

CHAPTER 224: VETERANS HEALTH ADMINISTRATION: NUTRITION AND FOOD SERVICE

1	Purpose and Scope	224-2
2	Definitions.....	224-2
3	Operating Rationale and Basis of Criteria	224-6
4	Program Data Required (Input Data Questions)	224-7
5	Space Criteria Main Kitchen	224-8
6	Planning and Design Considerations	224-14
7	Functional Relationships.....	224-17
8	Functional Diagram 1 – Conventional Cook / Serve Operation	224-18
9	Functional Diagram 2 – Cook / Blast Chill & Advanced Meal Delivery System.....	224-19

1 PURPOSE AND SCOPE

This document outlines space planning criteria for Chapter 224: Nutrition and Food Services (NFS). It applies to all medical facilities at the Department of Veterans Affairs (VA).

Nutrition and Food Service (NFS) provide meals and nourishments that contribute to the healing and comfort of, and meet the medical and nutritional requirements of Veterans enrolled In VA Healthcare programs.

2 DEFINITIONS

- A. Advanced Delivery System (ADS): A tray delivery system that uses special carts designed to hold food that has been cooked and rapidly chilled, and then rethermalized before meal service. See Tray Retherm Cart in this section.
- B. Advanced Food Preparation System (AFPS): Any food production method that uses equipment to rapidly chill or freeze hot food for use in advance of the meal service. Meal trays are assembled, or food in bulk is portioned in advance of service and kept refrigerated until it is rethermalized. For example, the breakfast meal tray would be assembled the day before it is needed.
- C. Cafeteria-style Serving Unit: A small cafeteria for serving regular and therapeutic diets to ambulatory patients. Includes all space and equipment required for holding, displaying and serving food and beverages so that the patient can make his/her choice of menu items. The menu will include some foods that can be assembled, finished or cooked to order. Components of the Cafeteria-style Serving Unit include short order cooking, serving counters, salad bars, beverage stations, backup units and access or circulation space related to their use. Foods in bulk may be cook/served or cook/chilled.
- D. Central Production Kitchen (CPK): A kitchen designed and equipped to produce a minimum of 5000 meals per day for multiple Satellite Units. In addition to conventional cooking, the CPK uses more than one Advanced Food Preparation System (AFPS). The CPK requires special production equipment, extensive refrigerated and frozen storage, and transportation equipment to deliver food to remote locations. The CPK may be located on a Medical Campus or may be a stand-alone facility. Criteria for the CPK are not included in this chapter. *The Chief, Nutrition and Food Services, must be advised, and a feasibility study conducted before the planning of a CPK is undertaken*
- E. Concept of Operations: A user-developed guide to the functional operation of the VA healthcare facility. It defines the function of the facility and the scope of medical services to be provided in the new or remodeled space.
- F. Cook / Blast-Chill: Blast chilling is the simplest method of rapidly chilling hot food. Food is first prepared in conventional cooking equipment. Most recipes do not need to be adjusted to adapt to chilling and reheating. Within 30 minutes of cooking, food is portioned into 2-1/2" deep pans and placed in a blast chiller for 60 to 90 minutes. Chilled food in pans has a shelf life of five (5) days including the day of preparation and the day of distribution or use. Blast chillers may also be used for rapidly chilling left over food, cold food ingredients, or preparing food in advance for special events.

The recommended minimum volume of meals for a blast-chill system is 150 meals or 450 meals per day.

