portions or refills.

self-service

(2) Except as specified below, self-service consumers may not be allowed to use soiled tableware, including single-service articles, to obtain additional food from the display and serving equipment.

(3) *Drinking cups and containers may be reused by self-service consumers if refilling is a contamination-free process*.

7.3.3.5 Food Storage and Preparation

storage protection

7.3.3.5.1 Food shall be protected from contamination by storing the food: 19

clean dry

(1) In a clean, dry location;

not exposed

(2) Where it is not exposed to splash, dust, or other contamination; and

above deck

(3) At least 15 centimeters (6 inches) above the deck.

prohibited storage

7.3.3.5.2 Food may not be stored: 19

(1) In locker rooms;

(2) In toilet rooms;

(3) In dressing rooms;

(4) In garbage rooms;

(5) In mechanical rooms;

(6) Under sewer lines that are not continuously sleeve welded;

(7) Under leaking water lines, including leaking automatic fire sprinkler heads, or under lines on which water has condensed;

(8) Under open stairwells; or

(9) Under other sources of contamination from nonfood items such as ice blocks, ice carvings and flowers.

PHF packages in vending machines	7.3.3.5.3	Potentially hazardous food dispensed through a vending machine shall be in the package in which it was placed at the galley or food-processing plant at which it was prepared.	19
preparation	7.3.3.5.4	During preparation, unpackaged food shall be protected from environmental sources of contamination such as rain.	19

7.3.3.6 Food Display and Service

display protection	7.3.3.6.1	Food on display shall be protected from contamination by the use of packaging; counter, service line, or salad bar food guards; display cases; or other effective means.	19
condiments	7.3.3.6.2	Condiments shall be protected from contamination:	19

(1) By being kept in dispensers that are designed to provide protection, protected food displays provided with the proper utensils, original containers designed for dispensing, or individual packages or portions; and

(2) Condiments at a vending machine location shall be in individual packages or provided in dispensers that are filled at an approved location, such as the galley that provides food to the vending machine location, a food-processing plant, or a properly equipped facility that is located on the site of the vending machine location.

consumer	7.3.3.6.3	Consumer self-service operations, such as salad bars and	19

self-service

buffets, for unpackaged ready-to-eat foods:

(1) Shall be provided with suitable utensils or effective dispensing methods that protect the food from contamination; and

(2) Shall be monitored by food employees trained in safe operating procedures.

food re-service **7.3.3.6.4** After being served and in the possession of a consumer, food that is unused or returned by the consumer: **15** **C**

(1) May not be offered as food for human consumption.

(2) Except *a container of food that is not potentially hazardous may be transferred from one consumer to another if the food is dispensed so that it is protected from contamination and the container is closed between uses, such as a narrow-neck bottle containing catsup, steak sauce, or wine; or the food, such as crackers, salt, or pepper, is in an unopened original package and is maintained in sound condition*.

7.3.3.7 Other Contamination

other contaminants 7.3.3.7.1 Food shall be protected from contamination that may result from a factor or source such as seawater, bilge water, or hydraulic or fuel lines. 19

7.3.4 Pathogen Destruction

7.3.4.1 Cooking Temperatures / Times

cooking **7.3.4.1.1** Raw animal foods such as eggs, fish, meat, poultry, and foods containing these raw animal foods, shall be cooked to heat all parts of the food to a temperature and for a time that complies with one of the following methods based on the food that is being cooked: **16** **C**

63°C / 145° F

(1) 63°C (145°F) or above for 15 seconds for raw shell eggs that are broken and prepared in response to consumers' orders and for immediate service, and fish, meat, and pork including game animals commercially raised for food and game animals under a voluntary inspection program;

68°C / 155° F

(2) 68°C (155°F) for 15 seconds or equivalent temperature-time combination for ratites and injected meats; the following if they are comminuted: fish, meat, game animals commercially raised for food, and game animals under a voluntary inspection program; and raw eggs that are not prepared for immediate service; or

74°C / 165°F

(3) 74°C (165°F) or above for 15 seconds for poultry, wild game animals not specified in (2), stuffed fish, stuffed meat, stuffed pasta, stuffed poultry, stuffed ratites, or stuffing containing fish, meat, poultry, or ratites.

roasts

(4) Whole beef roasts, corned beef roasts, pork roasts, and cured pork roasts such as ham, shall be cooked to 63°C (145°F) or above for 15 seconds or to equivalent temperature-time combination in ovens operated in accordance with the specifications in Annex 13.6.

beef steaks

(5) *A raw or undercooked whole-muscle, intact beef steak may be served or offered for sale in a ready-to-eat form if the steak is labeled to indicate that it meets the definition of "whole-muscle, intact beef;" and the steak is cooked on both the top and bottom to a surface temperature of 63°C (145°F) or above and a cooked color change is achieved on all external surfaces.*

raw / lightly cooked

(6) *A raw animal food such as raw fish, raw-marinated fish, raw molluscan shellfish, or steak tartare; or a partially cooked food such as lightly cooked fish, soft cooked eggs, or rare meat other than whole-muscle, intact beef steaks, may be served or offered for sale in a ready-to-eat form if the consumer is informed by the written consumer advisory; or the VSP grants a variance from the cooking recommendations based on a HACCP plan that is submitted by the vessel and approved. The HACCP plan must document scientific data or other information showing that a lesser time and temperature regimen results in a safe food. The HACCP plan must verify that equipment and procedures for food preparation and training of food employees meet the conditions of the variance.*

microwave	**7.3.4.1.2**	Raw animal foods cooked in a microwave oven shall be: (1) Rotated or stirred throughout or midway during cooking to compensate for uneven distribution of heat; (2) Covered to retain surface moisture; (3) Heated to a temperature of at least 74°C (165°F) in all parts of the food; and (4) Allowed to stand covered for 2 minutes after cooking to obtain temperature equilibrium.	**16**	**C**
fruits / vegetables	7.3.4.1.3	Fruits and vegetables that are cooked for hot holding shall be cooked to a temperature of 60°C (140°F).	17	
	7.3.4.2	**Parasite Destruction**		
parasite destruction	**7.3.4.2.1**	Before service in ready-to-eat form, raw, raw-marinated, partially cooked, or marinated-partially cooked fish other than molluscan shellfish: (1) Shall be frozen throughout to a temperature of -20°C (-4°F) or below for 168 hours (7 days) in a freezer; or -35°C (-31°F) or below for 15 hours in a blast freezer. (2) *If the fish are tuna of the species Thunnus alalunga, T. albacares (yellowfin tuna), T. atlanticus, T. maccoyii (bluefin tuna, southern), T. obesus (bigeye tuna), or T. thynnus (bluefin tuna, northern), the fish may be served in a raw, raw-marinated, or partially cooked ready-to-eat form without freezing.* (3) *If foods, such as unpasteurized caviar, gravlax, savichi, carpaccio, or sushimi, are prepared in a food processing plant and certified as parasite free, they may be served raw, raw-marinated, or partially cooked ready-to-eat without freezing the product on-board the vessel*.	**16**	**C**
records	7.3.4.2.2	If raw, raw-marinated, partially cooked, or marinated-partially cooked fish are served in ready-to-eat form: (1) The person in charge shall record the freezing temperature and time to which the fish are subjected and shall retain the records on the vessel for 90 calendar days beyond the time of service or sale of the fish; or	17	

(2) If the fish are frozen by a supplier, a written agreement or statement from the supplier stipulating that the fish supplied are frozen to a safe temperature and a time.

7.3.4.3 Reheating

immediate service	7.3.4.3.1	*Cooked and refrigerated food that is prepared for immediate service in response to an individual consumer order, such as a roast beef sandwich au jus, may be served at any temperature.*		
74°C / 165°F	**7.3.4.3.2**	Potentially hazardous food that is cooked, cooled, and reheated for hot holding shall be reheated so that all parts of the food reach a temperature of at least 74°C (165°F) for 15 seconds.	**16**	**C**
microwave reheating	**7.3.4.3.3**	If reheated in a microwave oven for hot holding, potentially hazardous food shall be reheated so that all parts of the food reach a temperature of at least 74°C (165°F) and the food is rotated or stirred, covered, and allowed to stand covered for 2 minutes after reheating.	**16**	**C**
commercial products	7.3.4.3.4	Ready-to-eat potentially hazardous food taken from a commercially processed, hermetically sealed container, or from an intact package from a food processing plant that is inspected by the food regulatory authority that has jurisdiction over the plant, shall be heated to a temperature of at least 60°C (140°F) for hot holding.	17	
rapid reheat	**7.3.4.3.5**	Reheating for hot holding shall be done rapidly and the time the food is between 5°C (41°F) and 74°C (165°F) may not exceed 2 hours.	**16**	**C**
reheat once	7.3.4.3.6	Potentially hazardous food may not be reheated more than once.	17	
reheat roast beef	7.3.4.3.7	*Remaining unsliced portions of roasts of beef that are cooked on the vessel may be reheated for hot holding using the oven parameters and minimum time and temperature conditions used in the original cooking process.*		

7.3.5 Food Holding Temperatures and Times

7.3.5.1 Frozen, Slacking and Thawing Procedures

frozen	7.3.5.1.1	Stored frozen foods shall be maintained frozen.	17

slacking	7.3.5.1.2	Frozen potentially hazardous food that is slacked to moderate the temperature shall be held: (1) Under refrigeration that maintains the food temperature at 5°C (41°F) or less; or (2) At any temperature if the food remains frozen.	17	
thawing under: *refrigeration* *running water* *cooking / microwave*	7.3.5.1.3	Potentially hazardous food shall be thawed: (1) Under refrigeration that maintains the food temperature at 5°C (41°F) or less; or (2) Completely submerged under running water at a water temperature of 21°C (70°F) or below, with sufficient water velocity to agitate and float off loose particles in an overflow, and for a period of time that does not allow thawed portions of ready-to-eat food to rise above 5°C (41°F), or for a period of time that does not allow thawed portions of a raw animal food requiring cooking to be above 5°C (41°F) for more than 4 hours including the time the food is exposed to the running water, the time needed for preparation for cooking, or the time it takes under refrigeration to lower the food temperature to 5°C (41°F); or (3) As part of a cooking process if the food that is frozen is cooked, or thawed in a microwave oven. (4) *Using any procedure if a portion of frozen ready-to-eat food is thawed and prepared for immediate service in response to an individual consumer's order*.	17	
	7.3.5.2	**Food Cooling**		
cooling times / temperatures	**7.3.5.2.1**	Cooked potentially hazardous food shall be cooled: (1) Within 2 hours, from 60°C (140°F) to 21°C (70°F); and (2) Within 4 hours, from 21°C (70°F) to 5°C (41°F) or less.	**16**	**C**
cooling prepared food	**7.3.5.2.2**	Potentially hazardous food shall be cooled within 4 hours to 5°C (41°F) or less, if prepared from ingredients at ambient temperature, such as reconstituted foods and canned tuna.	**16**	**C**

cooling received food	**7.3.5.2.3**	A potentially hazardous food received in compliance with laws allowing a temperature above 5°C (41°F) during shipment from the supplier shall be cooled within 4 hours to 5°C (41°F) or less.	**16**	**C**
	7.3.5.2.4	*Shell eggs need not comply with the cooling time if the eggs are placed immediately upon their receipt in refrigerated equipment that is capable of maintaining food at 5°C (41°F) or less*.		
	7.3.5.2.5	Cooling shall be accomplished using one or more of the following methods based on the type of food being cooled:	17	
cooling methods		(1) Placing the food in shallow pans; separating the food into smaller or thinner portions; using blast coolers, freezers, or other rapid cooling equipment; stirring the food in a container placed in an ice water bath; using containers that facilitate heat transfer; adding ice as an ingredient; or other effective methods.		
arrangement		(2) When placed in cooling or cold-holding equipment, food containers in which food is being cooled shall be arranged in the equipment to provide maximum heat transfer through the container walls; and loosely covered, or uncovered if protected from overhead contamination, during the cooling period to facilitate heat transfer from the surface of the food.		
	7.3.5.3	**Food Holding Temperatures and Times**		
holding temperature / time	**7.3.5.3.1**	*Except during preparation, cooking, or cooling, or when time is used as the public health control*, potentially hazardous food shall be maintained:	**16**	**C**
60°C / 140°F		(1) At 60°C (140°F) or above, *except that roasts may be held at a temperature of 54°C (130°F)*; or		
5°C / 41°F		(2) At 5°C (41°F) or less.		
RTE PHF shelf-life:	**7.3.5.3.2**	Refrigerated, ready-to-eat, potentially hazardous food:	**16**	**C**
prepared on vessel		(1) Prepared on a vessel and held refrigerated for more than 24 hours shall be clearly marked at the time of preparation to indicate the date by which the food shall be consumed, which is, including the day of preparation, 7 calendar days or fewer from the day the food is prepared.		

from food-processing plant		(2) A container of refrigerated, ready-to-eat potentially hazardous food prepared and packaged by a food processing plant shall be clearly marked, at the time the original container is opened, to indicate the date by which the food shall be consumed which is, including the day the original container is opened, 7 calendar days or fewer after the original container is opened.		
discarding RTE PHF	**7.3.5.3.3**	Refrigerated, ready-to-eat, potentially hazardous food shall be discarded if not consumed within 7 calendar days from the date of preparation or opening.	**16**	**C**
retain date	**7.3.5.3.4**	A refrigerated, potentially hazardous, ready-to-eat food ingredient or a portion of a refrigerated, potentially hazardous, ready-to-eat food that is subsequently combined with additional ingredients or portions of food shall retain the date marking of the earliest or first-prepared ingredient.	**16**	**C**
time as a public health control	**7.3.5.3.5**	If time only, rather than time in conjunction with temperature, is used as the public health control for a working supply of potentially hazardous food before cooking, or for ready-to-eat potentially hazardous food that is displayed or held for service for immediate consumption: (1) The food shall be marked or otherwise identified to indicate the time that is 4 hours past the point in time when the food is removed from temperature control; (2) The food shall be cooked and served, served if ready-to-eat, or discarded, within 4 hours from the time when the food is removed from temperature control; and (3) The food in unmarked containers or packages or marked to exceed a 4 hour limit shall be discarded.	**16**	**C**
written procedures	**7.3.5.3.6**	Written procedures that ensure compliance with these guidelines shall be maintained on the vessel and made available to the VSP, upon request.	**16**	**C**
day stores	**7.3.5.3.7**	Refrigerated, ready-to-eat, potentially hazardous food may be held at 7°C (45°F) up to 24 hours in existing short term holding refrigeration equipment provided:	**16**	**C**
designation label		(1) The equipment is designated by a permanent label affixed to it indicating the maximum allowable product temperature is 7°C (45°F) and the maximum allowable		

storage time is 24 hours;

container labeling

(2) All containers of potentially hazardous foods placed in the unit must be labeled with a date and time by which food shall be used or discarded;

pre-cooled PHF

(3) Potentially hazardous foods when placed in the equipment shall be at 5°C (41°F) or less; and

replacement

(4) When the equipment is upgraded or replaced, it shall be with equipment that can maintain the potentially hazardous food at 5°C (41°F) or less.

7.3.6 Consumer Information

7.3.6.1 Advisory

consumer advisory

7.3.6.1.1 If an animal food such as beef, eggs, fish, lamb, milk, pork, poultry, or shellfish that is raw, undercooked, or not otherwise processed to eliminate pathogens is offered in a ready-to-eat form or as a raw ingredient in another ready-to-eat food, the passengers shall be informed by vessel newsletter articles, brochures, embarkation television broadcasts, menu advisories, placards, or other written means of the significantly increased risk to certain especially vulnerable consumers eating such foods in raw or undercooked form. **16** **C**

7.3.7 Contaminated Food

7.3.7.1 Discarding Food

unsafe / adulterated

7.3.7.1.1 A food that is unsafe or adulterated shall be discarded. **18** **C**

unapproved source

7.3.7.1.2 Food that is not from an approved source shall be discarded. **18** **C**

restricted or excluded employee

7.3.7.1.3 Ready-to-eat food that may have been contaminated by an employee who has been restricted or excluded for food employee health issues shall be discarded. **18** **C**

contaminated by others

7.3.7.1.4 Food that is contaminated by food employees, consumers, or other persons through contact with their hands; bodily discharges, such as nasal or oral discharges; or other means shall be discarded. **18** **C**

7.4 Equipment and Utensils

7.4.1 Materials

7.4.1.1 Multiuse Characteristics and Use Limitations

safe food-contact materials	**7.4.1.1.1**	Materials that are used in the construction of multiuse utensils and food-contact surfaces of equipment may not allow the migration of deleterious substances or impart colors, odors, or tastes to food and under normal use conditions shall be safe.	**26**	**C**
food-contact surfaces	7.4.1.1.2	Materials that are used in the construction of multiuse utensils and food-contact surfaces of equipment shall be: (1) Durable, corrosion-resistant, and nonabsorbent; (2) Sufficient in weight and thickness to withstand repeated warewashing; (3) Finished to have a smooth, easily cleanable surface; and (4) Resistant to pitting, chipping, crazing, scratching, scoring, distortion, and decomposition.	20	
cast iron	7.4.1.1.3	Cast iron may not be used for utensils or food-contact surfaces of equipment. *Cast iron may be used as a surface for cooking. Cast iron may be used in utensils for serving food if the utensils are used only as part of an uninterrupted process from cooking through service.*	20	
lead	7.4.1.1.4	Limitation of lead use shall be as follows: (1) Ceramic, china, crystal utensils, and decorative utensils such as hand painted ceramic or china that are used in contact with food shall be lead-free or contain levels of lead not exceeding the limits for specific utensil categories as allowed by law. (2) Pewter alloys containing lead in excess of 0.05% may not be used as a food-contact surface. (3) Solder and flux containing lead in excess of 0.2% may not be used as a food-contact surface.	20	
copper / brass	**7.4.1.1.5**	Copper and copper alloys such as brass:	**26**	**C**

		(1) May not be used in contact with a food that has a pH below 6 such as vinegar, fruit juice, or wine or for a fitting or tubing installed between a backflow prevention device and a carbonator. (2) *Copper and copper alloys may be used in contact with beer brewing ingredients that have a pH below 6 in the prefermentation and fermentation steps of a beer brewing operation such as a brewpub or microbrewery.*		
galvanized	**7.4.1.1.6**	Galvanized metal may not be used for utensils or food-contact surfaces of equipment that are used in contact with acidic food.	**26**	**C**
wood	7.4.1.1.7	Wood use shall be limited as follows: (1) Wood and wood wicker may not be used as a food-contact surface. (2) *Hard maple or an equivalently hard, close-grained wood may be used for cutting boards; cutting blocks; bakers' tables; and utensils such as rolling pins, doughnut dowels, salad bowls, and chopsticks; and wooden paddles used in confectionery operations for pressure scraping kettles when manually preparing confections at a temperature of 110°C (230°F) or above.* (3) *Whole, uncut, raw fruits and vegetables, and nuts in the shell may be kept in the wood shipping containers in which they were received, until the fruits, vegetables, or nuts are used.* (4) *If the nature of the food requires removal of rinds, peels, husks, or shells before consumption, the whole, uncut, raw food may be kept in untreated wood containers; or treated wood containers if the containers are treated with a preservative that meets the requirements specified in 21 CFR 178.3800 Preservatives for Wood.*	20	
coatings	7.4.1.1.8	Multiuse kitchenware such as frying pans, griddles, sauce pans, cookie sheets, and waffle bakers that have a perfluorocarbon resin coating shall be used with nonscoring or nonscratching utensils and cleaning aids.	20	
nonfood-contact surfaces	7.4.1.1.9	Nonfood-contact surfaces of equipment that are exposed to splash, spillage, or other food soiling or that require frequent cleaning shall be constructed of a corrosion-	21	

resistant, nonabsorbent, and smooth material.

7.4.1.2 Single-Service and Single-Use Characteristics

single-service / use materials - safe	**7.4.1.2.1**	Materials that are used to make single-service and single-use articles shall not allow the migration of deleterious substances and shall be safe.	**26**	**C**
no colors / odors / taste	7.4.1.2.2	Materials that are used to make single-service and single-use articles shall not impart colors, odors, or tastes to food and shall be clean.	20	

7.4.2 Design and Construction

7.4.2.1 Durability and Strength

food-contact durability / strength	7.4.2.1.1	Food contact surfaces of equipment and utensils shall be designed and constructed to be durable and to retain their characteristic qualities under normal use conditions.	20	
nonfood-contact durability / strength	7.4.2.1.2	Nonfood-contact surfaces of equipment and utensils shall be designed and constructed to be durable and to retain their characteristic qualities under normal use conditions.	21	
glass TMDs	**7.4.2.1.3**	Food temperature measuring devices may not have sensors or stems constructed of glass, *except that thermometers with glass sensors or stems that are encased in a shatterproof coating such as candy thermometers may be used*.	**26**	**C**

7.4.2.2 Cleanability

multiuse food-contact surfaces	7.4.2.2.1	Multiuse food-contact surfaces shall be: (1) Smooth; (2) Free of breaks, open seams >1 mm (1/32 inch), cracks, chips, inclusions, pits, and similar imperfections; (3) Free of sharp internal angles, corners, and crevices; (4) Finished to have smooth welds and joints; and (5) Accessible for cleaning and inspection by one of the following methods without being disassembled, by	20	

		disassembling without the use of tools, or by easy disassembling with the use of handheld tools commonly available to maintenance and cleaning personnel such as screwdrivers, pliers, open-end wrenches, and Allen wrenches. *This section does not apply to cooking oil storage tanks, distribution lines for cooking oils, or beverage syrup lines or tubes*.	
CIP equipment design / construction	7.4.2.2.2	CIP equipment shall meet the following criteria: (1) It shall be designed and constructed so that cleaning and sanitizing solutions circulate throughout a fixed system and contact all interior food-contact surfaces, and the system is self-draining or capable of being completely drained of cleaning and sanitizing solutions; or (2) CIP equipment that is not designed to be disassembled for cleaning shall be designed with inspection access points to ensure that all interior food-contact surfaces throughout the fixed system are being effectively cleaned.	20
"V" type threads	7.4.2.2.3	*Except for hot oil cooking or filtering equipment*, "V" type threads may not be used on food-contact surfaces.	20
oil filtering equipment	7.4.2.2.4	Hot oil filtering equipment shall be readily accessible for filter replacement and cleaning of the filter.	20
can openers	7.4.2.2.5	Cutting or piercing parts of can openers shall be readily removable for cleaning and for replacement.	20
nonfood-contact design	7.4.2.2.6	Nonfood-contact surfaces shall be free of unnecessary ledges, projections, and crevices, and designed and constructed to allow easy cleaning and to facilitate maintenance.	21
kick plates	7.4.2.2.7	Kick plates shall be designed so that the areas behind them are accessible for inspection and cleaning by: (1) Being easily removable or capable of being rotated open; and (2) Being removable or capable of being rotated open without unlocking equipment doors.	21
grease filters	7.4.2.2.8	Filters or other grease extracting equipment shall be designed to be readily removable for cleaning and replacement if not designed to be cleaned in place.	21

7.4.2.3 Accuracy

food TMD accuracy 7.4.2.3.1 Food temperature measuring devices: 20

(1) That are scaled only in Celsius or dually scaled in Celsius and Fahrenheit shall be accurate to ±1°C in the intended range of use; and

(2) That are scaled only in Fahrenheit shall be accurate to ±2°F in the intended range of use.

ambient air TMD accuracy 7.4.2.3.2 Ambient air temperature measuring devices: 20

(1) That are scaled in Celsius or dually scaled in Celsius and Fahrenheit shall be designed to be easily readable and accurate to ±1.5°C in the intended range of use.

(2) That are scaled only in Fahrenheit shall be accurate to ±3°F in the intended range of use.

7.4.2.4 Functionality

ventilation hood design 7.4.2.4.1 Exhaust ventilation hood systems in food preparation and warewashing areas including components such as hoods, fans, guards, and ducting shall be designed to prevent grease or condensation from draining or dripping onto food, equipment, utensils, linens, and single-service and single-use articles. 37

equipment openings, closures, and deflectors 7.4.2.4.2 Equipment openings, closures and deflectors shall conform to: 20

(1) A cover or lid for equipment shall overlap the opening and be sloped to drain.

(2) An opening located within the top of a unit of equipment that is designed for use with a cover or lid shall be flanged upward at least 5 millimeters (2/10 of an inch).

(3) Fixed piping, temperature measuring devices, rotary shafts, and other parts extending into equipment shall be provided with a watertight joint at the point where the item enters the equipment.

(4) If a watertight joint is not provided, the piping, temperature measuring devices, rotary shafts, and other parts extending through the openings shall be equipped

with an apron designed to deflect condensation, drips, and dust from openings into the food; and the opening shall be flanged at least 5 millimeters (2/10 of an inch).

beverage / ice dispensing	7.4.2.4.3	In equipment that dispenses liquid food or ice in unpackaged form: (1) The delivery tube, chute, orifice, and splash surfaces directly above the container receiving the food shall be designed in a manner, such as with barriers, baffles, or drip aprons, so that drips from condensation and splash are diverted from the opening of the container receiving the food; (2) The delivery tube, chute, and orifice shall be protected from manual contact such as by being recessed; (3) The delivery tube or chute and orifice of equipment used to vend liquid food or ice in unpackaged form to self-service consumers shall be designed so that the delivery tube or chute and orifice are protected from dust, insects, rodents, and other contamination by a self-closing door if the equipment is located in an outside area that does not otherwise afford the protection of an enclosure against the rain, windblown debris, insects, rodents, and other contaminants that are present in the environment, or available for self-service during hours when it is not under the full-time supervision of a food employee; and (4) The dispensing equipment actuating lever or mechanism and filling device of consumer self-service beverage dispensing equipment shall be designed to prevent contact with the lip-contact surface of glasses or cups that are refilled.	20
bearings / gears	7.4.2.4.4	Equipment containing bearings and gears that require lubricants shall be designed and constructed so that the lubricant cannot leak, drip, or be forced into food or onto food-contact surfaces.	21
beverage line cooling	7.4.2.4.5	Beverage tubing and cold-plate beverage cooling devices may not be installed in contact with stored ice. *This guideline does not apply to cold plates that are constructed integrally without seams in an ice storage bin*.	20
equipment drainage	7.4.2.4.6	Equipment compartments that are subject to accumulation of moisture because of conditions such as condensation, food or beverage drip, or water from melting ice shall be	21

sloped to an outlet that allows complete draining.

drain lines	7.4.2.4.7	Liquid waste drain lines may not pass through an ice machine or ice storage bin.	20
condenser unit	7.4.2.4.8	If a condenser unit is an integral component of equipment, the condenser unit shall be separated from the food and food storage space by a dustproof barrier.	21
ambient air TMDs	7.4.2.4.9	Temperature measuring devices shall conform to the following guidelines: (1) In a mechanically refrigerated or hot-food storage unit, the sensor of a temperature measuring device shall be located to measure the air temperature in the warmest part of a mechanically refrigerated unit and in the coolest part of a hot-food storage unit. (2) Cold or hot holding equipment used for potentially hazardous food shall be designed to include and shall be equipped with at least one integral or affixed temperature measuring device that is located to allow easy viewing of the device's temperature display. (3) *The above section does not apply to equipment for which the placement of a temperature measuring device is not a practical means for measuring the ambient air surrounding the food because of the design, type, and use of the equipment, such as calrod units, heat lamps, cold plates, bains-marie, steam tables, insulated food transport containers, and salad bars*. (4) Temperature measuring devices shall be designed to be easily readable. (5) Food temperature measuring devices shall have a numerical scale, printed record, or digital readout in increments no greater than 1°C (2°F) in the intended range of use.	20

7.4.2.5 Food Equipment, Standards and Classification

food-contact equipment standards	7.4.2.5.1	Food-contact surfaces of food equipment shall comply with American National Standards Institute (ANSI) or other internationally accredited food-equipment sanitation standards for materials, design, and construction.	20

nonfood-contact equipment standards	7.4.2.5.2	Nonfood-contact surfaces of food equipment shall comply with American National Standards Institute (ANSI) or other internationally accredited food-equipment sanitation standards for materials, design, and construction.	21

7.4.3 Numbers and Capacities

7.4.3.1 Cooling, Heating, and Holding Capacities

cold / hot holding capacity	7.4.3.1.1	Equipment for cooling and heating food, and holding cold and hot food, shall be sufficient in number and capacity to maintain specified potentially hazardous food temperatures.	20

7.4.3.2 Ventilation Hood Systems

ventilation hood	7.4.3.2.1	Ventilation hood systems and devices shall be sufficient in number and capacity to prevent grease or condensation from collecting on bulkheads and deckheads.	37

7.4.3.3 Utensils, Consumer Self-Service

dispensing utensil	7.4.3.3.1	A food-dispensing utensil shall be available for each container displayed at a consumer self-service unit such as a buffet or salad bar.	19

7.4.3.4 Food Temperature Measuring Devices

food TMD	7.4.3.4.1	Food temperature measuring devices shall be provided and readily accessible for use in ensuring attainment and maintenance of food temperatures.	20

7.4.4 Equipment Location and Installation

7.4.4.1 Fixed Equipment, Spacing or Sealing

fixed equipment installation	7.4.4.1.1	Equipment that is fixed because it is not easily movable shall be installed so that it is: (1) Spaced to allow access for cleaning along the sides, behind, under and above the equipment; (2) Spaced from adjoining equipment, bulkhead, and deckhead at a distance of not more than 1 millimeter or	21

1/32 inch; or

(3) Sealed to adjoining equipment or bulkhead, if the equipment is exposed to spillage or seepage.

table-mounted sealed or elevated 7.4.4.1.2 Table-mounted equipment that is not easily movable shall be installed to allow cleaning of the equipment and areas underneath and around the equipment by being: 21

(1) Sealed to the table; or

(2) Elevated on legs.

7.4.4.2 Fixed Equipment, Elevation or Sealing

deck-mounted sealed or elevated 7.4.4.2.1 Deck-mounted equipment that is not easily movable shall be sealed to the deck or elevated on legs that provide at least a 15-centimeter (6-inch) clearance between the deck and the equipment. 21

deck-mounted clearance 7.4.4.2.2 *If no part of the deck under the deck-mounted equipment is more than 15 centimeters (6 inches) from the point of cleaning access, the clearance space may be only 10 centimeters (4 inches)*.

table-mounted elevated 7.4.4.2.3 Table-mounted equipment that is not easily movable shall be elevated on legs that provide at least a 10-centimeter (4-inch) clearance between the table and the equipment. 21

table-mounted clearance 7.4.4.2.4 *The clearance space between the table and table-mounted equipment may be*:

(1) *7.5 centimeters (3 inches) if the horizontal distance of the table top under the equipment is no more than 50 centimeters (20 inches) from the point of access for cleaning; or*

(2) *5 centimeters (2 inches) if the horizontal distance of the table top under the equipment is no more than 7.5 centimeters (3 inches) from the point of access for cleaning*.

7.4.5 Maintenance and Operation

7.4.5.1 Equipment

food-contact equipment in good repair

7.4.5.1.1 Food-contact equipment shall be maintained in good repair and proper adjustment including: 20

(1) Equipment shall be maintained in a state of repair and condition that meets the materials, design, construction, and operation specifications of these guidelines.

(2) Cutting or piercing parts of can openers shall be kept sharp to minimize the creation of metal fragments that can contaminate food when the container is opened.

nonfood-contact equipment in good repair

7.4.5.1.2 Nonfood-contact equipment shall be maintained in good repair and proper adjustment including: 21

(1) Equipment shall be maintained in a state of repair and condition that meets the materials, design, construction, and operation specifications of these guidelines.

(2) Equipment components such as doors, seals, hinges, fasteners, and kick plates shall be kept intact, tight, and adjusted in accordance with manufacturer's specifications.

cutting boards

7.4.5.1.3 Surfaces such as cutting blocks and boards that are subject to scratching and scoring shall be resurfaced if they no longer can be effectively cleaned and sanitized, or discarded if they are not capable of being resurfaced. 20

microwave ovens

7.4.5.1.4 Microwave ovens shall meet the safety standards specified in 21 CFR 1030.10 Microwave Ovens, or equivalent. 20

7.4.5.2 Good Repair and Calibration

utensils and TMDs in good repair and calibration

7.4.5.2.1 Utensils and temperature measuring devices shall be maintained in good repair and proper adjustment including: 20

(1) Utensils shall be maintained in a state of repair or condition that meets the materials, design and construction specifications of these guidelines or shall be discarded.

(2) Food temperature measuring devices shall be

calibrated in accordance with manufacturer's specifications as necessary to ensure their accuracy.

(3) Ambient air temperature measuring devices shall be maintained in good repair and be accurate within the intended range of use.

7.4.5.3 Single-Service and Single-Use Articles

reuse	7.4.5.3.1	Single-service and single-use articles may not be reused.	28
bulk milk tubes	7.4.5.3.2	The bulk milk container dispensing tube shall be cut on the diagonal leaving no more than 3 centimeters (1 inch) protruding from the chilled dispensing head.	20
shell reuse	7.4.5.3.3	Mollusk and crustacea shells may not be used more than once as serving containers.	28

7.5 Warewashing

7.5.1 [Reserved]

7.5.2 Warewashing Design and Construction

7.5.2.1 Warewashing Measuring Device Accuracy

water TMD accuracy 7.5.2.1.1 Water temperature measuring devices: 22

(1) That are scaled in Celsius or dually scaled in Celsius and Fahrenheit shall be designed to be accurate to ±1.5°C in the intended range of use.

(2) That are scaled only in Fahrenheit shall designed to be accurate to ±3°F in the intended range of use.

pressure gauge accuracy 7.5.2.1.2 Pressure measuring devices that display the pressures in the water supply line for the fresh hot water sanitizing rinse shall have increments of 7 kilopascals (1 pounds per square inch) or smaller and shall be accurate to ± 14 kilopascals (± 2 pounds per square inch) in the 100-170 kilopascals (15-25 pounds per square inch) range. 22

7.5.2.2 Warewashing Functionality

water TMD readable 7.5.2.2.1 Water temperature measuring devices shall be designed to be easily readable. 22

water TMD scale 7.5.2.2.2 Water temperature measuring devices on warewashing machines shall have a numerical scale, printed record, or digital readout in increments no greater than 1°C (2°F) in the intended range of use. 22

warewasher data plate 7.5.2.2.3 A warewashing machine shall be provided with an easily accessible and readable data plate affixed to the machine by the manufacturer that indicates the machine's design and operating specifications including the: 22

(1) Temperatures required for washing, rinsing, and sanitizing;

(2) Pressure required for the fresh water sanitizing rinse *unless the machine is designed to use only a pumped sanitizing rinse;* and

		(3) Conveyor speed for conveyor machines or cycle time for stationary rack machines.	
baffles / curtains	7.5.2.2.4	Warewashing machine wash and rinse tanks shall be equipped with baffles, curtains, or other means to minimize internal cross-contamination of the solutions in wash and rinse tanks.	22
warewash TMDs	7.5.2.2.5	A warewashing machine shall be equipped with a temperature measuring device that indicates the temperature of the water: (1) In each wash and rinse tank; and (2) As the water enters the hot water sanitizing final rinse manifold or in the chemical sanitizing solution tank.	22
sanitizer level alert	7.5.2.2.6	A warewashing machine that uses a chemical for sanitization and that is installed after adoption of these guidelines, shall be equipped with a device that indicates audibly or visually when more chemical sanitizer needs to be added.	22
pressure gauge	7.5.2.2.7	Warewashing machines that provide a fresh hot water sanitizing rinse: (1) Shall be equipped with a pressure gauge or similar device such as a transducer that measures and displays the water pressure in the supply line immediately before entering the warewashing machine; and (2) If the flow pressure measuring device is upstream of the fresh hot water sanitizing rinse control valve, the device shall be mounted in a 6.4 mm (1/4 inch) Iron Pipe Size (IPS) valve. (3) *These guidelines do not apply to a machine that uses only a pumped or recirculated sanitizing rinse.*	22
manual sanitizing booster heater / baskets	7.5.2.2.8	If hot water is used for sanitization in manual warewashing operations, the sanitizing compartment of the sink shall be: (1) Designed with an integral heating device that is capable of maintaining water at a temperature not less than 77°C (171°F); and (2) Provided with a rack or basket to allow complete	22

immersion of equipment and utensils into the hot water.

self-draining 7.5.2.2.9 Sinks and drainboards of warewashing sinks and machines shall be self-draining. 22

7.5.3 Warewashing Numbers and Capacities

7.5.3.1 Three-Compartment Sinks

3-compartment sink 7.5.3.1.1 A sink with at least 3 compartments shall be provided for manually washing, rinsing, and sanitizing equipment and utensils. 22

size 7.5.3.1.2 Sink compartments shall be large enough to accommodate immersion of the largest equipment and utensils. If equipment or utensils are too large for the warewashing sink, a warewashing machine or alternative equipment, such as a 3-bucket system, shall be used. 22

manual warewashing alternatives 7.5.3.1.3 *Alternative manual warewashing equipment may be used when there are special cleaning needs or constraints and its use is approved. Alternative manual warewashing equipment may include:*

(1) *High-pressure detergent sprayers;*

(2) *Low- or line-pressure spray detergent foamers;*

(3) *Other task-specific cleaning equipment;*

(4) *Brushes or other implements;*

(5) *Receptacles such as a 3-bucket system that substitute for the compartments of a 3-compartment sink.*

7.5.3.2 Drainboards

soiled / clean storage 7.5.3.2.1 Drainboards, utensil racks, or tables large enough to accommodate all soiled and cleaned items that may accumulate during hours of operation shall be provided for necessary utensil holding before cleaning and after sanitizing. 22

7.5.3.3 Sanitizing Solutions, Testing Devices

test kit

7.5.3.3.1 A test kit or other device that accurately measures the concentration in mg/L (ppm) of sanitizing solutions shall be provided. 22

7.5.4 Warewashing Equipment Maintenance and Operation

7.5.4.1 Good Repair and Proper Adjustment

warewash equipment repair

7.5.4.1.1 Warewashing equipment shall be maintained in good repair and proper adjustment including: 22

(1) Warewashing equipment shall be maintained in a state of repair and condition that meets the standards of the materials, design, and construction of these guidelines.

(2) Water pressure, and water temperature measuring devices shall be maintained in good repair and be accurate within the intended range of use.

warewash equipment cleaning

7.5.4.1.2 A warewashing machine; the compartments of sinks, basins, or other receptacles used for washing and rinsing equipment, utensils, or raw foods, or laundering wiping cloths; and drainboards shall be cleaned: 22

(1) Before use;

(2) Throughout the day at a frequency necessary to prevent recontamination of equipment and utensils and to ensure that the equipment performs its intended function; and

(3) If used, at least every 24 hours.

warewash equipment operation

7.5.4.1.3 A warewashing machine and its auxiliary components: 22

(1) Shall be operated in accordance with the machine's data plate and other manufacturer's instructions.