- G. Cook / Chill Hospitality Cart: Chilled bulk food in pans is loaded into the cart. The cart is fitted with a cabinet below that is programmed to automatically switch from a refrigeration mode to a rethermalizing mode. Food is plated and meals are assembled in the pantry or in a dining room. Food is kept hot with a heated worktop and a heat lamp. Storage for cold plated foods, dishes and wares are on the cart
- H. Cook / Chill Tank: All-purpose equipment capable of both cooking and rapidly chilling food. Solid foods, such as meats, are seasoned and sealed in a pouch. The pouches are placed in the cook/chill tank that uses recirculated hot water to cook the food, followed by ice water to chill it. The tank may also be used to chill food that has been cooked and pumped into pouches. The chilled food has a shelf life of up to 45 days depending on the ingredients.
- I. Cook / Finish to Order (Patient Room Service): A short order cooking line in the kitchen area is used to prepare patient meals upon request. Typically, the cooking equipment is separate from the main cooking equipment. If meal volumes are low, the two may be integrated. Office space and computer software are needed to take orders.
- J. Cook / Freeze: Typically, this method of food production complements Cook/Chill production. Rapid freezing works well for some, but not all foods. Recipes must be adjusted to adapt to freezing and reheating. Using conventional cooking equipment, food is prepared in the same manner as Cook / Serve.
- K. Cook / Serve (Conventional): Food is cooked or heated, and served within a short time span. Conventional cooking equipment is used to bake, roast, steam, fry, braise, broil or boil foods.
- L. Cook / Tumble-Chill: Tumble-Chilling is a method of rapidly chilling high volumes of hot "pumpable" food. Using conventional and high-volume cooking equipment, food is prepared in the same manner as Cook/Serve. Some recipes may be adjusted to adapt to chilling and reheating. Food is pumped into pouches, sealed and placed into a tumble chiller that agitates the pouches in an ice water bath. The shelf life of tumble-chilled food is up to 45 days.
- M. Full-Time Equivalent (FTE): A staffing parameter equal to the amount of time assigned to one full time employee. It may be composed of several part-time employees whose total time commitment equals that of a full-time employee. One FTE equals a 40 hours per week.
- N. Functional Area: The group of rooms or spaces that perform specific functions. Examples of functional areas within NFS are administrative, receiving and storage, food preparation, patient tray service, sanitation and support.
- O. Heat / Serve Prepared Foods: Highly processed prepared foods are heated or warmed before use.
- P. Input Data Statements: A set of questions designed to elicit information about the healthcare project in order to create a Program for Design (PFD) based on the criteria parameters set forth in this document. Input Data Statements could be Mission related, based on the project's Concept of Operations; and Workload or Staffing related, based on projections and data provided by the VHA or the VISN about the

estimated model of operation for the facility. This information is processed through mathematical and logical operations in VA-SEPS.

- Q. Kitchen: A kitchen designed and equipped to produce food for the main facility and one or more Satellite Units. In addition to conventional cooking, the kitchen may use blast-chilling. Due to the cost of equipment and utilities, the use other types of cook/chill food production such as tumble chilling/vacuum packaging, or cook/chill tank production, must be justified. A special study is required.
- R. Non-Patient: A paid or non-paid employee, volunteer, or contractor who is provided with a meal, typically lunch.
- S. Patient Room Service: Patients may request meals anytime during the meal service period, typically, 7 AM to 7 PM. Orders are placed via phone, or spoken to a hostess on the patient floor. If a patient is unable to make a request, a non-select meal tray may be issued. A typical tray assembly area consists of a short-order cooking line, a cook's counter with hot and cold stations on the cook's side and a tray conveyor on the server's side. Typical tray line support equipment is used. This may include carts for trays, dishes, cups and glasses, heated pellets and dishes, and refrigerators for plated cold food, beverages, and desserts. Meals are delivered within 45 minutes of the order.
- T. Peak Volume Single Meal: The maximum number of meals served during a single meal period (Breakfast or Lunch or Dinner). It includes meals served to patients and non-patients in the Satellite Units, and if in Concept of Operations, those served in the Canteen Service Cafeteria.
- U. Peak Volume Meals per Day: The maximum number of meals served during a single day (Breakfast and Lunch and Dinner). It includes meals served to patients and non-patients in the Satellite Units, and if in Concept of Operations, those served in the Canteen Service Cafeteria.
- V. Program for Design (PFD): A space program generated by VA-SEPS based on criteria set forth in this document and specific information entered about Concept of Operations, Workload projections and Staffing levels authorized.
- W. Rethermalization: A technical term for heating cook/chilled or frozen food to a minimum core temperature of 165 degrees F.
- X. Satellite Unit, Campus: Receives meal trays or food in bulk from a Main Kitchen or CPK on the same medical center campus. The Satellite Unit may be connected to the Main Kitchen or CPK via interior corridors and elevators or will require delivery by truck. The food service for each Satellite Unit may vary significantly, ranging from the delivery of ready to serve meal trays, to a tray assembly line, to a patient cafeteria.
- Y. Satellite Unit, Remote: For purposes of space planning, the Remote Satellite Unit is the same as a Campus Satellite Unit, except it is not located on the medical center campus, but is off site within the VISN. Meal trays or food in bulk is transported from the Main Kitchen or CPK via truck. The Remote Satellite Unit may have the capability to prepare part of each day's menu (usually breakfast), as well as simple, basic, but complete menus for several days under emergency conditions. Unless authorized to receive hot food or hot/cold meal trays, food in bulk or trays that are received will be all cold, to be rethermalized on site.
- Z. SEPS (VA-SEPS): Acronym for Space and Equipment Planning System, a digital tool developed by the Department of Defense (DoD) and the Department of Veterans