(2) A warewashing machine's conveyor speed or automatic cycle times shall be maintained accurately timed in accordance with manufacturer's specifications.

cleaners	7.5.4.1.4	When used for warewashing, the wash compartment of a sink, mechanical warewasher, or wash receptacle of alternative manual warewashing equipment shall contain a wash solution of soap, detergent, acid cleaner, alkaline cleaner, degreaser, abrasive cleaner, or other cleaning agent according to the cleaning agent manufacturer's label instructions.	22	
solution clean	7.5.4.1.5	The wash, rinse, and sanitize solutions shall be maintained clean.	22	
	7.5.4.2	**Wash Temperatures**		
manual wash temperature	7.5.4.2.1	The temperature of the wash solution in manual warewashing equipment shall be maintained at not less than the temperature specified on the cleaning agent manufacturer's label instructions.	23	
warewash wash temperatures	7.5.4.2.2	The temperature of the wash solution in spray type warewashers that use hot water to sanitize may not be less than: (1) For a stationary-rack, single-temperature machine, 74°C (165°F); (2) For a stationary-rack, dual-temperature machine, 66°C (150°F); (3) For a single-tank, conveyor, dual-temperature machine, 71°C (160°F); or (4) For a multitank, conveyor, multitemperature machine, 66°C (150°F).	23	
wash temperatures for chemical machines	7.5.4.2.3	The temperature of the wash solution in spray-type warewashers that use chemicals to sanitize may not be less than 49°C (120°F).	23	
	7.5.5	**Cleaning Equipment and Utensils**		
	7.5.5.1	**Cleaning Frequency**		
food-contact surfaces clean	**7.5.5.1.1**	Food-contact surfaces of equipment and utensils shall be clean to sight and touch.	**26**	**C**

encrusted	**7.5.5.1.2**	The food-contact surfaces of cooking equipment and pans shall be kept free of encrusted grease deposits and other soil accumulations.	**26**	**C**
nonfood-contact surfaces	7.5.5.1.3	Nonfood-contact surfaces of equipment shall be kept free of an accumulation of dust, dirt, food residue, and other debris.	27	
food-contact cleaning frequency	**7.5.5.1.4**	Equipment food-contact surfaces and utensils shall be cleaned: (1) Before each use with a different type of raw animal food such as beef, fish, lamb, pork, or poultry; (2) Each time there is a change from working with raw foods to working with ready-to-eat foods; (3) Between uses with raw fruits and vegetables and with potentially hazardous food; (4) Before using or storing a food temperature measuring device; and (5) At any time during the operation when contamination might have occurred.	**26**	**C**
in-use food-contact equipment	7.5.5.1.5	If used with potentially hazardous food, equipment food-contact surfaces and utensils used on a continuing basis shall be cleaned throughout the day at least every 4 hours.	28	
dispensing equipment cleaning	7.5.5.1.6	Cleaning of equipment such as ice bins and beverage dispensing nozzles and enclosed components of equipment such as ice makers, cooking oil storage tanks, and distribution lines, beverage, and syrup dispensing lines or tubes, and coffee bean grinders shall be conducted: (1) At a frequency specified by the manufacturer, or (2) Absent manufacturer specifications, at a frequency necessary to preclude accumulation of soil or mold.	28	
cooking / baking equipment cleaning	7.5.5.1.7	Cooking and baking equipment shall be cleaned as follows: (1) The food-contact surfaces of cooking and baking equipment shall be cleaned at least every 24 hours.	28	

(2) The cavities and door seals of microwave ovens shall be cleaned at least every 24 hours by using the manufacturer's recommended cleaning procedure.

7.5.5.2 Dry Cleaning Methods

dry cleaning 7.5.5.2.1 Dry cleaning shall be accomplished as follows: 28

(1) If used, dry cleaning methods such as brushing, scraping, and vacuuming shall contact only surfaces that are soiled with dry food residues that are not potentially hazardous.

(2) Cleaning equipment used in dry cleaning food-contact surfaces may not be used for any other purpose.

7.5.5.3 Precleaning and Racking

precleaning / scrapping 7.5.5.3.1 Food debris on equipment and utensils, shall be scrapped over a waste disposal unit, pulper, or garbage receptacle or shall be removed in a warewashing machine with a prewash cycle. 23

presoak / scrubbed 7.5.5.3.2 If necessary for effective cleaning, utensils, and equipment shall be preflushed, presoaked, or scrubbed with abrasives. 23

racking 7.5.5.3.3 Soiled items to be cleaned in a warewashing machine shall be loaded into racks, trays, or baskets or onto conveyors in a position that: 22

(1) Exposes the items to the unobstructed spray from all cycles; and

(2) Allows the items to drain.

7.5.5.4 Wet Cleaning

washing 7.5.5.4.1 Equipment food-contact surfaces and utensils shall be effectively washed to remove or completely loosen soils by using the manual or mechanical means necessary such as the application of detergents containing wetting agents and emulsifiers; acid, alkaline, or abrasive cleaners; hot water; brushes; scouring pads; high-pressure sprays; or ultrasonic devices. 23

soil-specific 7.5.5.4.2 The washing procedures selected shall be based on the type and purpose of the equipment or utensil, and on the type of soil to be removed. 22

7.5.5.5 Alternative Manual Warewashing Procedures

alternative warewashing procedures 7.5.5.5.1 If washing in sink compartments or a warewashing machine is impractical such as when the equipment is fixed or the utensils are too large, washing shall be done by using alternative manual warewashing equipment in accordance with the following procedures: 23

(1) Equipment shall be disassembled as necessary to allow access of the detergent solution to all parts;

(2) Equipment components and utensils shall be scrapped or rough-cleaned to remove food particle accumulation; and

(3) Equipment and utensils shall be washed.

sponges limited 7.5.5.5.2 Sponges may not be used in contact with cleaned and sanitized or in-use food-contact surfaces. 22

7.5.5.6 Rinsing Procedures

rinsing 7.5.5.6.1 Washed utensils and equipment shall be rinsed so that abrasives are removed and cleaning chemicals are removed or diluted through the use of water by using one of the following procedures: 23

(1) Use of a distinct, separate water rinse after washing and before sanitizing if using a 3-compartment sink, alternative manual warewashing equipment equivalent to a 3-compartment sink, or a 3-step washing, rinsing, and sanitizing procedure in a warewashing system for CIP equipment;

(2) If using a warewashing machine that does not recycle the sanitizing solution, or alternative manual warewashing equipment such as sprayers, use of a nondistinct water rinse that is integrated in the application of the sanitizing solution, and wasted immediately after each application; or

(3) If using a warewashing machine that recycles the

sanitizing solution for use in the next wash cycle, use of a nondistinct water rinse that is integrated in the application of the sanitizing solution.

7.5.6 Sanitizing

7.5.6.1 Sanitizing Temperatures

manual hot-water sanitizing

7.5.6.1.1 In a manual operation, if immersion in hot water is used for sanitizing: **24 C**

(1) The temperature of the water shall be maintained at 77°C (171°F) or above; and

(2) The food-contact surface shall be immersed for at least 30 seconds.

warewasher hot-water sanitizing

7.5.6.1.2 In a mechanical operation, the temperature of the fresh hot water sanitizing rinse as it enters the manifold may not be more than 90°C (194°F), or less than: **24 C**

(1) For a stationary rack, single temperature machine, 74°C (165°F); or

(2) For all other machines, 82°C (180°F).

(3) A utensil surface temperature of 71°C (160°F) as measured by an irreversible registering temperature indicator shall be achieved.

(4) The maximum temperature of 90°C (194°F), does not apply to the high pressure and temperature systems with wand-type, hand-held, spraying devices used for the in-place cleaning and sanitizing of equipment such as meat saws.

warewasher hot-water sanitizing pressure

7.5.6.1.3 The flow pressure of the fresh hot water sanitizing rinse in a warewashing machine may not be less than 100 kilopascals (15 pounds per square inch) or more than 170 kilopascals (25 pounds per square inch) as measured in the water line immediately downstream or upstream from the fresh hot water sanitizing rinse control valve. 22

7.5.6.2 Sanitizing Concentrations

chemical sanitizing solutions	**7.5.6.2.1**	A chemical sanitizer used in a sanitizing solution for a manual or mechanical operation shall be listed in 21 CFR 178.1010 Sanitizing Solutions.	**24**	**C**
chemical sanitizing exposure	**7.5.6.2.2**	A chemical sanitizer shall be used in accordance with the EPA-approved manufacturer's label use instructions at a minimum temperature of 24°C (75°F) with an exposure time of 7 seconds for a chlorine solution and 30 seconds for other chemical sanitizers.	**24**	**C**
chemical sanitizing concentration	**7.5.6.2.3**	The sanitizing solutions shall be used with the following concentrations: (1) A chlorine solution shall have a concentration between 50 mg/L (ppm) and 200 mg/L (ppm); (2) An iodine solution shall have a pH of 5.0 or less or a pH no higher than the level for which the manufacturer specifies the solution is effective, and a concentration between 12.5 mg/L (ppm) and 25 mg/L (ppm); or (3) A quaternary ammonium compound solution shall have a concentration as specified in 21 CFR 178.1010 Sanitizing Solutions and as indicated by the manufacturer's use directions included in the labeling. (4) If another solution concentration or temperature of a chlorine, iodine, or quaternary ammonium compound is used, the vessel shall demonstrate to VSP that the solution achieves sanitization and the use of the solution shall be approved; or (5) If a chemical sanitizer other than a chlorine, iodine, or quaternary ammonium compound is used, it shall be applied in accordance with the manufacturer's use directions included in the labeling.	**24**	**C**
sanitizer concentration testing	7.5.6.2.4	Concentration of the sanitizing solution shall be accurately determined by using a test kit or other device.	22	

7.5.7 Protection of Clean Items

7.5.7.1 Drying

air dried / drained

7.5.7.1.1 After cleaning and sanitizing, equipment and utensils shall be air-dried or adequately drained before contact with food. 28

7.5.7.2 Lubricating and Reassembling

lubricating

7.5.7.2.1 Lubricants shall be applied to food-contact surfaces that require lubrication in a manner that does not contaminate food-contact surfaces. 28

assembling

7.5.7.2.2 Equipment shall be reassembled so that food-contact surfaces are not contaminated. 28

7.5.7.3 Storing Equipment, Utensils, Linens, and Single-Service and Single-Use Articles

storing protected

7.5.7.3.1 Cleaned equipment and utensils, laundered linens, and single-service and single-use articles shall be stored: 28

(1) In a clean, dry location;

(2) Where they are not exposed to splash, dust, or other contamination; and

(3) At least 15 centimeters (6 inches) above the deck.

storing inverted

7.5.7.3.2 Clean equipment and utensils shall be stored: 28

(1) In a self-draining position that allows air drying; and

(2) Covered or inverted.

original package

7.5.7.3.3 Single-service and single-use articles shall be kept in the original protective package or stored by using other means that afford protection from contamination until used. 28

utensil dispensing

7.5.7.3.4 Eating utensils dispensed at a consumer self-service unit such as a buffet or salad bar shall be protected from contamination. 28

7.5.8 Laundering

7.5.8.1 Laundry Facilities

laundry equipment	7.5.8.1.1	If linens used in the food areas are laundered on the vessel, a mechanical clothes washer and dryer shall be provided and used.	28
	7.5.8.1.2	*If laundering is limited to wiping cloths intended to be used moist, or to wiping cloths that are air-dried, a mechanical clothes washer and dryer need not be provided.*	
laundry operations location	7.5.8.1.3	Laundry operations shall be located so that the operations are protected from contamination and only where there is no exposed food; clean equipment, utensils, and linens; and unwrapped single-service and single-use articles.	28

7.5.8.2 Laundry Procedures

laundry frequency	7.5.8.2.1	Linens that do not come in direct contact with food shall be laundered between operations if they become wet, sticky, or visibly soiled.	28
cloth gloves	7.5.8.2.2	Cloth gloves shall be laundered before being used with a different type of raw animal food such as beef, lamb, pork, and fish.	28
linens / napkins	7.5.8.2.3	Linens and napkins that are used to line food service containers and cloth napkins shall be laundered between each use.	28
wiping cloths	7.5.8.2.4	Wet wiping cloths shall be laundered daily.	28
	7.5.8.2.5	Dry wiping cloths shall be laundered as necessary to prevent contamination of food and clean serving utensils.	28
laundry procedures	7.5.8.2.6	Soiled linens shall be kept in clean, nonabsorbent receptacles or clean, washable laundry bags and stored and transported to prevent contamination of food, clean equipment, clean utensils, and single-service and single-use articles.	28
washing	7.5.8.2.7	Linens shall be mechanically washed.	28

7.6 Poisonous and Toxic Materials

7.6.1 Identification

7.6.1.1 Labeling

manufacturer label	7.6.1.1.1	Original containers of poisonous or toxic materials and personal-care items shall bear a legible manufacturer's label.	31	C
working containers	7.6.1.1.2	Working containers used for storing poisonous or toxic materials such as cleaners and sanitizers taken from bulk supplies shall be clearly and individually identified with the common name of the material.	31	C

7.6.2 Operational Supplies and Applications

7.6.2.1 Storage

pesticide / rodenticide locker	7.6.2.1.1	Pesticides, insecticides, and rodenticides shall be stored in a locked area of the vessel that is not in a food area.	31	C
cleaning materials locker	7.6.2.1.2	Poisonous or toxic materials used in food area cleaning and maintenance shall be stored so they cannot contaminate food, equipment, utensils, linens, and single-service and single-use articles by separating the poisonous or toxic materials by storing in a cleaning materials locker.	31	C
	7.6.2.1.3	*This guideline does not apply to equipment and utensil cleaners and sanitizers that are stored in warewashing areas for availability and convenience if the materials are stored to prevent contamination of food, equipment, utensils, linens, and single-service and single-use articles.*		

7.6.2.2 Use

necessary materials	7.6.2.2.1	Only poisonous or toxic materials that are required for the operation and maintenance of a food areas of the vessel, such as for the cleaning and sanitizing of equipment and utensils and the control of insects and rodents, shall be allowed in the food areas of the vessel.	31	C
use conditions	7.6.2.2.2	Poisonous or toxic materials shall be used according to:	31	C

(1) Law and these guidelines;

(2) Manufacturer's use directions included in labeling, and, for a pesticide, manufacturer's label instructions that state that use is allowed in a food area; and

(3) The conditions of certification, if certification is required, for use of the pest-control materials.

application	7.6.2.2.3	Poisonous or toxic materials shall be applied so that: (1) A hazard to employees or other persons is not constituted, and (2) Contamination including toxic residues resulting from drip, drain, fog, splash or spray on food, equipment, utensils, linens, and single-service and single-use articles is prevented.	31	C
restricted-use applications	7.6.2.2.4	For a restricted-use pesticide, food, equipment, utensils, linens, and single-service and single-use articles shall be removed; covered with impermeable covers; and other precautions.	31	C
restricted-use applicator	7.6.2.2.5	A restricted use pesticide shall be applied only by an applicator certified as defined in 7 USC 136(e) Certified Applicator, of the Federal Insecticide, Fungicide and Rodenticide Act or a person under the direct supervision of a certified applicator.	31	C
equipment cleaning and sanitizing	7.6.2.2.6	Food equipment and utensils in the area treated shall be cleaned and sanitized following the application.	31	C
containers	7.6.2.2.7	A container previously used to store poisonous or toxic materials may not be used to store, transport, or dispense food.	31	C

7.6.2.3 Sanitizers and Other Food Area Chemicals

sanitizers	7.6.2.3.1	Chemical sanitizers and other chemical antimicrobials applied to food-contact surfaces shall meet the requirements specified in 21 CFR 178.1010 Sanitizing Solutions.	31	C
fruit / vegetable wash	7.6.2.3.2	Chemicals used to wash or peel raw, whole fruits and vegetables shall meet the requirements specified in 21 CFR 173.315 Chemicals Used in Washing or to Assist in the Lye Peeling of Fruits and Vegetables.	31	C

boiler water additives	**7.6.2.3.3**	Chemicals used as boiler water additives for culinary steam or other food area purposes shall meet the requirements specified in 21 CFR 173.310 - Boiler Water Additives.	**31**	**C**
drying agents	**7.6.2.3.4**	Drying agents used in conjunction with sanitization shall contain only components that are listed as one of the following: (1) Generally recognized as safe for use in food as specified in 21 CFR 182 - Substances Generally Recognized as Safe or 21 CFR 184 - Direct Food Substances Affirmed as Generally Recognized as Safe; (2) Generally recognized as safe for the intended use as specified in 21 CFR 186 - Indirect Food Substances Affirmed as Generally Recognized as Safe; (3) Approved for use as a drying agent under a prior sanction specified in 21 CFR 181 - Prior-Sanctioned Food Ingredients; (4) Specifically regulated as an indirect food additive for use as a drying agent as specified in 21 CFR Parts 175-178; or (5) Approved for use as a drying agent under the threshold of regulation process established by 21 CFR 170.39 Threshold of Regulation for Substances Used in Food-Contact Articles.	**31**	**C**
approved for use with chemical sanitizers	**7.6.2.3.5**	Drying agents, when used with chemical sanitization, shall be specifically approved for use with chemical sanitizing solutions.	**31**	**C**
lubricants	**7.6.2.3.6**	Lubricants shall meet the requirements specified in 21 CFR 178.3570 Lubricants with Incidental Food-Contact, if they are used on food-contact surfaces, on bearings and gears located on or within food-contact surfaces, or on bearings and gears that are located so that lubricants may leak, drip, or be forced into food or onto food-contact surfaces.	**31**	**C**
	7.6.2.4	**Pesticides and Rodenticides**		
restricted-use pesticides	**7.6.2.4.1**	Restricted-use pesticides used in food areas shall meet the requirements specified in 40 CFR 152 Subpart I	**31**	**C**

		Classification of Pesticides.		
rodent bait	**7.6.2.4.2**	Rodent bait used in food areas shall be contained in a covered, tamper-resistant bait station.	**31**	**C**
tracking powders	**7.6.2.4.3**	A tracking powder pesticide may not be used in a food area.	**31**	**C**
	7.6.2.4.4	A nontoxic tracking powder such as talcum or flour, if used, may not contaminate food.	19	
	7.6.2.4.5	A nontoxic tracking powder such as talcum or flour, if used, may not contaminate equipment, utensils, linens, and single-service and single-use articles.	28	

7.6.3 Medicines

7.6.3.1 Restriction and Storage

necessary medicines	**7.6.3.1.1**	Only medicines necessary for the health of the food employees shall be allowed in a food area.	**31**	**C**
medicines labeling / separation	**7.6.3.1.2**	Medicines that are in a food area for the food employees' use shall be labeled and be located in an area such as the chef's office to prevent the contamination of food, equipment, utensils, linens, and single-service and single-use articles.	**31**	**C**
first aid supplies	**7.6.3.1.3**	First aid supplies that are in a food area for the food employees' use shall be labeled and stored in a kit or a container that is located to prevent the contamination of food, equipment, utensils, linens, and single-service and single-use articles.	**31**	**C**

7.7 Facilities

7.7.1 Handwashing and Toilet Facilities

7.7.1.1 Handwashing Facility Installation

convenient	**7.7.1.1.1**	Each food preparation area, bar, warewashing area, and garbage-processing area shall have at least one handwashing facility located in it.	**29**	**C**
8 m / 25 feet	**7.7.1.1.2**	The handwashing facility shall be located within 8 m (25 feet) of all parts of the area and should not be located in an adjacent area that requires passage through a closed door.	**29**	**C**
tempered water	**7.7.1.1.3**	A handwashing sink shall be equipped to provide water at a temperature of at least 43°C (110°F) through a mixing valve or combination faucet.	**29**	**C**
metered faucet	7.7.1.1.4	A self-closing, slow-closing, or metering faucet shall provide a flow of water for at least 15 seconds without the need to reactivate the faucet.	30	
automatic systems	7.7.1.1.5	An automatic handwashing facility shall be installed in accordance with manufacturer's instructions.	30	
dispenser / receptacle	7.7.1.1.6	A handwashing facility shall include a sink, soap dispenser, single-use towels dispenser, and waste receptacle.	30	
sign	7.7.1.1.7	A sign stating "WASH HANDS OFTEN" in a language that the food employees understand shall be posted over handwashing sinks.	30	

7.7.1.2 Toilet Facility Installation

convenient	**7.7.1.2.1**	Toilet rooms shall be provided and conveniently located.	**29**	**C**
handwashing facilities	**7.7.1.2.2**	Handwashing facilities shall be provided in or immediately adjacent to toilet rooms or vestibules.	**29**	**C**
sign	7.7.1.2.3	Signs shall be conspicuously posted on the bulkhead adjacent to the door of the toilet, reading "WASH HANDS AFTER USING TOILET " in a language that the food employees understand.	30	
enclosed / doors	7.7.1.2.4	Toilet rooms shall be completely enclosed and shall have tight-fitting, self-closing doors which shall be kept closed except during cleaning or maintenance.	30	

hygiene waste	7.7.1.2.5	Easily cleanable covered receptacles shall be provided for hygiene waste materials.	30	
	7.7.1.3	**Handwashing and Toilet Facility Maintenance**		
accessible	**7.7.1.3.1**	Handwashing facilities shall be used for no other purpose and shall be accessible at all times.	**29**	**C**
facilities clean / good repair	7.7.1.3.2	Handwashing facilities shall be kept clean and in good repair.	30	
soap / towels	7.7.1.3.3	Each handwashing facility shall have a supply of hand-cleansing soap or detergent and a supply of single-service paper towels available.	30	
toilets clean / good repair	7.7.1.3.4	Toilet fixtures shall be kept clean and in good repair.	30	
toilet tissue	7.7.1.3.5	A supply of toilet tissue shall be provided at each toilet at all times.	30	
	7.7.2	**Solid Waste**		
	7.7.2.1	**Receptacles and Containers**		
containers	7.7.2.1.1	Receptacles and waste-handling containers for refuse and recyclables and for use with materials containing food residue shall be durable, nonabsorbent, easily cleanable and leakproof.	32	
insect / rodent resistant	7.7.2.1.2	Receptacles and waste-handling containers for refuse, recyclables and for use with materials containing food residue shall be insect- and rodent-resistant and shall have tight fitting lids.	32	
covered / provided	7.7.2.1.3	Receptacles and waste-handling containers shall be kept covered when not in continuous use and after they are filled.	32	
location	7.7.2.1.4	A receptacle or waste-handling container shall be provided in each area of the vessel or premise where refuse is generated or commonly discarded or where recyclables are placed.	32	
wash facilities	7.7.2.1.5	Facilities suitable for washing receptacles and waste-handling containers shall be provided separate from food equipment and utensil storage areas or food preparation areas.	32	
design / supplies	7.7.2.1.6	The designated container wash area shall be easily cleanable and shall have tempered water, access to detergent, and suitable drainage.	32	

cleaned	7.7.2.1.7	Receptacles and waste-handling containers shall be cleaned when emptied.	32	
	7.7.2.2	**Garbage and Refuse Storage Room**		
easily cleanable / durable	7.7.2.2.1	The dry and refrigerated garbage and refuse storage room shall be constructed of easily cleanable, corrosion-resistant, nonabsorbent, and durable materials.	32	
size	7.7.2.2.2	The garbage and refuse storage room shall be large enough to store and process the garbage and refuse.	32	
prevent contamination	7.7.2.2.3	The garbage and refuse storage room shall be located so as to prevent contamination in food preparation, storage, and utensil washing areas.	32	
good repair / clean	7.7.2.2.4	The garbage and refuse storage room shall be maintained in good repair and kept clean.	32	
	7.7.3	**Liquid Waste Disposal and Plumbing**		
	7.7.3.1	**Drain Lines**		
drain lines	**7.7.3.1.1**	Drain lines from all fixtures, sinks, appliances, compartments, refrigeration units, or devices that are used, designed for, or intended to be used in the preparation, processing, storage, or handling of food, ice, or drinks shall be indirectly connected to appropriate waste systems by means of an air-gap or air-break.	**07**	**C**
hand sink drain lines	7.7.3.1.2	*Drain lines from handwashing sinks may be directly connected to the appropriate waste system.*		
overhead	7.7.3.1.3	Drain lines carrying sewage or other liquid waste shall not pass directly overhead or horizontally through spaces used for the preparation, serving, or storage of food or the washing or storage of utensils and equipment. Drain lines that are unavoidable in these food areas shall be sleeve-welded and shall not have mechanical couplings.	19	
	7.7.3.2	**Liquid Waste Disposal**		
discharge	7.7.3.2.1	Black and gray water shall be discharged to the vessel's wastewater disposal system and shall not pool on the deck.	35	
leakage	7.7.3.2.2	The leakage of sewage tanks or discharge of sewage into the bilge or other areas on the vessel shall be prohibited.	35	
	7.7.3.3	**Plumbing**		

good repair	7.7.3.3.1	A plumbing system in a food area shall be maintained in good repair.	34

7.7.4 Decks, Bulkheads, and Deckheads

7.7.4.1 Design and Construction

cleanable	7.7.4.1.1	Decks, bulkheads, and deckheads in food preparation, warewashing, pantries, and storage areas shall be constructed and maintained for easy cleaning.	33
non-skid	7.7.4.1.2	*Decks may be of non-skid construction provided they are easily cleanable.*	
coving	7.7.4.1.3	Bulkhead and deck junctures shall be coved.	33
finishes	7.7.4.1.4	Bulkheads and deckheads shall have smooth, hard finishes, and light colored surfaces.	33
corrosion-resistant	7.7.4.1.5	Decks, bulkheads, and deckheads in food preparation, warewashing, pantries, and storage areas shall be corrosion-resistant.	33
attached equipment	7.7.4.1.6	Light fixtures, vent covers, and similar equipment attached to the bulkheads or deckheads shall be easily cleanable.	33
exposed lines	7.7.4.1.7	Exposed utility service lines and pipes, including lines for fire detection and protection systems, shall be installed so they do not obstruct or prevent cleaning.	33
cleanable surfaces	7.7.4.1.8	Surfaces subject to routine splashes, spillage or other soiling during normal use shall have easily cleanable features.	33
deck mats	7.7.4.1.9	Mats shall be designed to be removable and easily cleanable.	33

7.7.4.2 Maintenance

clean	7.7.4.2.1	Decks, bulkheads, deckheads, and attached equipment in food preparation, warewashing, pantries, and storage areas, shall be cleaned as often as necessary.	33
timing	7.7.4.2.2	Cleaning shall be done during periods when the least amount of food is exposed.	33
good repair	7.7.4.2.3	Decks, bulkheads, and deckheads in food preparation, warewashing, pantries, and storage areas, shall be maintained in good repair.	33

7.7.5 Lighting

7.7.5.1 Intensity

220 Lux / 20 foot candles	7.7.5.1.1	The light intensity shall be at least 220 Lux (20 foot candles) on food preparation surfaces, and at a distance of 75 centimeters (30 inches) above the deck in food preparation areas, handwashing facilities, warewashing areas, equipment, and utensil storage, pantries, toilet rooms, and consumer self-service areas.	36
110 Lux / 10 foot candles	7.7.5.1.2	The light intensity shall be at least 110 Lux (10 foot candles) at a distance of 75 centimeters (30 inches) above the deck when in use, in walk-in refrigerator units and dry storage areas, and in other areas and rooms during periods of cleaning.	36

7.7.5.2 Protected

shielded	7.7.5.2.1	Light bulbs shall be shielded, coated, or otherwise shatter-resistant in areas where there is exposed food; clean equipment, utensils, and linens; or unwrapped single-service, and single-use articles.	36
heat lamps	7.7.5.2.2	An infrared or other heat lamp shall be protected against breakage by a shield surrounding and extending beyond the bulb so that only the face of the bulb is exposed.	36

7.7.6 Ventilation

7.7.6.1 Design and Operation

sufficient	7.7.6.1.1	All food preparation, warewashing, and toilet rooms shall have sufficient ventilation to keep them free of excessive heat, steam, condensation, vapors, obnoxious odors, smoke, and fumes.	37
effective	7.7.6.1.2	Ventilation hood systems and devices shall operate effectively to prevent grease and condensate from collecting on the bulkheads and deckheads and remove contaminants generated by equipment located under them.	37
no contamination	7.7.6.1.3	Heating, ventilating, and air conditioning systems shall be designed and installed so that make-up air intake and exhaust vents do not cause contamination of food, food-contact surfaces, equipment, or utensils.	37

7.7.6.2 Maintenance

filters	7.7.6.2.1	Filters and other grease extracting equipment shall be designed to be readily removable for cleaning and replacement if not designed to be cleaned-in-place. Intake and exhaust air ducts shall be cleaned and filters changed so they are not a source of contamination by dust, dirt, and other materials.	37

7.7.7 Cleaning Equipment and Unnecessary Articles

7.7.7.1 Storage

necessary articles	7.7.7.1.1	Only articles necessary for the food service operation shall be stored in food preparation, food storage, and warewashing areas.	38
cleaning locker	7.7.7.1.2	Maintenance tools such as mops, brooms, and similar items shall be stored in a designated locker so they do not contaminate food; food-contact surfaces of utensils; and equipment; linens, and single-service and single-use articles.	38
orderly manner	7.7.7.1.3	Maintenance tools such as mops, brooms, and similar items shall be stored in an orderly manner that facilitates cleaning of the area used for storing the maintenance tools.	38
mop drying	7.7.7.1.4	After use, mops shall be placed in a position that allows them to air-dry without soiling walls, equipment, or supplies.	38
	7.7.7.1.5	*Wash, rinse, and sanitize buckets or other containers may be stored with maintenance tools provided they are stored inverted and nested.*	

8.0 Integrated Pest Management

8.1 Integrated Pest Management
8.2 Pest Control

8.1 Integrated Pest Management

8.1.1 Plan Development and Implementation

8.1.1.1 IPM Plans

IPM plan	8.1.1.1.1	Each vessel shall develop an Integrated Pest Management Plan to address effective monitoring and control strategies for pests aboard the vessel.	40
monitoring	8.1.1.1.2	The Integrated Pest Management Plan shall set a schedule for periodic monitoring inspections including some at night.	40
logs	8.1.1.1.3	The Integrated Pest Management Plan shall include provisions for active monitoring including pest sighting logs for the operational areas of the vessel and training for crew members in charge of log completion.	40
passive surveillance	8.1.1.1.4	The Integrated Pest Management Plan shall include passive surveillance procedures such as glue traps and other monitoring tools, as well as location of each. A monitoring log on passive surveillance procedures shall be maintained.	40

8.1.1.2 Plan Evaluation

2 years	8.1.1.2.1	The vessel's Integrated Pest Management Plan shall be evaluated for effectiveness every 2 years or whenever there is a significant change in the vessel's structure such as a renovation or operation.	40
reviews	8.1.1.2.2	Reviews shall be documented and changes noted in the vessel's Integrated Pest Management Plan.	40
inspections	8.1.1.2.3	The vessel's Integrated Pest Management Plan documentation shall be made available during the VSP inspections.	40

8.1.2 IPM and Pesticide Use

8.1.2.1 Pesticide Application

records	8.1.2.1.1	The Integrated Pest Management Plan shall include a record of pesticides used and their effectiveness.	40	
restricted-use	**8.1.2.1.2**	A restricted-use pesticide shall be applied only by a certified applicator or a person with training and testing equivalent to that of a certified applicator.	**39**	**C**
applicator training	8.1.2.1.3	The training of the pest-control personnel shall be documented in the Integrated Pest Management Plan.	40	
safety	8.1.2.1.4	The Integrated Pest Management Plan shall establish health and safety procedures to protect the passengers and crew.	40	

8.2 Pest Control

8.2.1 Exclusion

8.2.1.1 Food Areas

effective control	**8.2.1.1.1**	The presence of insects, rodents, and other pests shall be effectively controlled to minimize their presence in the food storage, preparation, and service areas and warewashing and utensil storage areas aboard a vessel.	**39**	**C**
exclusion	8.2.1.1.2	Entry points where pests may enter the food areas shall be protected.	40	
incoming food supplies	8.2.1.1.3	Incoming shipments of food and supplies shall be routinely inspected for evidence of insects, rodents, and other pests.	40	
IPM inspections	8.2.1.1.4	The vessel's food areas shall be inspected under the Integrated Pest Management Plan at a frequency that can quickly detect the evidence of pests or the creation of harborage conditions.	40	

8.2.2 Control Measures

8.2.2.1 Chemical

chemical controls	**8.2.2.2.1**	Chemical control measures shall conform to products and application procedures specifically allowed in the food safety section of these guidelines and the vessel's Integrated Pest Management Plan.	**39**	**C**

8.2.2.2 Physical

insect-control devices	8.2.2.2.1	Insect-control devices that are used to electrocute or stun flying insects shall be designed to retain the insect within the device.	40
food protection	8.2.2.2.2	The insect devices shall not be located over food storage, preparation, and service areas. Dead insects and insect fragments shall be prevented from being impelled onto or falling on exposed food.	19
utensil protection	8.2.2.2.3	The insect devices shall not be located over warewashing, utensil storage areas, equipment, utensils, linens, unwrapped single-service, and single-use articles. Dead insects and insect fragments shall be prevented from being impelled onto or falling on clean items.	28
cleaning	8.2.2.2.4	Dead or trapped insects, rodents, and other pests shall be removed from control devices and the vessel at a frequency that prevents their accumulation or decomposition, or the attraction of pests.	40

9.0 Housekeeping

9.1 Infection-Control Procedures
9.2 Air Systems
9.3 Fountains, Humidifiers, and Showers

9.1 Infection-Control Procedures

9.1.1 Disinfection

9.1.1.1 Public Areas

public areas	9.1.1.1.1	When the cumulative proportion of cases of gastrointestinal illness among passengers or crew members is $2%, the infection control response shall include cleaning and disinfecting all public areas, including handrails and restrooms, on a continuous basis until the proportion decreases to <2%.	41

9.1.2.1 Cabins

cabin cleaning	9.1.2.1.1	Cabins that house passengers or crew with gastrointestinal illness shall be thoroughly cleaned and disinfected daily while the occupants are ill.	41
precautionary measures	9.1.2.1.2	Extra precautionary measures by housekeeping personnel shall be taken in consultation with the vessel's medical staff to prevent the spread of gastrointestinal illness from cabin to cabin.	41
example	9.1.2.1.3	*Precautionary measures by the housekeeping personnel may include using disposable personal protection equipment, including gloves, which are changed after each cabin.*	

9.2 Air Systems

9.2.1 Design and Maintenance

9.2.1.1 Construction

condensate pans	9.2.1.1.1	Air handling unit condensate drain pans and collection systems shall be accessible for inspection, maintenance, and cleaning.	41
self-draining	9.2.1.1.2	Air condition condensation collection pans shall be self-draining.	41

9.2.1.2 Maintenance

air handling units	9.2.1.2.1	Air handling units shall be kept clean.	41
condensers	9.2.1.2.2	Evaporative condensers shall be inspected at least annually and cleaned as necessary to remove scale and sediment. Cooling coils and condensate pans shall be cleaned as necessary to remove dirt and organic material.	41
inspection and maintenance plan	9.2.1.2.3	Vessels shall have a plan to inspect and maintain heating, ventilation, and air conditioning systems in accordance with manufactures recommendations and industry standards.	41

9.2.1.3 Dust Control

cleaning	9.2.1.3.1	Carpets, curtains, drapes, furniture, decks, lighting fixtures, and decorative items on the vessel shall be cleaned to minimize accumulation of dust and soil.	41
methods	9.2.1.3.2	Dustless cleaning methods shall be used.	41

9.3 Fountains, Humidifiers, and Showers

9.3.1 Fountains and Humidifiers

9.3.1.1 Water Source

sprays	9.3.1.1.1	Water used in conjunction with decorative fountains and water sprays in HVAC air- distribution systems shall originate in the vessel's potable water system and shall be further treated to avoid microbial build-up in the operation of the sprays and fountains.	41

9.3.1.2 Fountain and Water Spray Maintenance

clean	9.3.1.2.1	Decorative fountains and water sprays in HVAC air-distribution systems shall be maintained free of algae and mold.	41

9.3.2 Hot-Water System and Showers

9.3.2.1 Maintenance

hot-water system	9.3.2.1.1	The potable hot-water system including shower heads shall be maintained to preclude growth of ***Mycobacterium legionella***.	41
showers	9.3.2.1.2	Shower heads shall be cleaned and disinfected every 6 months to preclude growth of ***Mycobacterium legionella***.	41

10.0 Child-Activity Centers

10.1 Diaper Changing
10.2 Toilet and Handwashing
10.3 Cleaning and Disinfection
10.4 Exclusions

10.1 Diaper Changing

10.1.1 Diaper-Changing Facilities

10.1.1.1 Design

diaper changing	10.1.1.1.1	If children who wear diapers are accepted in the child-activity center, diaper-changing stations and disposal facilities shall be provided.	41
facilities	10.1.1.1.2	Each station shall include: (1) A changing table that is impervious, nonabsorbent, nontoxic, smooth, durable, and cleanable, and designed for diaper changing; (2) A supply of disposable diapers, gloves, wipes, table cleanser, and disinfectant; (3) An airtight, soiled-diaper receptacle; and (4) An adjacent handwashing station.	41
signs	10.1.1.1.3	Signs shall be posted in the diaper-changing area advising child-activity center staff to wash their hands after each diaper they change.	41

10.2 Toilets and Handwashing

10.2.1 Facilities

10.2.1.1 Design

child-size toilet	10.2.1.1.1	Child-size toilet and handwashing facilities shall be provided, if toilet rooms are located in a child-activity center.	41
toilet supplies	10.2.1.1.2	Each toilet facility shall be provided with a supply of toilet tissue, disposable gloves, and sanitary wipes.	41
waste receptacle	10.2.1.1.3	An airtight, washable, waste receptacle shall be conveniently located to dispose of excrement, soiled sanitary wipes that cannot be disposed of in the toilet and gloves. Waste materials shall be removed from the child-activity center each day.	41
handwashing supplies	10.2.1.1.4	Soap, paper towels or air dryers, and waste towel receptacle shall be located at handwashing stations.	41
signs	10.2.1.1.5	Signs shall be posted in children's toilet room advising the providers to wash their hands and the children's hands after assisting children use the toilet.	41
assistance	10.2.1.1.6	Children under 6-years old shall be assisted in washing their hands in the child-activity center after using the toilet room, before eating, or after otherwise contaminating their hands.	41
separate	10.2.1.1.7	Separate toilet facilities shall be provided for child activity center staff.	41

10.3 Cleaning and Disinfection

10.3.1 Furnishings and Toys

10.3.1.1 Construction

cleanable	10.3.1.1.1	Surfaces of tables, chairs, and other furnishings that children touch with their hands shall be cleanable.	41
construction	10.3.1.1.2	Toys used in the child-activity center shall be maintained in a clean condition.	41

10.3.1.2 Procedures

hard surfaces	10.3.1.2.1	Surfaces that children touch with their hands shall be cleaned and disinfected at least daily with products labeled by the manufacturer for that purpose.	41
toy cleaning	10.3.1.2.2	Toys used in the child-activity center shall be cleaned and disinfected daily.	41
tables / high chairs	10.3.1.2.3	Tables or high chair trays shall be cleaned and disinfected before and after they are used for eating.	41
decks	10.3.1.2.4	Carpeting shall be vacuumed at least daily and shall be periodically cleaned when it becomes visibly soiled. Decks shall be mopped and disinfected when soiled or at least daily.	41
facility cleaning / disinfecting	10.3.1.2.5	Diaper changing and handwashing facilities and toilet rooms shall be cleaned and disinfected when soiled during use and at least daily.	41

10.4 Exclusions

10.4.1 Children with Infectious Illness

10.4.1.1 Procedures

written guidance	10.4.1.1.1	Written guidance on symptoms of common childhood infectious illnesses shall be maintained in the child-activity center.	41
illness policy	10.4.1.1.2	The child-activity center shall have a written policy on procedures to be followed when a child develops symptoms of an infectious illness while at the center.	41
infectious illness	10.4.1.1.3	Children with infectious illness shall not be allowed in the child-activity center without permission of the vessel's medical staff.	41

11.0 Administrative Guidelines

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11.1 Inspections

11.1.1 Inspection Procedures

routine inspections

11.1.1.1 An unannounced, complete sanitation inspection by VSP Environmental Health Officers (EHOs) shall be done twice each federal fiscal year, if the vessel is available.

inspectors

11.1.1.2 VSP EHOs shall be trained in the interpretation and application of the USPHS / CDC / VSP Operations Manual.

boarding

11.1.1.3 The VSP EHO shall board the vessel and immediately inform the master of the vessel or a designated agent that a vessel sanitation inspection is to be conducted.

sequence

11.1.1.4 The VSP EHO shall then conduct the inspection in a logical sequence until the EHO has completed the inspection of all areas identified in this manual.

imminent health hazard detection

11.1.1.5 The VSP EHO shall contact the master of the vessel or a designated agent and the Chief, VSP, immediately during an inspection about a possible recommendation that the vessel not sail, if an imminent health hazard as specified in section 11.9.2 is found to exist on the vessel and if these deficiencies possibly cannot be corrected before the inspection is completed.

incomplete inspections 11.1.1.6 The inspection shall be completed in the same visit once it has begun. In the event that the inspection cannot be completed, the results of an incomplete inspection shall be discussed with the vessel's staff. A complete inspection shall be conducted at a later date.