Affairs to generate a Program for Design (PFD) and an Equipment List for a VA healthcare project based on specific information entered in response to Input Data Questions. VA-SEPS incorporates the propositions set forth all space planning criteria chapters. VA-SEPS has been designed to aid healthcare planners in creating a space plan based on a standardized set of criteria parameters.

- AA. Tray Assembly, Centralized: Meal trays are assembled in the kitchen and then transported on carts to patient floors or pantries. Food used on the central tray line may be hot and cold, or all cold, depending on whether a cook/serve or cook/chill production system is used.
- BB. Tray Assembly, Decentralized: Plated cold food and food in bulk is transported to pantries on patient floors. Meal trays are assembled in pantries.
- CC. Tray Cart, Hot / Cold: A self-contained cart that features one refrigerated section and one heated section. The carts use special trays with separate sections for hot and cold food items. Some use two small trays, one for hot and one for cold food that are combined at the time of service.
- DD. Tray Delivery System, Conventional: Trays are assembled with hot and cold foods, loaded onto standard delivery carts and moved to patient areas. Heated pellets or bases, and heated plates are used to maintain temperatures of hot foods. Insulated or chilled plates are used for cold foods.
- EE. Tray Retherm, Centralized (ADS): There are basically two types of centralized tray retherm. One consists of a walk-in refrigerator fitted with multiple docking stations with one station for each retherm cart. The second consists of individual docking stations that may be arranged in a central location in the Main Kitchen, in the Central Production Kitchen, or in the Satellite Unit. See "Tray Retherm Cart" in this section for additional information.
- FF. Tray Retherm Cart System, Conducted Heat (ADS): The two components of the conducted heat system are a meal tray delivery cart and a docking station for the cart. The cart has two heating pads that rethermalize the chilled hot food items. In the decentralized model, all-cold meal trays are loaded into carts that are moved into roll-in retherm refrigerators located in remote pantries or areas. Before meal service the docking station automatically goes into a retherm mode. The chilled hot food is rethermalized while the cold portion of the tray continues to be refrigerated. In the centralized model carts are rolled into a walk-in refrigerator with multiple retherm docking stations. In both models the retherm cycle is programmed to start automatically or manually. Special dishes are required to heat foods. Cold foods are served on conventional dishes.
- GG. Tray Retherm Cart System, Convected Air (ADS): The two components of the convected air system are a meal tray delivery cart and a docking station for the cart. A meal tray with chilled hot foods on one side and cold foods on the other is placed into the cart. The cart is rolled into a docking station that uses forced air to refrigerate the entire tray. Before meal service the docking station automatically goes into a retherm mode. The chilled hot food is rethermalized while the cold portion of the tray continues to be refrigerated. In the centralized model multiple retherm docking stations are located in the kitchen near the tray line. In the decentralized model, the docking stations are located in the floor pantries or dining rooms. Standard ceramic dishes and wares, or disposable dishes are used.

HH. Workload: The projected number of patient and resident beds or the projected number of meals served.

3 OPERATING RATIONALE AND BASIS OF CRITERIA

- A. Workload projections for planned services for a specific VA medical center, hospital, or satellite outpatient clinic project are provided by the VA Central Office (VACO) / VISN CARES Capacity Projection Model. These projections are generated by methodology based upon the expected veteran population in the respective market / service area. Space planners working on new or renovation projects for VA medical centers, hospitals, or satellite outpatient clinics shall use those projections in conjunction with the criteria parameters set forth herein to generate a space program.
- B. Space Planning criteria have been developed on the basis of an understanding of the activities involved in the functional areas of Nutrition and Food Services and its relationship with other services of the medical facility. These criteria are predicated on established and/or anticipated best practice standards, as adapted to provide environments supporting the highest quality health care for Veterans.
- C. Nutrition and Food Services, as used in these criteria, includes all functions relative to receiving raw, processed, and prepared foodstuffs, their storage, preparation and delivery to the patient. It includes all support activities to ensure that high standards of sanitation and safety are maintained throughout this process.
- D. Requirements for food service operations related to satellite, and remote facilities, as well as Advanced Food Preparation and Advanced Delivery Systems are included to address all possible options available through Nutrition and Food Services in the VA Health Care System.
- E. Spaces assigned are based on equipment (averages) available for each function, space to allow for movement around this equipment, its placement in relation to other pieces of equipment related to the specific function and the practical work flow of staff members and materials as they carry out each function.
- F. All new construction projects should consider the consolidation of VA Canteen Services and Nutrition and Food Services. *The Chief, Canteen Services and the Chief, Nutrition and Foodservices must be advised before planning of a combined VCS and NFS operation is undertaken.*

4 PROGRAM DATA REQUIRED (Input Data Questions)

- A. Mission - Main Kitchen
 - 1. Is a Staff Training and Conference Room authorized? (M)
 - 2. Is Blast-Chill Production authorized? (M)
 - 3. Is a two-day food bank authorized? (M)
 - 4. Is a one-day food bank authorized? (M)
 - 5. Is Bulk Food Rethermalization authorized? (M)
 - 6. Is a tray retherm cart holding refrigerator authorized? (M)
 - 7. Is a central tray retherm refrigerator authorized? (M)
 - 8. Is a centralized tray retherm cart system authorized? (M)
 - 9. Is a High Volume Cook / Chill Center authorized? (M) (Specific feasibility study required)

10. Is a bulk food cart holding area for cook / serve authorized? (M)
11. In an automated Cart Wash Area authorized? (M)
12. Is a Waste Pulper System authorized? (M)
13. Is refrigerated garbage storage authorized? (M)
14. Is a special mechanical system authorized? (M) (Specific feasibility study required)

B. Workload – Main Kitchen

1. How many patient beds in total are projected for this facility? (W)
2. How many Peak Volume Meals per Day are projected? (W)
3. How many Peak Single Meal Trays assembled in the Main Kitchen are projected? (W)
4. How many Patient Beds are designated to receive an assembled tray in the Main Kitchen? (W)
5. How many Patient Beds are designated to receive an all-cold tray assembled in the Main Kitchen? (W)
6. How many Peak Volume Single Meals to be held in bulk in a hot holding cabinet are projected? (W)

C. Staffing – Main Kitchen

1. How many Secretary FTE positions are authorized? (S)
2. How many Clerk FTE positions are authorized? (S)
3. How many Assistant Chief Nutrition and Food Service FTE positions are authorized? (S)
4. How many Internship Director FTE positions are authorized? (S)
5. How many Clinical Administrative Section Chief FTE positions are authorized? (S)
6. How many Dietitian FTE positions are authorized? (S)
7. How many Food Production and Service Foreman FTE positions are authorized? (S)
8. How many Supervisor and Technician FTE positions are authorized? (S)
9. How many Cost Clerk Accountant FTE positions are authorized? (S)
10. How many FTEs will work on peak shift? (Misc)
11. How many FTE positions are not authorized to have office or cubicle space? (Misc)