11.2 Inspection Report

11.2.1 Draft Report

provided 11.2.1.1 The VSP EHO shall provide a draft inspection report to the master of the vessel, or a designated agent, at the conclusion of the inspection.

information 11.2.1.2 The draft inspection report shall provide administrative information, gastrointestinal illness log review details, and inspection score.

deficiency descriptions 11.2.1.3 The draft inspection report shall provide a written description of the items found deficient and where the deficiency was observed.

11.2.2 Final Report

report form 11.2.2.1 The VSP EHO shall use the Vessel Sanitation Inspection Report (Annex 13.8) to summarize the inspection score. The inspection report shall contain the following elements:

administrative 11.2.2.2 Administrative information that identifies the vessel and its master or designee and the numerical rating when the credit point values for all observed deficiencies are subtracted from 100.

deviations 11.2.2.3 The item number and the credit point value for that item number shall be indicated if the vessel does not meet the Operations Manual standard for that item.

medical review 11.2.2.4 The medical documentation (e.g.; GI logs, medical logs, special reports, etc.) shall be available for review by VSP for accuracy and timeliness of reporting.

report detail 11.2.2.5 A written description of the items found deficient shall be included. The deficiencies shall be itemized with references to the section of the Operations Manual. The description shall include the deficiency location and Operations Manual section citation.

11.3 Risk-Based Scoring and Correction Priority

11.3.1 Scoring System

weighted items

11.3.1.1 The inspection report scoring system is based on inspection items with a total value of 100 points.

risked-based

11.3.1.2 Inspection items are weighted according to their probability of increasing the risk for a gastrointestinal disease outbreak.

critical items

11.3.1.3 Critical items are those with a weight of 3 to 5 credit point values on the inspection report.

critical designation

11.3.1.4 Critical items are designated in this Operations Manual with a red **C** to the right of the inspection report item number which is also shown in red. The section numbers of the critical items in this Operations Manual are also provided in red.

noncritical items

11.3.1.5 Noncritical items are those with a weight of 1 to 2 credit point values on the inspection report.

scoring

11.3.1.6 Each weighted deficiency found on an inspection shall be deducted from 100 possible credit points.

11.3.2 Risk-Based Correction Priority

critical correction time frame

11.3.2.1 A vessel shall at the time of inspection correct a critical deficiency of this Operations Manual and implement a corrective- action plan for monitoring the critical item for continued compliance.

extension

11.3.2.2 *Considering the nature of the potential hazard involved and the complexity of the corrective action needed, the VSP may agree to, or specify, a longer time frame, not to exceed 10 calendar days after the inspection, for the vessel to correct critical deficiencies.*

11.4 Closing Conference

11.4.1 Procedures

closing conference

11.4.1.1 The results of the inspection shall be explained to the master or a designee before the VSP EHO leaves the vessel.

report copy

11.4.1.2 A copy of the draft inspection report shall be left with the master or designee. The report shall be reviewed in detail and opportunity provided for discussions of the findings. The draft report is provided so that the vessel personnel can begin correcting deficiencies immediately.

invoice

11.4.1.3 The master or a designee shall be provided with a payment invoice for a signature. The VSP EHO shall provide one copy of the signed invoice to the master or designee and shall forward one copy to the vessel's company office along with the final inspection report.

fee schedule

11.4.1.4 The fee for inspections shall be based on the existing fee schedule for routine inspections of passenger cruise vessels, published annually in the Federal Register.

11.5 Inspection Review

11.5.1 Inspection Report Review Requests

contested results

11.5.1.1 If the master disagrees with the findings, the master shall notify the VSP EHO during the closing conference of the intent to request a review of the specific items being contested, and the substantive reasons for disagreement.

If a designated corporate official disagrees with the findings, the corporate official may submit a request to review the inspection. This request must be submitted to VSP within 48 hours of the closing conference.

interim report

11.5.1.2 An interim report shall be completed at the request of the owner or operator if an inspection is under review, indicating the item(s) under review. The VSP shall modify the final inspection report, as necessary, after the review by the Chief, VSP.

report remarks 11.5.1.3 After receiving a request for review, the VSP EHO shall mark the vessel's inspection report as under review at the request of the vessel owner or operator.

written request 11.5.1.4 The vessel owner or operator shall make a written request for review within 2 weeks of the inspection with specific reference and facts concerning the contested deficiencies that the VSP EHO documented during the inspection.

address 11.5.1.5 The written request shall be sent to:

Chief, Vessel Sanitation Program Branch
National Center for Environmental Health
Centers for Disease Control and Prevention
4770 Buford Hwy NE, Mailstop F 16
Atlanta, GA 30341-3724
USA

11.5.2 Inspection Report Review Procedures

review 11.5.2.1 The Chief, VSP, shall review the matter and respond within 2 weeks of receiving the request for a review. In the response, the Chief, VSP, shall state whether the inspection report is to be changed.

no score 11.5.2.2 No numerical score shall be published before the Chief, VSP, makes a final determination on the review. Publication of inspection results shall indicate the vessel's status as under review at the request of the vessel owner or operator.

report copies 11.5.2.3 Copies of the contested inspection results that are released before the Chief, VSP, makes a final determination on the review shall have each contested deficiency clearly marked as under review at the request of the vessel owner or operator.

final report 11.5.2.4 The interim report shall be issued as a final report if the written request for review is not received within 2 weeks of the inspection.

appeal 11.5.2.5 If the ship owner does not agree with the review and decision of the Chief VSP, they may appeal the decision to the Director, Division of Emergency and Environmental Health Services, National Center for Environmental Health.

11.5.3 Other Recommendations Review

review 11.5.3.1 A vessel owner or operator shall have the right to request a review of recommendations made during a technical consultation, or an inspection, if the owner or operator believes that VSP officials have imposed requirements inconsistent with or beyond the scope of this manual.

written request 11.5.3.2 The owner or operator shall send a written statement explaining the problem in detail to the Chief, VSP, within 30 days of the date the recommendation was made.

review 11.5.3.3 The Chief, VSP, shall review the issue and respond within 2 weeks of receiving the statement, advising whether the recommendation shall be revised.

appeal 11.5.3.4 If the ship owner does not agree with the review and decision of the Chief VSP, they may appeal the decision to the Director, Division of Emergency and Environmental Health Services, National Center for Environmental Health.

11.6 Corrective-Action Statement

11.6.1 Procedures

corrective actions 11.6.1.1 A signed corrective-action statement (Annex 13.9) shall be submitted to the Chief, VSP, by the master, owner or operator which details each deficiency identified during the inspection, and the corrective action taken.

critical-corrective actions 11.6.1.2 Critical-item deficiencies shall also include standard operating procedures and monitoring procedures implemented to prevent the recurrence of the critical deficiency.

clarification requests 11.6.1.3 The corrective-action statement may contain requests for clarification of items noted on the inspection report. The request for clarification shall be included in the cover letter from the vessel's master, owner, or operator. Clarification of these items will be provided back to the requestor, in writing, by the Chief, VSP, or the EHO who conducted the inspection in question.

public distribution 11.6.1.4 The corrective-action statement shall be appended to the final inspection report for future reference and, if requested, made available for public distribution.

same score 11.6.1.5 A corrective-action statement shall not affect the inspection score.

11.7 Correction Affidavit

11.7.1 Procedures

procedures 11.7.1.1 An affidavit of correction from the owner or operator, certifying that corrective action has been completed, may be submitted to the Chief, VSP. The procedure may be used only one time for an item. The item shall be structure- or equipment-related, and it shall be corrected within a reasonable period.

conditions 11.7.1.2 At least one of the following conditions shall apply for an item to qualify for an affidavit of correction:

(1) It shall be a longstanding deficiency that has not been identified during previous inspections; or

(2) It shall be a deficiency in which the function of the equipment is being accomplished by an alternative method.

requested at inspection 11.7.1.3 After the inspection, but before the VSP EHO leaves the vessel, the vessel's master or a representative shall provide notification of the intent to submit an affidavit of correction. This notice shall specify the deficiency(s) to be corrected and the corrective action to be taken. The draft inspection report will include a notation of the items to be corrected.

final inspection score 11.7.1.4 Upon acceptance of the affidavit, the final inspection score will be recalculated to include credit for the items corrected.

11.8 Inspection Publication

11.8.1 Methods

report availability on website 11.8.1.1 CDC shall publish an announcement of inspections performed in the *Summary of Sanitation Inspections of International Cruise Ships* on the VSP website http://www.cdc.gov/nceh/vsp .

data 11.8.1.2 The announcement shall include, at a minimum, the names of the vessels in the inspection program, the dates of their most recent inspections, and the numerical score achieved by each vessel.

public record 11.8.1.3 Reports, including the corrective-action statement, shall be available to the public upon request.

11.9 Recommendation that the Vessel Not Sail

11.9.1 Imminent Health Hazards

imminent health hazard 11.9.1.1 An imminent health hazard shall be determined to be, but not limited to, one of the following situations:

potable water halogen (1) Free halogen residual in the potable water distribution system is less than 0.2 mg/L (ppm) and this deficiency is not corrected before the inspection ends;

PHF temperature facilities (2) Inadequate facilities for maintaining safe temperatures for potentially hazardous food;

cleaning and sanitizing (3) Inadequate facilities for cleaning and sanitizing equipment;

liquid / solid waste (4) Continuous problems with liquid and solid waste disposal, such as inoperative or overflowing toilets or shower stalls in passenger and crew member cabins; or

disease outbreak (5) Infectious disease outbreak among passengers or crew, and where it is suspected that continuing normal operations may subject newly arriving passengers to disease.

11.9.2 Procedures

notify Chief, VSP 11.9.2.1 The VSP EHO shall immediately notify the Chief, VSP, when any of these imminent health hazards or similar imminent threats to public health are found aboard a vessel.

no sail 11.9.2.2 CDC shall recommend or direct the master of a vessel not to sail when an imminent health hazard is identified and cannot be immediately corrected. Such a recommendation shall be signed by the Chief, VSP, with

concurrence of the Director, National Center for Environmental Health, or the Director's designee.

11.10 Reinspections and Follow-Up Inspections

11.10.1 Reinspection Procedures

failing vessels reinspections

11.10.1.1 A reinspection is a complete sanitation inspection performed on vessels that, on the previous inspection, did not score at least 86.

reasonable time

11.10.1.2 Vessels that fail on a routine inspection shall be reinspected within a reasonable time, depending on:

(1) Vessel schedules; and

(2) Receipt of the corrective-action statement from the vessel's management.

unannounced

11.10.1.3 Reinspections shall be unannounced.

no sail reinspections

11.10.1.4 If such a no sail recommendation is made, a follow-up inspection shall be conducted as soon as requested.

scheduling priority

11.10.1.5 In scheduling inspections, VSP shall give priority to the reinspection of those vessels that failed the routine inspection.

one reinspection

11.10.1.6 Vessels that fail a routine inspection shall undergo only one reinspection.

written requests

11.10.1.7 *Exceptions may be made, when the owner or operator submits a written request for an additional reinspection to the Chief, VSP stating the reasons why the additional reinspection is warranted.*

unannounced / inspection fee

11.10.1.8 These additional reinspections shall be unannounced and the vessel shall be charged the standard inspection fee.

11.10.2 Follow-Up Inspection Procedures

follow-up

11.10.2.1 A follow-up inspection is a partial inspection to review the status of deficiencies identified during the previous periodic inspection or reinspection.

not periodic or reinspection

11.10.2.2 A follow-up inspection cannot be a substitute for a periodic or reinspection.

follow-up reasons 11.10.2.3 Follow-up inspections may be conducted to resolve a contested inspection; or inspect imminent health hazards that resulted in a recommendation to prohibit the vessel from sailing.

next arrival 11.10.2.4 These inspections shall be conducted as soon as possible after the routine inspection or reinspection, preferably the next time the vessel arrives at a U.S. port.

limited 11.10.2.5 They shall be limited to inspection of deficiencies in question. For example, if an item under the refrigerator section of the inspection was found to be a deficiency and was the only item contested, only refrigeration would be checked during the follow-up inspection.

other items 11.10.2.6 Any other problems noted during the follow-up inspection shall be brought to the attention of the vessel's master or designee so that the deficiencies can be corrected.

no score 11.10.2.7 There shall be no inspection score provided nor fee charged for these follow-up inspections.

11.11 Construction / Renovation Inspections

11.11.1 Procedures

construction 11.11.1.1 Whenever possible, the VSP staff shall conduct inspections of vessels being constructed or undergoing major retrofits upon the request of the vessel owner or operator.

requesting inspection 11.11.1.2 An official written request shall be submitted to the Chief, VSP, requesting a voluntary construction / renovation inspection. CDC's ability to honor these requests shall be based on the availability of VSP staff.

time frame 11.11.1.3 Construction / renovation inspections shall normally be conducted at the shipyard 4 to 6 weeks before completion. An additional inspection may also be conducted upon completion of the work and before the vessel enters operational status.

construction compliance 11.11.1.4 Construction / renovation inspections shall document the vessel's compliance with CDC's *Recommended Shipbuilding Construction Guidelines for Passenger Vessels Destined to Call on U.S. Ports*, which provides a framework for consistency in the sanitary design,

construction, and construction inspections of cruise vessels.

new vessels 11.11.1.5 The CDC *Recommended Shipbuilding Construction Guidelines for Passenger Vessels Destined to Call on U.S. Ports* shall apply to all new vessels in which the keel is laid after February 1, 1997.

major retrofits 11.11.1.6 The construction guidelines shall also apply to major retrofits planned after February 1, 1997.

minor retrofits 11.11.1.7 These guidelines shall not apply to minor retrofits.

fee schedule 11.11.1.8 The fee for these construction / renovation inspections shall be based on the existing fee schedule for routine inspections.

11.11.2 Construction / Renovation Inspection Reports

report 11.11.2.1 A written report shall be issued by the VSP after a construction / renovation inspection. These reports shall summarize any changes recommended to ensure conformity with CDC guidelines.

guides 11.11.2.2 The reports prepared by VSP personnel in the shipyards during construction shall be used as guides if VSP conducts a final construction / renovation inspection on the vessel before the vessel enters operational service.

no score 11.11.2.3 No score shall be given for construction / renovation inspections.

11.12 Other Environmental Investigations

11.12.1 Procedures

environmental investigations 11.12.1.1 The VSP may conduct or coordinate other activities such as: investigating disease outbreaks; checking a specific condition such as halogen residual in the potable water distribution system; or investigating complaints of unsanitary conditions on a vessel.

problems noted 11.12.1.2 Public health problems noted during other environmental investigations shall be brought to the attention of the vessel's master or designee when these investigations are performed.

no score 11.12.1.3 There shall be no inspection score provided nor fee charged for other environmental investigations.

11.13 Variances

11.13.1 Procedures

variance procedures 11.13.1.1 The VSP may grant a variance by modifying or waiving the requirements of this Operations Manual if in the opinion of the VSP a health hazard or nuisance will not result from the variance.

VSP records 11.13.1.2 If a variance is granted, the VSP shall retain the information in its records for the vessel or, if applicable, multiple vessels.

vessel records 11.13.1.3 If a variance is granted, the vessel using the variance shall retain the information in its records for ready reference.

11.13.2 Documentation

detailed justification 11.13.2.1 Before a variance from a requirement of this Operations Manual is approved, the information that shall be provided to the VSP by the person requesting the variance and retained in the VSP's file on the vessel or vessels shall include:

section specific (1) A statement of the proposed variance of the Operations Manual requirement citing relevant section numbers;

hazard analysis (2) An analysis of the rationale for how the potential public health hazards and nuisances addressed by the relevant Operations Manual requirement will be alternatively addressed by the proposal;

HACCP / procedures / training / monitoring (3) If required, a HACCP plan, standard operating procedures, training plan and monitoring plan that includes all the information as it is relevant to the variance requested; and

scientific / supporting data (4) Additional scientific data or other information as required to support the determination that public health will not be compromised by the proposal.

11.13.3 Conformance

11.13.3.1 If the VSP grants a variance, the vessel shall:

conformance

(1) Comply with the HACCP plans, standard operating procedures, training plan, and monitoring plan that are submitted and approved as a basis for the modification or waiver; and

records

(2) Maintain and provide to the VSP, upon request, records that demonstrate that procedures monitoring critical-control points are effective, monitoring of the critical-control points are routinely employed, necessary corrective actions are taken if there is failure at a critical-control points and periodic verification of the effectiveness of the operation or process protects public health.

rescinding variance

11.13.3.2 The variance approval may be rescinded at any time for noncompliance with these conditions or if it is determined that public health has the potential of being compromised.

12.0 Index

(NOTE: The indexing is incomplete at this time. The final published version will have a complete index. To expedite the early dissemination of this document, this online version is being released now. It will be updated with the version with the complete index, as soon as it available.)

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Note - This is an example of the detailed Index that will be published in the VSP Operations Manual.