5 SPACE CRITERIA MAIN KITCHEN

A Main Kitchen Staff and Administrative Areas:

1. **Office, Chief of Nutrition and Food Service (OFM02)150 NSF (14.0 NSM)**
Provide one per Nutrition and Food Service.
2. **Office, Secretary and Waiting (SEC01).....120 NSF (11.2 NSM)**
Provide one per each Secretary FTE position authorized.
3. **Cubicle, Clerk (OFA03)80 NSF (7.5 NSM)**
Provide one per each Clerk FTE position authorized.

4. **Office, Assistant Chief, Nutrition and Food Service (OFA01 / OFA02) 120 NSF (11.2 NSM)**
Provide one per each Assistant Chief, Nutrition and Food Service FTE position authorized; provide OFA01 if standard furniture is authorized; or, OFA02 if systems furniture is authorized.
5. **Office, Internship Director (OFA01 / OFA02)..... 120 NSF (11.2 NSM)**
Provide one per each Internship Director FTE position authorized; provide OFA01 if standard furniture is authorized; or, OFA02 if systems furniture is authorized.
6. **Office, Clinical Administration Section Chief (OFA01 / OFA02)..... 120 NSF (11.2 NSM)**
Provide one per each Clinical Administrative Section Chief FTE position authorized; provide OFA01 if standard furniture is authorized; or, OFA02 if systems furniture is authorized.
7. **Office, Dietitian (OFA01 / OFA02) 100 NSF (9.3 NSM)**
Provide one per each Dietitian FTE position; provide OFA01 if standard furniture is authorized; or, OFA02 if systems furniture is authorized.

Office space for Dietitians who have an office on the patient floors or units are addressed in other chapters.
8. **Office, Food Production and Service Foreman (OFA01 / OFA02)..... 100 NSF (9.3 NSM)**
Provide one per each Food Production and Service Foreman FTE position authorized; provide OFA01 if standard furniture is authorized; or, OFA02 if systems furniture is authorized.
9. **Cubicle, Supervisors / Technicians (OFA03) 80 NSF (7.4 NSM)**
Provide one per each Supervisor and Technician FTE position authorized.
10. **Office, Cost Clerk Accountant (OFA01 / OFA02) 100 NSF (9.3 NSM)**
Provide one per each Cost Clerk Accountant FTE position authorized; provide OFA01 if standard furniture is authorized; or, OFA02 if systems furniture is authorized.
11. **Communications Center, Food Service (COMC1) 180 NSF (16.7 NSM)**
Minimum NSF; provide an additional 80 NSF if number of projected Patient Beds is five hundred or greater.
12. **Training / Conference, Staff (CRA01) 240 NSF (22.3 NSM)**
Provide one if authorized in Concept of Operations.

This room may be shared with other services.

B Staff Lounge, Lockers and Toilets:

The spaces below provide programming of Lounge, Lockers, and Toilets at department / service / chapter level. Alternatively, sum all departments/services data for Lockers, Lounges and Toilets, and program space in Chapter 410-EMS Lockers,

Lounges, Toilets and Showers. Either/or – do not duplicate space. Provide locker space only for those FTEs without office or cubicle space.

1. **Lounge, Staff (SL001)****80 NSF (7.5 NSM)**
Minimum NSF; provide an additional 15 NSF per each projected FTE on peak shift greater than five; maximum 210 NSF.

For less than five FTE combine Lounge facilities with adjacent department or sum in chapter 410.

2. **Locker Room, Staff (LR001)** **80 NSF (7.5 NSM)**
Minimum NSF if total number of FTE positions not authorized to have office or cubicle space is between five and thirteen; provide an additional 6 NSF per FTE position if total number of FTE positions not authorized to have office or cubicle space is greater than thirteen.

Provide locker space only for those FTEs without assigned office or cubicle space. For less than five FTE combine Locker Room facilities with adjacent department or sum in chapter 410.