13.0 Annexes

13.1 Authority

13.2 Gastrointestinal Illness Surveillance System

13.3 Gastrointestinal Illness Surveillance System Reporting

13.4 Gastrointestinal Illness Outbreak Investigation

13.5 Disinfection Calculations for Water and Equipment

13.6 Food Cooking Alternatives

13.7 Warewashing Evaluation

13.8 Inspection Report

13.9 Corrective-Action Statement

13.10 *Summary of Sanitation Inspections of International Cruise Ships*

13.11 Bibliography

13.1 Authority

13.1.1 Public Health Service Act
13.1.2 Title 42 Code of Federal Regulations

13.1.1 Public Health Service Act

CHAPTER 6A--PUBLIC HEALTH SERVICE

SUBCHAPTER II--GENERAL POWERS AND DUTIES

Part G--Quarantine and Inspection

Sec. 264. Regulations to control communicable diseases

(a) Promulgation and enforcement by Surgeon General

The Surgeon General, with the approval of the Secretary, is authorized to make and enforce such regulations as in his judgment are necessary to prevent the introduction, transmission, or spread of communicable diseases from foreign countries into the States or possessions, or from one State or possession into any other State or possession. For purposes of carrying out and enforcing such regulations, the Surgeon General may provide for such inspection, fumigation, disinfection, sanitation, pest extermination, destruction of animals or articles found to be so infected or contaminated as to be sources of dangerous infection to human beings, and other measures, as in his judgment may be necessary.

(b) Apprehension, detention, or conditional release of individuals

Regulations prescribed under this section shall not provide for the apprehension, detention, or conditional release of individuals except for the purpose of preventing the introduction, transmission, or spread of such communicable diseases as may be specified from time to time in Executive orders of the President upon the recommendation of the National Advisory Health Council and the Surgeon General.

(c) Application of regulations to persons entering from foreign countries

Except as provided in subsection (d) of this section, regulations prescribed under this section, insofar as they provide for the apprehension, detention, examination, or conditional release of individuals, shall be applicable only to individuals coming into a State or possession from a foreign country or a possession.

(d) Apprehension and examination of persons reasonably believed to be infected

On recommendation of the National Advisory Health Council, regulations prescribed under this section may provide for the apprehension and examination of any individual reasonably believed to be infected with a communicable disease in a communicable stage and (1) to be moving or about to move from a State to another State; or (2) to be a probable source of infection to individuals who, while infected with such disease in a communicable stage, will be moving from a State to another State. Such regulations may provide that if upon examination any such individual is found to be infected, he may be detained for such time and in such manner as may be reasonably necessary. For purposes of this subsection, the term ``State'' includes, in addition to the several States, only the District of Columbia.

(July 1, 1944, ch. 373, title III, Sec. 361, 58 Stat. 703; 1953 Reorg. Plan No. 1, Secs. 5, 8, eff. Apr. 11, 1953, 18 F.R. 2053, 67 Stat. 631; July 12, 1960, Pub. L. 86-624, Sec. 29(c), 74 Stat. 419; June 23, 1976, Pub. L. 94-317, title III, Sec. 301(b)(1), 90 Stat. 707.)

Sec. 269. Bills of health

(a) Detail of medical officer; conditions precedent to issuance; consular officer to receive fees

Except as otherwise prescribed in regulations, any vessel at any foreign port or place clearing or departing for any port or place in a State or possession shall be required to obtain from the consular officer of the United States or from the Public Health Service officer, or other medical officer of the United States designated by the Surgeon General, at the port or place of departure, a bill of health in duplicate, in the form prescribed by the Surgeon General. The President, from time to time, shall specify the ports at which a medical officer shall be stationed for this purpose. Such bill of health shall set forth the sanitary history and condition of said vessel, and shall state that it has in all respects complied with the regulations prescribed pursuant to subsection (c) of this section. Before granting such duplicate bill of health, such consular or medical officer shall be satisfied that the matters and things therein stated are true. The consular officer shall be entitled to demand and receive the fees for bills of health and such fees shall be established by regulation.

(b) Collectors of customs to receive originals; duplicate copies as part of ship's papers

Original bills of health shall be delivered to the collectors of customs at the port of entry. Duplicate copies of such bills of health shall be delivered at the time of inspection to quarantine officers at such port. The bills of health herein prescribed shall be considered as part of the ship's papers, and when duly certified to by the proper consular or other officer of the United States, over his official signature and seal, shall be accepted as evidence of the statements therein contained in any court of the United States.

(c) Regulations to secure sanitary conditions of vessels

The Surgeon General shall from time to time prescribe regulations, applicable to vessels referred to in subsection (a) of this section for the purpose of preventing the introduction into the States or possessions of the United

States of any communicable disease by securing the best sanitary condition of such vessels, their cargoes, passengers, and crews. Such regulations shall be observed by such vessels prior to departure, during the course of the voyage, and also during inspection, disinfection, or other quarantine procedure upon arrival at any United States quarantine station.

(d) Vessels from ports near frontier

The provisions of subsections (a) and (b) of this section shall not apply to vessels plying between such foreign ports on or near the frontiers of the United States and ports of the United States as are designated by treaty.

(e) Compliance with regulations

It shall be unlawful for any vessel to enter any port in any State or possession of the United States to discharge its cargo, or land its passengers, except upon a certificate of the quarantine officer that regulations prescribed under subsection (c) of this section have in all respects been complied with by such officer, the vessel, and its master. The master of every such vessel shall deliver such certificate to the collector of customs at the port of entry, together with the original bill of health and other papers of the vessel. The certificate required by this subsection shall be procurable from the quarantine officer, upon arrival of the vessel at the quarantine station and satisfactory inspection thereof, at any time within which quarantine services are performed at such station.

(July 1, 1944, ch. 373, title III, Sec. 366, 58 Stat. 705.)

Sec. 271. Penalties for violation of quarantine laws

(a) Penalties for persons violating quarantine laws

Any person who violates any regulation prescribed under sections 264 to 266 of this title, or any provision of section 269 of this title or any regulation prescribed thereunder, or who enters or departs from the limits of any quarantine station, ground, or anchorage in disregard of quarantine rules and regulations or without permission of the quarantine officer in charge, shall be punished by a fine of not more than $1,000 or by imprisonment for not more than one year, or both.

(b) Penalties for vessels violating quarantine laws

Any vessel which violates section 269 of this title, or any regulations thereunder or under section 267 of this title, or which enters within or departs from the limits of any quarantine station, ground, or anchorage in disregard of the quarantine rules and regulations or without permission of the officer in charge, shall forfeit to the United States not more than $5,000, the amount to be determined by the court, which shall be a lien on such vessel, to be recovered by proceedings in the proper district court of the United States. In all such proceedings the United States attorney shall appear on behalf of the United States; and all such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

(c) Remittance or mitigation of forfeitures

With the approval of the Secretary, the Surgeon General may, upon application therefor, remit or mitigate any forfeiture provided for under subsection (b) of this section, and he shall have authority to ascertain the facts upon all such applications.

(July 1, 1944, ch. 373, title III, Sec. 368, 58 Stat. 706; June 25, 1948, ch. 646, Sec. 1, 62 Stat. 909; 1953 Reorg. Plan No. 1, Secs. 5, 8, eff. Apr. 11, 1953, 18 F.R. 2053, 67 Stat. 631.)

13.1.2 Title 42 Code of Federal Regulations

TITLE 42--PUBLIC HEALTH
CHAPTER I--PUBLIC HEALTH SERVICE, DEPARTMENT OF HEALTH AND HUMAN SERVICES
PART 71--FOREIGN QUARANTINE

Subpart C--Notice of Communicable Disease Prior to Arrival

71.21 Radio report of death or illness.

(a) The master of a ship destined for a U.S. port shall report immediately to the quarantine station at or nearest the port at which the ship will arrive, the occurrence, on board, of any death or any ill person among passengers or crew (including those who have disembarked or have been removed) during the 15-day period preceding the date of expected arrival or during the period since departure from a U.S. port (whichever period of time is shorter).

(b) The commander of an aircraft destined for a U.S. airport shall report immediately to the quarantine station at or nearest the airport at which the aircraft will arrive, the occurrence, on board, of any death or ill person among passengers or crew.

(c) In addition to paragraph (a) of this section, the master of a ship carrying 13 or more passengers must report by radio 24 hours before arrival the number of cases (including zero) of diarrhea in passengers and crew recorded in the ship's medical log during the current cruise. All cases of diarrhea that occur after the 24 hour report must also be reported not less than 4 hours before arrival.

(Approved by the Office of Management and Budget under control number 0920-0134)

Subpart D--Health Measures at U.S. Ports: Communicable Diseases

Sec. 71.31 General provisions.

(a) Upon arrival at a U.S. port, a carrier will not undergo inspection unless the Director determines that a failure to inspect will present a threat of introduction of communicable diseases into the United States, as may exist when the carrier has on board individual(s) reportable in accordance with Sec. 71.21 or meets the circumstances described in Sec. 71.42. Carriers not subject to inspection under this section will be subject to sanitary inspection under Sec. 71.41 of this part.

(b) The Director may require detention of a carrier until the completion of the measures outlined in this part that are necessary to prevent the introduction or spread of a communicable disease. The Director may issue a controlled free pratique to the carrier stipulating what measures are to be met, but such issuance does not prevent the periodic boarding of a carrier and the inspection of persons and records to verify that the conditions have been met for granting the pratique.

Sec. 71.32 Persons, carriers, and things.

(a) Whenever the Director has reason to believe that any arriving person is infected with or has been exposed to any of the communicable diseases listed in paragraph (b) of this section, he/she may detain, isolate, or place the person under surveillance and may order disinfection or disinfestation as he/she considers necessary to prevent the introduction, transmission, or spread of the listed communicable diseases.

(b) The communicable diseases authorizing the application of sanitary, detention, and/or isolation measures under paragraph (a) of this section are: cholera or suspected cholera, diphtheria, infectious tuberculosis, plague, suspected smallpox, yellow fever, or suspected viral hemorrhagic fevers (Lassa, Marburg, Ebola, Congo-Crimean, and others not yet isolated or named).

(c) Whenever the Director has reason to believe that any arriving carrier or article or thing on board the carrier is or may be infected or contaminated with a communicable

disease, he/she may require detention, disinsection, disinfection, disinfestation, fumigation, or other related measures respecting the carrier or article or thing as he/she considers necessary to prevent the introduction, transmission, or spread of communicable diseases.

Sec. 71.33 Persons: Isolation and surveillance.

(a) Persons held in isolation under this subpart may be held in facilities suitable for isolation and treatment.

(b) The Director may require isolation where surveillance is authorized in this subpart whenever the Director considers the risk of transmission of infection to be exceptionally serious.

(c) Every person who is placed under surveillance by authority of this subpart shall, during the period of surveillance:

(1) Give information relative to his/her health and his/her intended destination and report, in person or by telephone, to the local health officer having jurisdiction over the areas to be visited, and report for medical examinations as may be required;

(2) Upon arrival at any address other than that stated as the intended destination when placed under surveillance, or prior to departure from the United States, inform, in person or by telephone, the health officer serving the health jurisdiction from which he/she is departing.
(d) From time to time the Director may, in accordance with section 322 of the Public Health Service Act, enter into agreements with public or private medical or hospital facilities for providing care and treatment for persons detained under this part.

(Approved by the Office of Management and Budget under control number 0920-0134)

[50 FR 1519, Jan. 11, 1985; 50 FR 3910, Jan. 29, 1985]

Sec. 71.34 Carriers of U.S. military services.

(a) Carriers belonging to or operated by the military services of the United States may be exempted from inspection if the Director is satisfied that they have

complied with regulations of the military services which also meet the requirements of the regulations in this part. (For applicable regulations of the military services, see Army Regulation No. 40-12, Air Force Regulation No. 161-4, Secretary of the Navy Instruction 6210.2, and Coast Guard Commandant Instruction 6210.2).

(b) Notwithstanding exemption from inspection of carriers under this section, animals or articles on board shall be required to comply with the applicable requirements of subpart F of this part.

Sec. 71.35 Report of death or illness on carrier during stay in port.

The master of any carrier at a U.S. port shall report immediately to the quarantine station at or nearest the port the occurrence, on board, of any death or any ill person among passengers or crew.

(Approved by the Office of Management and Budget under control number 0920-0134)

Subpart E--Requirements Upon Arrival at U.S. Ports: Sanitary Inspection

Sec. 71.41 General provisions.

Carriers arriving at a U.S. port from a foreign area shall be subject to a sanitary inspection to determine whether there exists rodent, insect, or other vermin infestation, contaminated food or water, or other insanitary conditions requiring measures for the prevention of the introduction, transmission, or spread of communicable disease.

Sec. 71.45 Food, potable water, and waste: U.S. seaports and airports.

(a) Every seaport and airport shall be provided with a supply of potable water from a watering point approved by the Commissioner of Food and Drugs, Food and Drug Administration, in accordance with standards established in title 21, Code of Federal Regulations, parts 1240 and 1250.

(b) All food and potable water taken on board a ship or aircraft at any seaport or airport intended for human consumption thereon shall be obtained from sources approved in accordance with regulations cited in paragraph (a) of this section.

(c) Aircraft inbound or outbound on an international voyage shall not discharge over the United States any excrement, or waste water or other polluting materials. Arriving aircraft shall discharge such matter only at servicing areas approved under regulations cited in paragraph (a) of this section.

Sec. 71.48 Carriers in intercoastal and interstate traffic.

Carriers, on an international voyage, which are in traffic between U.S. ports, shall be subject to inspection as described in Secs. 71.31 and 71.41 when there occurs on board, among passengers or crew, any death, or any ill person, or when illness is suspected to be caused by insanitary conditions.

13.2 Gastrointestinal Illness Surveillance System

13.2.1 Introduction
13.2.2 Forms

13.2.1 Introduction

purpose

The following forms are provided as guides to standardize the collection of information required to assess the patterns of gastrointestinal illnesses and monitor for outbreaks aboard vessels. These forms are downloadable at the Vessel Sanitation Program website: http://www.cdc.gov/nceh/vsp .

13.2.2 Forms

Gastrointestinal Illness Surveillance System Log

Vessel _____ **Voyage Number** _____ **Dates: From:** _____/____/_____ **To:** _____/_____/_____ **Page** ____ **of** ____ **for voyage**

Total Number of Passengers Aboard _____ **Total Number of Passengers Ill** _____ **Total Number of Crew Aboard** _____ **Total Number of Crew Ill** _____

Date (mm/dd/yyyy)	Name Last, First	Age	M / F	Pax / Crew	Crew Position	Cabin No.	Meal Seat	Illness Onset		Diarrhea			Vomiting		Fever		Stool Specimen		Antidiarrheal Medication Y/N	Underlying Illness (Specify)
								Date (mm/dd/yyyy)	Time (hr:min AM / PM)	Y/ N	#	Blood Y/N	Y/ N	#	Y/ N	°F	Req Y/ N	Rec Y/ N		

 # = Episodes / 24 Hours

Gastrointestinal Illness Surveillance System
Antidiarrheal Medications Total Daily Sales / Dispensed Log

Vessel _____ Voyage Number _____ Dates: From: _____/____/_____ To: _____/_____/_____

Page ____ of ____ for voyage

Date (mm/dd/yyyy)	Drug Name	# Tablets or ml	Dose	Date (mm/dd/yyyy)	Drug Name	# Tablets or ml	Dose

2000

Gastrointestinal Illness Surveillance System Questionnaire

(To be completed if you have experienced gastrointestinal illness)

Vessel Name (1) _____ **Date** (2) _____

Last Name (3) _____ **First Name** (4) _____

Date of Birth (5) _____ (mm/dd/yyyy) **Age** (6) _____ **Sex** (7) Male / Female

Cabin Number (8) _____ **Total Number People in Cabin** (10) _____

Dining Seating (9) _____ **Dining Table Number** (11) _____

Symptoms Started Date: (12) _____ **Time:** (13) _____ AM / PM

Do you know other people with the same symptoms? (14) Yes / No

If Yes, Please, List Names: (15)_____

Did you stay overnight or longer in the boarding port before you joined the vessel?

(16) Yes / No **Where?** (17) _____ **How many days?** (18) _____

What do you think is the cause of your illness? (19) _____

_____

PLEASE TURN THIS FORM OVER TO PROVIDE FOOD AND ACTIVITIES HISTORY

Confidentiality: All personal medical information received by CDC personnel shall be protected in accordance with applicable federal law, including 5 U.S.C. Section 552a. Privacy Act - Records maintained on individuals and the Freedom of Information Act. 5 U.S.C. Section 552. Administrative Procedure - Public information; agency rules, opinions, orders, records, and proceedings.

2000

Last Name _____ **First Name** _____

Meal and Activities - Aboard Vessel and On Shore Prior to Illness

Please list the *specific* vessel or shore locations of the meals you consumed and the vessel and shore activities you participated in before you became ill:

Day of Illness Onset		Day Before		Two Days Before		Three Days Before	
Meal / Activity	**Location & Name of Event**	**Meal / Activity**	**Location & Name of Event**	**Meal / Activity**	**Location & Name of Event**	**Meal / Activity**	**Location & Name of Event**
Breakfast (20)		Breakfast (27)		Breakfast (34)		Breakfast (41)	
AM Activity (21)		AM Activity (28)		AM Activity (35)		AM Activity (42)	
Lunch (22)		Lunch (29)		Lunch (36)		Lunch (43)	
PM Activity (23)		PM Activity (30)		PM Activity (37)		PM Activity (44)	
Dinner (24)		Dinner (31)		Dinner (38)		Dinner (45)	
Evening Activity (25)		Evening Activity (32)		Evening Activity (39)		Evening Activity (46)	
Other Meals / Activities During Day (26)		Other Meals / Activities During Day (33)		Other Meals / Activities During Day (40)		Other Meals / Activities During Day (47)	

13.3 Gastrointestinal Illness Surveillance System Reporting

13.3.1 Introduction
13.3.2 Procedures

13.3.1 Introduction

Operations Manual

The details of the Gastrointestinal Illness Surveillance data collection and notification system are contained in the VSP Operations Manual in Chapter 4.

Following are some sample itineraries of vessels that may call upon a U.S. port. The ports where the routine gastrointestinal illness surveillance report is required at least 24 hours before arrival, but not more than 30 hours, are marked with an **»**.

sample itineraries

Itinerary A

Port Everglades, FL
at Sea
at Sea
St. Thomas, U.S. VI
Philipsburg, St. Maarten
at Sea
Nassau, Bahamas
Port Everglades, FL »

Itinerary B

Vancouver, BC
at Sea
Juneau, AK »
Ketchikan, AK
Sitka, AK
at Sea
Seward, AK
Vancouver, BC

Itinerary C

Barcelona, Spain
at Sea
at Sea
at Sea
St. Thomas, U.S. VI »
at Sea
Port Everglades, FL

[Note: The report in this itinerary includes passengers and crew members during the 15 days prior to arrival in St. Thomas, U.S. VI.]

Itinerary D

Miami, FL
at Sea
St. Barthélemy, French W.I.
San Juan, PR »
St. Thomas, U.S. VI
at Sea
Freeport, Bahamas
Miami, FL »

13.3.2 Submission Procedures

The reports may be submitted as follows:

telephone

Telephone: 800-323-2132 or 954-356-6650

fax

Fax: 954-356-6671

e-mail

Electronic Mail: vsp-report@cdc.gov

website

Secure Website (Special Password Required):

http://www.cdc.gov/nceh/programs/sanit/vsp/giss.htm

telephone call required

A telephone notification to the Vessel Sanitation Program at the telephone numbers listed above shall accompany a special 2% report required when the vessel is within 15 days of expected arrival at a U.S. port, even when the special 2% report is submitted via fax, electronic mail or website.

13.4 Gastrointestinal Illness Outbreak Investigation

13.4.1 Introduction
13.4.2 Objectives
13.4.3 Outbreak Investigation Procedures
13.4.4 Report
13.4.5 Gastrointestinal Illness Specimens
13.4.6 Food and Water Samples

13.4.1 Introduction

introduction

Outbreaks of gastrointestinal illness aboard cruise ships are relatively infrequent occurrences. Since implementation of the cooperative program between the cruise industry and the VSP, the outbreak rate on vessels each year has steadily declined.

vigilance

Ongoing vigilance and rapid outbreak detection and response is still warranted. Since so many people share the same environment, meals and water, disease can often spread quickly to passengers and crew members on the vessel and overwhelm the vessel's medical system. The infection can also continue unabated between cruises, if the proper interventions are not instituted.

consultation

An outbreak of gastrointestinal illness occurs aboard a vessel when the number of cases are in excess of expected levels for a given time period. When the cumulative proportion of reportable cases of gastrointestinal illness reaches 2% among passengers or 2% among crew, and the vessel is within 15 days of arrival at a U.S. Port, the vessel shall submit a special report to VSP. This will provide~~s~~ an early opportunity for consultation to potentially avert more illness among passengers and crew members.

monitoring

In most instances, a 2% proportion of illness will not lead to an investigation aboard the vessel, but will provide the opportunity to discuss and monitor illness patterns, and collaboratively develop intervention strategies. Members of the VSP staff are available at anytime to discuss disease transmission and intervention questions.

investigation

When the cumulative proportion of reportable cases of gastrointestinal illness reaches 3% among passengers or 3% among crew members, the VSP may conduct an investigation on board a vessel. This investigation will be performed by a qualified epidemiologist in collaboration with environmental health officers and infectious disease program personnel at CDC and appropriate state and local, and international health authorities. Outbreak investigations may also be conducted by the vessel medical staff, under the guidance of, and in cooperation with the VSP.

special circumstances

Under special circumstances, when an unusual gastrointestinal illness pattern or disease characteristic is found, an investigation may be conducted when the proportion of cases is less than 3%. These special circumstances may include a high incidence of illness in successive cruises, unusual severity of illnesses or complications, or a large number of persons reporting the illness over a brief period of time.

rapid response

Conducting an outbreak investigation aboard a vessel demands a rapid, organized, and comprehensive response. Because of the turnover of passengers, and sometimes the crew members, the investigation must be rapid to be able to collect data needed to identify the cause.

collaboration

The investigation is a collaborative effort between the cruise line, the passengers and crew members aboard the vessel, and CDC. An organized plan drafted between the organizations and individuals involved, therefore, is crucial in conducting a successful investigation, a comprehensive effort that includes epidemiologic, environmental, and laboratory studies. Recommendations based on the success of the investigation can then be implemented to prevent a recurrence on the following cruise.

13.4.2 Objectives

objectives

The objectives of an investigation are to:

(1) Determine the extent of the gastrointestinal illness among passengers and crew;

(2) Identify the agent causing the illness;

(3) Identify risk factors associated with the illness; and

(4) Formulate control measures to prevent the spread of the illness.

13.4.3 Outbreak Investigation Procedures

contingency plan

The early stages of an investigation are usually coordinated aboard the vessel by the vessel's medical staff in cooperation with engineering staff and hotel staff. It is important to have a coordinated contingency plan in place on board the vessel before the need for plan implementation. All staff with a potential for involvement investigation should be familiar with the contingency plan.

periodic review

This preliminary preparation will assist the vessel with the necessary rapid implementation of investigation and response measures before the arrival of the VSP team. The outbreak contingency plan should be periodically reviewed to ensure it will still meet the vessel's needs in dealing with an outbreak.

specimens and samples

Timely collection of medical specimens and food and water samples are important in the disease investigative process. The proper materials and techniques for collection and preservation are a part of the planning. It is important to periodically review these to make sure they are on hand and ready to use in the event they are needed.

ready to use

A list of recommended medical specimen and food sample collection supplies for investigating gastrointestinal outbreaks may be found in sections 13.4.5 and 13.4.6 of this annex. Vessels, with no medical staff aboard may choose to stock items 1-9 only unless there is a qualified staff member aboard, capable of performing venipuncture for collection of serum specimens.

In order to assist in the rapid evaluation of the extent of illness among passengers and crew, to identify the causative

useful information

pathogen and associated risk factors, the VSP may request the following items:

(1) the gastrointestinal illness surveillance log for the duration of the current cruise;

(2) self-administered 72 hour food and activity questionnaires completed by cases;

(3) records of total daily sales of antidiarrheal medication;

(4) daily newsletters distributed to passengers;

(5) a complete list of food items and menus served to both crew and passengers for the 72 hour period before the peak onset of illness date of most cases; and

(6) a complete list of ship and shore activities of passengers for the cruise.

survey

Additionally, VSP may request distribution of a survey to all passengers and crew members. VSP will provide this survey to the vessel. Completed surveys should be held in the infirmary until collection by VSP staff for epidemiologic analysis.

interviews

Interviews with cases may also be useful for identifying the etiology and associated risk factors of an outbreak. When distributing the surveys, the medical staff should advise the cases that interviews may be requested when VSP arrives at the vessel.

13.4.4 Report

preliminary report

Following an outbreak investigation, a preliminary report of findings based on available clinical and epidemiologic information, environmental inspection reports of the investigation, and interim recommendations, will be presented to the master of the vessel. Based on preliminary findings, additional materials, including additional passenger and crew information, may be requested from the cruise line or the vessel and follow-up studies may be undertaken, to address specific suspicions or concerns.

The report presented to the master of the vessel will remain

final report

preliminary until more extensive epidemiologic and laboratory studies have been completed, and a final report containing summary recommendations has been distributed.

13.4.5 Gastrointestinal Illness Specimens

Gastrointestinal Illness Specimen Supplies

specimen supplies

(1) 20-50 wide-mouth plastic jars or specimen cups with screw caps for stool specimens;

(2) 20 plastic bags for storing specimen cups;

(3) Disposable medical gloves;

(4) Plastic disposable spoons for collecting stool

(5) 20 sterile bottles or tubes containing bacterial preservative and transport medium (e.g., Cary-Blair);

(6) Sterile swabs;

(7) Rectal swabs;

(8) Stool preservative medium for parasites;

(9) A large commercial roll of plastic wrap;

(10) Sterile phlebotomy supplies for obtaining serum specimens (needles, syringes, swabs);

(11) Sterile pipettes;

(12) 20 serum separator tubes (containing no anticoagulant [red tops]); and

(13) 20 nunc tubes for serum separation

Specimen Collection

specimen collection

It may be advisable to collect clinical specimens of stool, vomitus or serum from passengers and crew members with reportable cases of gastrointestinal illness. Timely notification of the vessel as to what samples and information will be required is essential. Collection of specimens for analysis for viruses, bacteria or parasites may be recommended depending upon the likely etiology of disease.

request procedures

It is recommended that specimens be requested from patients during clinical evaluation in the infirmary, or subsequent to infirmary visits by direct contact with or letter from medical staff. Individuals asked to provide specimens should each be provided with disposable gloves, 2 specimen cups, a disposable spoon, and plastic wrap. The following is suggested language for a letter to passengers for request of stool specimens as well as instructions to passengers and crew for collection of stool:

Request to Passengers for Stool Specimens

specimen request

The [U.S. Public Health Service /Name of Cruise Line/ Medical Department] is requesting stool specimens from some people who became ill with gastrointestinal illness on the cruise. Please give one cup to a friend who has recently become ill and use the other cup for yourself. Put your next bowel movement into the cup and return the cup to the hospital as soon possible so it can be refrigerated.

Patient Instructions

patient instructions

(1) Urinate into the toilet (if you feel the need).

(2) Wash and dry hands.

(3) Lift the toilet seat. Place sheets of plastic wrap over the toilet bowl, leaving a slight dip in the center. Place the toilet seat down. Pass some stool onto the plastic wrap. Do not let urine (if possible) or water touch the stool specimen.

(4) Using the spoon given to you, place bloody, slimy or whitish areas of the stool into the container first. Fill the cup at least 2/3 full, if possible.

(5) Tighten the cap.

(6) Wash hands.

(7) Label the specimen jar with your name, the date, and your cabin number.

Medical Staff Instructions

specimen labeling

Please ensure that each specimen is properly labeled with:

(1) Date of collection;

(2) Passenger or crew member name and date of birth (or a unique identifying number with a separate log linked to name and date of birth); and

(3) Notation on use of antidiarrheal or antibiotic medication.

collection, storage, and transport

Complete guidelines for collection and storage of specimens for viral, bacterial and parasite analysis are listed below, although it may not be necessary to implement all procedures during each investigation. Transport of specimens will be arranged in collaboration with VSP.

Guidelines for Collecting Fecal Specimens for Viral Diagnosis
(Modified from *MMWR*, 1990; 39, [RR-5];19.)

Stool for Viral Diagnosis

first 48 hours

(1) Collect stool specimens in the first 48 hours. Specimen collection should not await the results of epidemiologic and other investigations because delay will almost certainly preclude a viral diagnosis. If information gathered subsequently indicates that a viral etiology is unlikely, the specimens can be discarded.

bulk specimens

(2) Collect 10 diarrhea bulk specimens, if possible. Bulk specimens, enough to fill a large stool cup, are preferred. Serial specimens from persons with acute, frequent, high-volume diarrhea are particularly useful. The smaller the specimen and the more formed the stool, the lower the diagnostic yield. Rectal swabs are of little or no value in viral detection. Specimens from at least 10 ill persons should be collected to maximize the chance that a diagnosis can be made. The diagnostic yield is low when specimens from <10

persons are submitted.

storage temperature

(3) Store specimens at 4°C (40°F). Freezing may destroy the characteristic viral morphology that permits a diagnosis by electron microscopy.

prevent cross-contamination

(4) Special care must be taken to prevent cross-contamination of specimens during collection and transport because new amplification techniques are exquisitely sensitive.

Paired Serum Specimens for Viral Diagnosis

timing

(1) Acute-period serum specimens should be collected during the first 5 days of symptoms. The convalescent-period serum specimen should be collected during the third to sixth week after illness.

number

(2) Collect 10 pairs from ill persons (the same persons submitting stool specimens) and 10 pairs from well persons.

quantity

(3) Serum specimens from adults should be 10 mL and serum specimens from children should be 3 mL.

red top tubes

(4) Storage tubes containing no anticoagulant (tubes with red tops) should be used for collection.

processing

(5) If a centrifuge is available, centrifuge the specimen for 10 minutes and remove the serum using a pipette. If no centrifuge is available, the blood specimens can sit in a refrigerator until a clot has formed; remove the serum using pipettes, as above.

storage

(6) Place the serum into an empty nunc tube, label, then refrigerate. Do not freeze.

Other Specimens for Viral Diagnosis

water, food, and environmental samples

Viruses causing gastroenteritis cannot routinely be detected in water, food, or environmental samples. Viruses have been successfully detected in vomitus specimens. These should be collected and sent using same methodology as for stool specimens.

Guidelines for Collecting Fecal Specimens for Bacteriologic Diagnosis

media temperature

(1) Before use, the transport media should be stored in a refrigerator or at room temperature. If the transport media is stored at room temperature, it should normally be chilled for 1 to 2 hours by refrigeration before use.

rectal swabs

(2) At least 2 rectal swabs or swabs of fresh stools should normally be collected for bacterial analysis and placed in refrigerated Cary-Blair transport media.

methodology

(3) It is recommended that the swabs be inserted initially into the transport media to moisten, then inserted about 1 to 1-1/2 inches into the rectum, gently rotated, and removed for insertion individually into the same tube of transport media.

visible fecal material

(4) If possible, there should be visible fecal material on the swabs.

place both in same tube

(5) Both swabs should be inserted into the same tube of media and the swabs pushed completely to the bottom of the tube.

break off stick

(6) The top portion of the stick touching the fingers should be broken off and discarded.

refrigerate specimens

(7) Refrigeration during transport may be accomplished by shipping in an insulated box with frozen refrigerant packs. The specimens shall never be frozen during storage or transport.

Guidelines for Collecting Fecal Specimens for Parasite Diagnosis

parasite specimens

In the event a disease of parasitic etiology is suspected, arrangements for shipment of appropriate specimen containers containing 10% formalin and PVA (polyvinyl-alcohol) will be made.

Food and Water Samples

Food and Water Sample Collection Kit

food sample kit

A recommended food and water sampling kit would include:

sample containers

(1) Sterile sampling containers (15 or more sealable plastic bags and wide-mouth screw top jars; 15 water sample bottles with sodium thiosulfate solution to provide concentration of 100 mg per mL of sample volume; foil or heavy wrapping paper);

collection tools

(2) Sterile specimen collection devices (spoons, tongs, scoop, knife, scissors, swabs and pipettes);

disinfection agents

(3) Disinfection agents (sanitizing solution, 95% ethyl alcohol and propane torch); and

support equipment

(4) Support equipment (plastic gloves, plastic container liners for iced samples, water-proof marking pen for sample identification; roll of adhesive or masking tape; labels; waterproof cardboard tags with ties; insulated ice chests; frozen refrigerant packs).

Food and Water Sampling Procedures

sample plan

Environmental sampling should be directed towards suspect food and sources identified by the preliminary epidemiologic investigation.

aseptic techniques

Food and water samples should be collected using aseptic techniques. Washed and gloved hands and sterile sampling utensils and containers protect the integrity of the sample during collection. Water taps used for collection of water should be sterilized with heat or chemicals and then sample should be collected after a minute of flow time.

sample amount

Approximately 200 grams or 200 mL of sample will usually suffice for the laboratory analytical requirements. Carefully squeeze most of the air out of bag before sealing food samples.

sample identification

Sample numbers should be assigned on each collection container and recorded on a sample log that will accompany samples to the laboratory. Information that identifies the date, time, and location of collection, product information, codes, storage conditions and temperatures for each sample should be recorded on the sample log. Include contact information for the person in charge of collecting the samples on the

vessel.

sample temperatures

Food and water samples should be held below 5°C (41°F), but not frozen. Sufficient frozen refrigerant packs should be used to maintain cold sample temperatures during transport to the laboratory.

13.5 Disinfection Calculations for Water and Equipment

13.5.1 Introduction
13.5.2 Water Chlorination
13.5.3 Equipment Disinfection
13.5.4 Tables

13.5.1 Introduction

Potable water systems and equipment, swimming pools, and whirlpool spas on a vessel may need to be disinfected when there is a possibility of contamination and as a routine part of maintenance. This annex provides tables for calculating the amount of chlorine to be used in emergency chlorination of potable water and for the routine disinfection of potable water systems and equipment, swimming pools, and whirlpool spas.

13.5.2 Water Chlorination

Tables 1 and 2 are for calculating the amount of chlorine to be used in the disinfection of potable water systems, swimming pools, and equipment.

Amounts of chlorine compound shown in:

Table 1 are in GRAMS

Table 2 are in KILOGRAMS.

The “Chlorine Compound” column in Tables 1 and 2 refers to the amount of available chlorine in the compound as stated on the product label. Requirements varying from those shown in the table, for example metric tons of water, available chlorine compounds, or final chlorine concentrations, may be extrapolated.

For example, potable water tanks or freshwater tanks shall be superchlorinated to at least 50 mg/L (ppm) available chlorine when samples taken from these tanks indicate potential contamination with fecal coliform bacteria.

The total amount of 70% chlorine compound required to obtain 50 mg/L (ppm) in 166 metric tons of water is calculated in Example 1. The following example illustrates how to use the tables:

The capacity of a potable tank from which a coliform-positive sample was obtained is 166 metric tons. The vessel has a compound on board containing 70% available chlorine. Using the 70% column in Table 1, detailed in Example 1 below, the amount of chlorine required for 50 ppm is determined as follows:

Follow the “Metric Tons” column stopping at 100 and then proceed across this row until you reach the “50 ppm” column. The amount of chlorine required for 100 tons of water at 50 ppm is 7,150 grams. Do the same for 50, 10, 5, and 1 metric tons. Now total each column.

Example 1. Amount of 70% chlorine compound required for 166 tons of water at 50 parts per million

Metric Tons of Water	**Grams Required 70% Available Chlorine Solution**
	50 ppm column from Table 1
100	7,150.0
50	3,575.0
10	715.0
5	357.5
1	71.5
166 **Total Weight Water**	11,869.0 **grams** or 11.87 **kilograms**

13.5.3. Equipment Disinfection

Figure 1 lists the various chlorine compounds and the amount of the compound required in **grams per liter** of water to produce a solution containing 100 ppm of chlorine. The 100 ppm chlorine solution should be applied as outlined in this manual.

Figure 1. Available chlorine in compounds

Grams per Liter of Available Chlorine	Grams per Liter for 100 ppm
70%	0.143
65%	0.154
25%	0.4
15%	0.7
10%	1.0
5%	2.0

13.5.4 Tables

Table 1. Amount of Chlorine Required in GRAMS to Produce Desired PPM (mg/L)

Chlorine Compound	Metric Tons of Water	PPM Desired 1	2	5	10	50	100
70%	1	1.43	2.86	7.15	14.30	71.50	143.00
	5	7.15	14.30	35.75	71.50	357.50	715.00
	10	14.30	28.60	71.50	143.00	715.00	1,430.00
	50	71.50	143.00	357.50	715.00	3,575.00	7,150.00
	100	143.00	286.00	715.00	1,430.00	7,150.00	14,300.00
65%	1	1.54	3.08	7.70	15.40	77.00	154.00
	5	7.70	15.40	38.50	77.00	385.00	770.00
	10	15.40	30.80	77.00	154.00	770.00	1,540.00
	50	77.00	154.00	385.00	770.00	3,850.00	7,700.00
	100	154.00	308.00	770.00	1,540.00	7,700.00	15,400.00
25%	1	4.00	8.00	20.00	40.00	200.00	400.00
	5	20.00	40.00	100.00	200.00	1,000.00	2,000.00
	10	40.00	80.00	200.00	400.00	2,000.00	4,000.00
	50	200.00	400.00	1,000.00	2,000.00	10,000.00	20,000.00
	100	400.00	800.00	2,000.00	4,000.00	20,000.00	40,000.00

Table 2. Amount of Chlorine Required in KILOGRAMS to Produce Desired PPM (mg/L)

Chlorine Compound	Metric Tons of Water	PPM Desired 1	2	5	10	50	100
15%	1	0.07	0.01	0.03	0.07	0.34	0.70
	5	0.35	0.07	0.17	0.35	1.70	3.50
	10	0.70	0.13	0.34	0.70	3.40	7.00
	50	3.50	0.65	1.70	3.50	17.00	35.00
	100	7.00	1.30	3.40	7.00	34.00	70.00
10%	1	0.01	0.02	0.05	0.10	0.50	1.00
	5	0.05	0.10	0.25	0.50	2.50	5.00
	10	0.10	0.20	0.50	1.00	5.00	10.00
	50	0.50	1.00	2.50	5.00	25.00	50.00
	100	1.00	2.00	5.00	10.00	50.00	100.00
5%	1	0.02	0.04	0.10	0.20	1.00	2.00
	5	0.10	0.20	0.50	1.00	5.00	10.00
	10	0.20	0.40	1.00	2.00	10.00	20.00
	50	1.00	2.00	5.00	10.00	50.00	100.00
	100	2.00	4.00	10.00	20.00	100.00	200.00

13.6 Food Cooking Temperature Alternatives

13.6.1 Introduction
13.6.2 Temperature-Time Alternatives

13.6.1 Introduction

Cooking, to be effective in eliminating pathogens, must be adjusted to a number of factors. These include the anticipated level of pathogenic bacteria in the raw product, the initial temperature of the food, and the food's bulk, which affects the time to achieve the needed internal product temperature. Other factors to be considered include postcooking heat rise and the time the food must be held at a specified internal temperature.