3. **Toilet, Staff (TLTU1)** **50 NSF (4.7 NSM)**
Minimum one; provide an additional staff toilet for each increment of five projected FTEs on peak shift greater than thirteen.

Separate toilets within the Main Kitchen space are recommended.

C Main Kitchen Receiving and Storage Areas:

1. **Receiving Area (MMRP1)****120 NSF (11.2 NSM)**
Minimum NSF or 0.2 NSF per each projected Peak Volume Meal per Day, whichever is greater; maximum 400 NSF.

The receiving area is used for staging and receiving food and supplies, holding empty returns such as bakery racks, holding used cooking oil for pick-up, and general circulation space for outgoing waste containers.

2. **Storage, Non-Food (SRS01)****100 NSF (9.3 NSM)**
Minimum NSF or 0.2 NSF per each projected Peak Volume Meal per Day, whichever is greater; maximum 500 NSF.

New (replacement) china, glassware, small utensils used in cooking such as spatulas, hand whisks, paring knives; aprons, hats, gloves; and paper goods used in tray service are stored in this room.

3. **Storage, Dry Food and Ingredient Control (SRS01)****100 NSF (9.3 NSM)**
Minimum NSF or 0.5 NSF per each projected Peak Volume Meal per Day, whichever is greater.

The Ingredient Control Room is an area where dry menu ingredients, canned and frozen fruits and vegetables are stored, assembled, weighed, measured, packaged, and if possible, pre-combined according to standardized recipes. In

some climates, temperature and humidity control may be required. Space allocation is based on a one-week supply.

4. **Storage, Refrigerated and Frozen Food (RER01) 200 NSF (18.6 NSM)**
Minimum NSF or 0.7 NSF per each projected Peak Volume Meal per Day, whichever is greater.

Raw and finished foods for general use are held at appropriate temperatures in this area. The total walk-in box area for is typically 30% refrigerator and 70% freezer. This ratio may be changed to accommodate the desired proportion of convenience vs. fresh prepared products. Space allocation is based on a one-week supply. Refrigerated storage for Cook/chill food in bulk or all-cold meal trays is addressed in another section.

D Main Kitchen Food Preparation Areas:

1. **Food Preparation and Production (FSTD1)..... 500 NSF (46.5 NSM)**
Minimum NSF if projected number of Peak Volume Meals per Day is three hundred; provide an additional 0.75 NSF per each projected Peak Volume Meal per Day greater than three hundred.

Food Preparation and Production are the activities that occur from the time ingredients leave the Ingredient Control Room until the prepared menu items are brought to the point of use or service. Circulation space to access adjacent areas is included in this space.

2. **Storage, Refrigerated Blast-Chilled Food (Two-Day Food Bank) (SRS01)..... 100 NSF (9.3 NSM)**
Minimum NSF or 0.2 NSF per each projected Peak Volume Meal per Day, whichever is greater, if Blast-Chill Production is authorized and if a two-day food bank is authorized.

This refrigerated storage is for a two-day supply (Food Bank) of blast-chilled food. A dedicated walk-in refrigerator or roll-in refrigerator that maintains a temperature of 33 degrees F. is required. Refrigerated storage used by the kitchen for other purposes is not suitable for blast-chilled foods. The recommended minimum volume of meals for a blast-chill system with a food bank to support a 5-day production cycle is 450 meals per day.

3. **Storage, Refrigerated Blast-Chilled Food (One-Day Food Bank) (SRS01) 100 NSF (9.3 NSM)**
Minimum NSF or 0.1 NSF per each projected Peak Volume Meal per Day, whichever is greater, if Blast-Chill Production is authorized and if a one-day food bank is authorized.

This refrigerated storage is for a one-day supply of blast-chilled food. A dedicated walk-in refrigerator or roll-in refrigerator that maintains a temperature of 33 degrees F. is required. Refrigerated storage used by the kitchen for other purposes is not suitable for blast-chilled foods.

4. **Cook / Chill Center, High Volume (FSSC1) TBD NSF (TBD NSM)**
Provide based on specific feasibility study.

This is a component of a Kitchen that is equipped for a cook/chill operation with equipment other than a blast-chiller. Equipment such as a tumble-chiller or a cook/chill tank may be desired. The Chief, Nutrition and Food Services, must be advised, and a feasibility study conducted before the planning of a High Volume Cook/Chill Center is undertaken.

5. **Rethermalization of Bulk Food (FSSC1).....40 NSF (3.7 NSM)**
Provide one if authorized in Concept of Operations; provide an additional 40 NSF for each increment of two hundred projected Patient Beds, minimum portion 40.

Space for a combination oven/steamer will be included in the Food Preparation and Production area. A combination oven/steamer may be used for rethermalizing rapid chilled foods or for conventional cooking.

6. **Nourishment Preparation (FSNP1).....250 NSF (23.2 NSM)**
Provide one if the total projected number of Peak Volume Meals per day is 250 or greater.

Nourishment preparation will be included in the Food Preparation and Production area. This is an area used to prepare special medical diets under stringent aseptic control.

E Main Kitchen Patient Tray Service Areas:

1. **Tray Assembly Area (FSTD1)340 NSF (31.6 NSM)**
Minimum NSF if the projected number of Peak Single Meal Trays assembled in the Main Kitchen is between 50 and 150; provide additional NSF per Table 1 below.

TABLE 1: TRAY ASSEMBLY AREA CALCULATION

PEAK SINGLE MEAL NUMBER OF TRAYS	NUMBER OF TRAY LINES	TOTAL NSF	TOTAL NSM
50 - 150	1	340	31.6
151 - 250	1	580	53.9
251 - 350	1	750	69.7
351 - 450	1	920	85.5
451 - 600	2	1500*	139.4
601 - 900	2	1830*	170.0

*Two lines moving simultaneously

This area includes on-line preparation of foods (if cook/serve, grilled items, toast), holding, assembly and loading of all food and beverage items on individual trays for delivery to patients' bedsides and to dining room(s) when the cafeteria tray line is not used. It includes space for refrigerated back up units, dish dispensers, beverage station and cart staging and loading areas.

2. **Tray Cart Storage Area, Clean Carts (FSCS1).....100 NSF (9.3 NSM)**
Minimum NSF or 1.0 NSF per each projected Patient Bed designated to receive an assembled tray in the Main Kitchen, whichever is greater.

This area is used to store any type of tray delivery cart. Carts are located next to the tray assembly area waiting to be loaded. Space is for one set of carts, each with a capacity of 20 trays. Area includes circulation space to access carts.

3. **Refrigerator, Tray Retherm Cart Holding (SRR01) 125 NSF (11.6 NSM)**
Minimum NSF or 1.25 NSF per each projected Patient Bed designated to receive an all-cold tray assembled in the Main Kitchen, whichever is greater, and if a tray retherm cart holding refrigerator is authorized in Concept of Operations.

Tray retherm does not occur in this refrigerator. As part of an Advanced Delivery System (ADS), this walk-in refrigerator located next to the tray assembly area stores a full complement of tray retherm carts ready for the next meal period. Carts may be moved to a central area in the kitchen for rethermalizing, or to retherm equipment in the Satellite Units.

4. **Refrigerator, Central Tray Retherm (SRR01) 150 NSF (14.0 NSM)**
Minimum NSF or 1.5 NSF per each projected Patient Bed designated to receive an all-cold tray assembled in the Main Kitchen, whichever is greater, and if a central tray retherm refrigerator is authorized in Concept of Operations.

Tray retherm occurs in this walk-in refrigerator located next to the tray assembly area in the Main Kitchen. The refrigerator holds a full complement of tray retherm carts for the next meal period. Docking stations inside the walk-in refrigerator are designed to rethermalize the carts before they are needed.

5. **Tray Retherm Cart System, Centralized (SRR01) 150 NSF (14.0 NSM)**
Minimum NSF or 1.5 NSF per each projected Patient Bed designated to receive an all-cold tray assembled in the Main Kitchen, whichever is greater, and if a centralized tray retherm cart system is authorized in Concept of Operations.