To kill microorganisms, food must be held at a sufficient temperature for the specified time. Cooking is a scheduled process in which each of a series of continuous time/temperature combinations can be equally effective. For example, in cooking a beef roast, the microbial lethality achieved at 121 minutes after it has reached 54°C (130°F) is the same lethality attained as if it were cooked for 3 minutes after it has reached 63°C (145°F).

Cooking requirements are based in part on the biology of pathogens. The thermal destruction of a microorganism is determined by its ability to survive heat. Different species of microorganisms have different susceptibilities to heat. Also, the growing stage of a species (such as the vegetative cell of bacteria, the trophozoite of protozoa, or the larval form of worms) is less resistant than the same organism's survival form (the bacterial spore, protozoan cyst, or worm egg).

. Food characteristics also affect the lethality of cooking temperatures. Heat penetrates into different foods at different rates. High fat content in food reduces the effective lethality of heat. High humidity within the cooking vessel and the moisture content of food aid thermal destruction.

Heating a large roast too quickly with a high oven temperature may char or dry the outside, creating a layer of insulation that shields the inside from efficient heat penetration. To kill all pathogens in food, cooking must bring *all* parts of the food up to the required temperatures for the correct length of time.

The temperature and time combination criteria specified in Part 3-4 of this Code is based on the destruction of *Salmonellae*. This Part includes temperature and time parameters that provide "D" values (decimal log reduction values) that may surpass 7D. For example, at 63°C(145°F), a time span of 15 seconds will provide a 3D reduction of ***Salmonella* enteritidis** in eggs. This organism, if present in raw shell eggs, is generally found in relatively low numbers.

Other foods, fish, and meats that have not been ground or minced, including commercially raised game animal meat, specified as acceptable for cooking at this temperature and time parameter, are expected to have a low level of internal contamination. The parameters are expected to provide destruction of the surface contaminants on these foods.

13.6.2 Temperature-Time Alternatives

Chart 1 - Alternative Temperature Times for 68°C (155°F)

Minimum	
Temperature °C (°F)	**Time**
63 (145)	3 minutes
66 (150)	1 minute
70 (158)	< 1 second (instantaneous)

Chart 2 - Oven Type / Roasting Temperature

Oven Type	Oven Temperature Based on Roast Weight	
	Less than 4.5 kg (10 lbs)	4.5 kg (10 lbs) or More
Still Dry	177°C (350°F) or more	121°C (250°F) or more
Convection	163°C (325°F) or more	121°C (250°F) or more
High Humidity[1]	121°C (250°F)	121°C (250°F)

[1] Relative humidity greater than 90% for at least 1 hour as measured in the cooking chamber or exit of the oven; or in a moisture-impermeable bag that provides 100% humidity.

Chart 3 - Internal Roast Temperature and Holding Time

Temperature		Time in Minutes [1]	Temperature		Time in Minutes [1]
°C	(°F)		°C	(°F)	
54	(130)	121	60	(140)	12
56	(132)	77	61	(142)	8
57	(134)	47	62	(144)	5
58	(136)	32	63	(145)	3
59	(138)	19			

[1] *Holding time may include postoven heat rise.*

Chart 4 - Cooking Exemptions

Food	Provisions
Beef Steak -- Whole-Muscle, Intact	Steak is cooked on top and bottom to a surface temperature of 63°C (145°F) or above and color change is achieved on all surfaces.
Eggs, Fish, Molluscan Shellfish, and Other Meats	Consumer information is provided as specified in 7.3.6.1.1; or a variance is granted as specified in 11.13 of the VSP Operations Manual.

Extracted from *Food Code*, Recommendations of the United States Public Health Service, 1999.

13.7 Warewashing Evaluation

13.7.1 Introduction
13.7.2 Machine Data Plates
13.7.3 Evaluation Procedures
13.7.4 Routine Monitoring

13.7.1 Introduction

13.7.1.1 Methodology Source

resources

The following warewashing machine evaluation procedure was compiled from the NSF International (NSF) brochure Food Service: *Recommended Field Evaluation Procedures for Spray-Type Dishwashing Machines*, 1991, and *Food Code*, 1999. ANSI/NSF 3-1996, *Commercial Spray-Type Dishwashing and Glasswashing Machines* and the CDC / VSP Operations Manual should be consulted for recommended construction and operational parameters.

13.7.1.2 Recommended Evaluation Equipment

The following equipment to conduct warewashing evaluations is recommended:

TMD

(1) Thermocouple or thermistor temperature-measuring device for warewasher operational temperatures;

maximum registering

(2) Maximum registering temperature-measuring device or temperature-sensitive tapes for verifying hot water warewasher final rinse temperature, 73°C (160°F);

wax crayons

(3) *Optional: Calibrated melting temperature wax crayons with melt points set at 82°C (180°F) and another at 91°C (195°F)*;

pressure gauge

(4) Pressure gauge, as applicable, for determining in-line pressure of hot water at injection point of warewasher in the 100-170 kilopascals (15-25 pounds per square inch) range;

chemical test kit

(5) Chemical test kits for different chemical sanitizer types used on the vessel;

flashlight

(6) Flashlight;

tape measure

(7) Tape measure; and

timing device

(8) Watch or stop watch.

calibrated

The temperature-measuring devices and pressure gauges shall be calibrated against standards to ensure reliable warewasher evaluations. The chemical test kits and temperature sensitive tapes shall be maintained as specified by their manufacturer to ensure accuracy.

mercury spills

Mercury-filled maximum registering temperature-measuring devices are subject to breakage and shall be carefully used during the evaluations. If they break, a through clean-up shall be performed before warewashing operations resume.

13.7.2 Machines Data Plates

data plate required

The required manufacturer's data plate shall be studied for correct operating parameters. If data plate indicates a flow pressure, the machine shall have a gauge or a gauge valve to measure it. If manufacturer's data plate does not state a flow pressure, the machine is not required to have a gauge or a gauge valve.

temperature requirements

The temperatures stated on the warewash machine data plate shall be considered minimums. Except for chemical sanitizing machines, the machine should not heat to more than 9°C (15°F) above its minimum temperatures to reduce steam buildup and baking food particles on the articles being washed. Differences will be noted on the tank temperatures when the pumps are activated and when they are not.

conform to ANSI / NSF 3 - 1996

The warewash machine temperatures shall conform to those specified in these guidelines for the specific type of machine. For those manufactured to different temperature standards, evidence shall be furnished that they at least conform to the minimum equivalent standards of ANSI/NSF 3-1996, *Commercial Spray-Type Dishwashing and Glasswashing Machines*.

13.7.3 Evaluation Procedures

13.7.3.1 Operating Procedures

prescraped / racked

(1) Dishes shall be properly prescraped and racked.

scrap trays

(2) The machine prewash “scrap trays” shall be clear of excessive soil and debris.

curtains / baffles

(3) The curtains and baffles on conveyor type machines shall be intact and in their proper position.

conveyor speed

(4) The conveyor speed and cycle times shall be set according to manufacturer’s specifications.

overflow

(5) The overflow standpipe shall be installed, not blocked or leaking.

nozzles aligned

(6) The wash and rinse nozzles shall be properly aligned and provide a uniform spray pattern.

nozzles clear

(7) The wash and rinse nozzles shall be clear of obstructions.

manifolds repair

(8) The wash and rinse manifolds shall be in good repair, properly installed in the machine, and end caps installed.

heating elements

(9) The heating elements used in tanks shall not have mineral or other deposits on them.

strainer clear

(10) The rinse supply line strainer shall be clear of debris.

TMDs accurate

(11) The wash and rinse tanks, and final rinse manifold temperature-measuring devices shall be accurate to ±1.5°C (±3°F).

pressure regulator

(12) The pressure regulator shall be functioning properly.

flow pressure

(13) The flow pressure shall be 100-170 kilopascals (15-25 pounds per square inch).

13.7.3.2 Temperature Evaluation

manufacturer’s instructions

(1) The machine shall be installed and operated in accordance to the manufacturer’s instructions.

warm-up

(2) The machine shall be run through at least two complete cycles before testing unless it has been operating just before

the evaluation. On conveyor machines, this is accomplished by running at least two racks through the machine.

additional warm-up

(3) When minimum temperatures are not indicated on the machine-mounted temperature-measuring devices, additional preevaluation cycles may be run to determine, if higher temperatures are possible.

tank thermometer calibration

(4) Temperatures of the wash water and pumped rinse shall be taken directly from the tanks of the machines and compared against the machine mounted temperature-measuring devices. The evaluation temperature-measuring device probe shall be placed in the tank near the machine mounted temperature-measuring device probe, if possible.

sanitizing rinse TMDs

(5) A maximum registering temperature-measuring device, remote sensing thermocouple or nonreversible thermo-labels such as paper temperature-measuring devices that turn from silver to black or similar device shall be used to confirm the effectiveness of heat sanitization.

rinse exposure

(6) The maximum registering temperature-measuring device shall be attached in a vertical position in a rack that is exposed to the final sanitizing rinse spray at the approximate level of a plate. The nonreversible thermo-labels shall be attached to the center of a dry ceramic plate.

high wash / rinse temperature factor

(7) The effect of the temperatures of the wash water and pumped rinse shall be factored into the evaluation, if the tank thermometers indicate they are above 74°C (165°F). *The maximum-registering TMD may also be checked at the end of each part of the cycle to verify that the wash and rinse temperatures have not been in excess of 71°C (160°F).*

effective sanitization

(8) Effective sanitization shall be evaluated by noting one of the following:

In a mechanical operation, the temperature of the fresh hot water sanitizing rinse as it enters the manifold may not be more than 90°C (194°F), or less than:

(A) For a stationary rack, single temperature machine, 74°C (165°F); or

(B) For all other machines, 82°C (180°F).

(C) A utensil surface temperature of 71°C (160°F) as

measured by an irreversible registering temperature indicator shall be achieved.

indirect methods

(9) *The final rinse spray temperature may be indirectly evaluated by using* a non-reversible thermo-labels attached to manifold or by using a *calibrated melting temperature wax crayons. A mark is made on a dry portion of the final sanitizing rinse manifold or supply line with a crayon that melts at 82°C (180°F) and another that melts at 91°C (195°F)*.

13.7.3.3 Chemical Sanitizing Evaluation

chemical sanitizing

Obtain sample at end of the final chemical sanitizing rinse cycle, and use a sanitizer test kit to confirm sanitizer level is at minimum specified on machine data plate and in these guidelines.

13.7.4 Routine Monitoring

periodic detailed evaluations

Proper warewashing is critical to protecting the health of a vessel's passengers. The procedures provided in this annex may assist the vessel crew in periodically verifying the proper operation of its warewashing machines. Following the manufacturer's recommendations for maintenance and operation will ensure the warewashing machines continue to meet the criteria of these guidelines and standards of ANSI/NSF 3-1996, *Commercial Spray-Type Dishwashing and Glasswashing Machines*.

start-up evaluations

During each warewashing machine's startup, the proper setup and operation of the equipment should be verified with basic checks. These would include checks of the tank, manifold, and curtain assemblies to ensure they are properly installed. Proper operating temperatures should be verified to meet the minimum required temperatures during the start-up.

routine operation evaluations

Periodic operation and temperature checks by the warewashing crew during the warewashing time should detect problems soon after they occur. The person removing the clean and sanitized ware must examine each piece to determine if it is clean. Periodic management checks of the warewashing process during operation verify that the machines are operating properly and the utensils processed are indeed clean and sanitized.

simple records

Simple records can assist in the warewash machine monitoring process. A review of these records can ensure

proper monitoring is being conducted and assist in determining a gradual or severe malfunction of the machine.

13.8 Inspection Report

13.8.1 Report Form

The copy of the VSP Inspection Report form follows on the next page.

During the implementation of the VSP Operation Manual, an electronic version of this form will also be used. Copies of the electronic version will be returned to the cruise line by electronic mail.

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

VESSEL SANITATION INSPECTION REPORT

Vessel Name	Inspection Date		Port	Results Presented To	Score:
Cruise Line	**No. Pax**	**No. Crew**	**Inspection Type**	**Inspected by**	

Item No.	Point Value	Description — **Bold** = Critical Item
DISEASE REPORTING		
01	**4**	**Disease reporting**
02	1	Medical logs maintenance
POTABLE WATER		
03	**5**	**Bunker / production source; Halogen residual**
04	**5**	**Distribution system halogen residual**
05	**5**	**Distibution system halogen analyzer calibrated**
06	2	Halogen analyzer chart recorder maintenance, operation, records; Micro sampling, records
07	**3**	**System protection cross-connections, backflow; Disinfection**
08	1	Filling hoses, caps, connections, procedures; Sample records, valves; System construction, maintenance
SWIMMING POOLS, SPAS		
09	**3**	**Swimming pools / spas halogen residuals**
10	1	Swimming pools / spas maintenance, safety equipment
FOOD SAFETY		
PERSONNEL		
11	**5**	**Food handlers infections, communicable diseases**
12	**4**	**Hands washed; Hygienic practices**
13	**3**	**Management, knowledge, monitoring**
14	1	Outer clothing clean; Jewelry, hair, hand sanitizers
FOOD		
15	**5**	**Food source, sound condition; Food re-service**
16	**5**	**Potentially hazardous food temperatures**
17	2	Temperature practices; Thawing
18	**3**	**Cross-contamination**
19	2	Food protection; Original containers; labeling; In-use food dispensing, preparation utensils

MEDICAL LOG REVIEW

Cruise - Start / End / Port / PAX / ILL / CREW / ILL

1.
2.
3.
4.
5.

Item No.	Point Value	Description — **Bold** = Critical Item
EQUIPMENT		
20	2	PHF temperature maintenance facilities; Food-contact surfaces; Food TMD's
21	1	Nonfood-contact surfaces; Ambient TMD's
22	2	Warewashing facilities; TMD's; Test kits
23	2	Pre-wash; Wash and rinse **solutions**
24	**3**	**Sanitizing rinse**
25	1	Wiping cloths / chef's towels
26	**3**	**Food-contact surfaces equipment / utensils clean; Safe materials**
27	1	Non-food contact surfaces equipment / utensils clean
28	2	Equipment / utensil / linen / single / service storage handling dispensing; Cleaning frequency
TOILET AND HANDWASHING FACILITIES		
29	**3**	**Facilities convenient, accessible, design, installation**
30	1	Hand cleanser, sanitary towels, waste receptacles, handwash signs; Maintenance
TOXIC SUBSTANCES		
31	**5**	**Toxic items**
FACILITIES		
32	1	Solid waste containers
33	1	Decks / bulkheads / deckheads
34	1	Plumbing fixtures / supply lines / drain lines / drains
35	2	Liquid waste disposal
36	1	Lighting
37	1	Rooms / equipment venting
38	1	Unnecessary articles, cleaning equipment; Unauthorized personnel
ENVIRONMENTAL HEALTH		
39	**3**	**IPM program effective; Approved pesticide application**
40	1	IPM procedures; Outer openings protection
41	2	Housekeeping; Child-Activity Centers

Comments:

13.9 Corrective Action Statement

13.9.1 Introduction
13.9.2 Format

13.9.1 Introduction

purpose

VSP has established a procedure for post-inspection reporting of corrective action to encourage the correction of deficiencies noted during an inspection. A signed corrective action statement shall not affect the inspection score.

critical item monitoring

The corrective action statement, particularly for critical items, should include a management monitoring plan to ensure that the procedure or process found out of control will be monitored and controlled in the future. The public health goal of the inspection is to prevent the recurrence of the critical deficiency in the specific instance where it was found and generally in future similar operations aboard the vessel.

publicly available

The corrective action statement shall be appended to the final inspection report for future reference and public distribution, if requested.

e-mail submission

The corrective action statement may be submitted to VSP by electronic mail. Please send it to vsp@cdc.gov , and include your vessel name, corrective action statement and inspection date on the message subject line. It is preferable that the corrective action statement be submitted as an attached word processing format file.

mail submission

The corrective-action statement may also be mailed to:

CDC / Vessel Sanitation Program
1850 Eller Drive - Suite 101
Ft. Lauderdale, FL 33316
USA

13.9.2 Format

Date

example statement

CDC / Vessel Sanitation Program
1850 Eller Drive - Suite 101
Ft. Lauderdale, FL 33316
USA

Dear Sir:

The following actions have been taken to correct each of the deficiencies noted during the inspection of _____(Name of Vessel)_____ on _____(Date)_____, at ____(Port)_____.

Item Number _____Deficiency / Corrective Action_____

1.

2.

3.

(Continue list until all violations have been listed.)

Sincerely,

(*Signature*)

Name
Title
Company

13.10 *Summary of Sanitation Inspections of International Cruise Ships*

13.10.1 Introduction
13.10.2 Format
13.10.3 Contact Information

13.10.1 Introduction

introduction

Every vessel that has a foreign itinerary and that carries 13 or more passengers is subject to twice-yearly inspections and, when necessary, to reinspection by the Centers for Disease Control and Prevention (CDC). To ensure a clean and healthful environment, cruise ships must meet the criteria established by CDC.

The score and the complete inspection report for each inspection are published on the CDC website.

The ship's level of sanitation is acceptable to CDC if its score on the inspection is 86 or higher.

The website address for these scores and inspection reports is: http://www.cdc.gov/nceh/vsp .

13.10.2 Format

online information

The VSP website has a searchable database of inspection report summaries and lists. The complete inspection report information is also retrievable.

lists

Lists

Some of the lists available on the VSP website include:

- Summary of Most Recent Ships Inspected;
- Ships Inspected within Past 2 Months;
- Ships with Not Satisfactory Scores (under 86); and
- Summary of Inspection Scores (Green Sheet).

These lists show the data by:

- Ship Name;
- Inspection Date; and
- Score.

complete report available

Further information can be obtained on a particular ship, including all scores for that ship and a inspection report preview.

The Summary of Inspections with Violations is provided on the VSP website. This report provides a categorical review of the deficiencies noted along with the number of points deducted for that category and the numerical score for the inspection.

The details of the inspection with the specific deficiencies and recommendations are also accessible from this page.

Search

search possibilities

The inspection report data is also searchable from this database within the following search categories:

- Ship Name;
- Inspection Date;
- Most Recent Date;
- All Dates;
- Range of Dates; and
- Score.

Score Categories include:

- All;
- 86 or higher -- Satisfactory Scores; and
- 85 or lower -- Not Satisfactory Scores.

search result sorts

The search results may be sorted by:

- Inspection Date (most recent first);
- Ship Name (alphabetical);
- Score (high-low); and
- Score (low -high).

13.10.3 Contact Information

further information

Further information on the Vessel Sanitation Program and the inspection results and the vessel's corrective action statements maybe obtained through electronic mail at: vsp@cdc.gov , by telephone at 800-323-2132 or via fax at 770-488-4127.

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2.0 Authority

The Public Health Service Act, 42 U.S.C. Section 264. Quarantine and Inspection - Regulations to control communicable diseases.

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Code of Federal Regulations 42 CFR 71.31. Health Measures at U.S. Ports: Communicable Diseases. General provisions.

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