This system consists of multiple tray retherm modules located centrally in the Main Kitchen or CPK. See "Tray Retherm Cart System" under paragraph 2, Definitions for additional information.

6. **Bulk Food Cart Holding Area, Cook/Serve (FSTD1) 30 NSF (2.8 NSM)**
Minimum NSF or 0.3 NSF per each projected Peak Volume Single Meal to be held in bulk in a hot holding cabinet, whichever is greater, and if a bulk food cart holding area for cook/serve is authorized in Concept of Operations.

Allocate this space in the Main Kitchen for Cook / Serve food held in bulk. Space for circulation is included.

F Main Kitchen Sanitation Areas:

1. **Dishwashing (FSDW1)..... 250 NSF (23.3 NSM)**
Minimum NSF if the number of projected Peak Single Meal Trays assembled in the Main Kitchen is fifty; provide an additional 0.5 NSF per each projected Peak Volume Single Meal assembled in the Main Kitchen greater than fifty.

If less than fifty, dishwashing will take place in Pot Washing Area. Provide one for trays and dishes washed in the Main Kitchen. Area includes space for dishwashing, soiled dish collection and clean dish collection.

2. **Pot Washing (FSPW1).....160 NSF (14.9 NSM)**
Minimum NSF if the number of projected Peak Single Meal Trays assembled in the Main Kitchen is fifty; provide an additional 0.14 NSF per each projected Peak Volume Single Meal assembled in the Main Kitchen greater than 50; maximum 500 NSF.

Pot Washing includes space for pot and pan washing machine or motorized pot sink, counters, three-compartment sink, waste pulper or disposal unit, portable soak sink(s), pot racks and circulation space. Function is located adjacent to Dish Washing to share labor and equipment.

3. **Cart Wash Area, Manual (FSCS1)130 NSF (12.1 NSM)**
Provide one per Nutrition and Food Service.
4. **Cart Wash Area, Automated (FSCS1)245 NSF (22.8 NSM)**
Provide one if in the Concept of Operations.

Provide a one-stage, single cart washing chamber for 25 to 50 carts. Provide a two-stage, double cart washing chamber for more than 50 carts.

5. **Tray Cart Storage Area, Soiled Carts (FSCS1).....100 NSF (4.7 NSM)**
Minimum NSF or 1.0 NSF per each projected Patient Bed designated to receive an assembled tray in the Main Kitchen, whichever is greater.

This area is used to store any type of tray delivery cart. Carts are located next to dishwashing area waiting to be unloaded. Space is for one set of carts, each with a capacity of 20 trays. Area includes circulation space to access carts.

6. **Waste Pulper System Room (XXYYC)50 NSF (4.7 NSM)**
Provide one if authorized in Concept of Operations.

The Waste Pulper Room accommodates the pulper extractor component of the system. The room is typically located near the dock.

G Main Kitchen Support Areas:

1. **Housekeeping Aides Closet - HAC (JANC1)40 NSM (3.7 NSF)**
Minimum one; provide an additional one for every increment of 200 projected Patient Beds, minimum portion 20; maximum 3 HACs.
2. **Storage, Hazardous Supplies (SRHM1)80 NSF (7.4 NSM)**
Provide one per Nutrition and Food Service.

This room is for the storage of supplies, which because of their chemical composition must be separated from foodstuffs, e.g., dishwashing compound, rinse additives, pot washing detergents, cleansers and disinfectants. It is best located near the Equipment Cleaning area.

3. **Storage, Refrigerated Garbage (UTC01)** **100 NSF (9.3 NSM)**
Provide one if authorized in Concept of Operations.

Recommended for areas where climate is hot and humid year round.

4. **Storage, Cleaning Supplies (JANC1)**..... **100 NSF (9.3 NSM)**
Provide one per Nutrition and Food Service.

This area provides space for storage of environmental sanitation equipment and supplies.

5. **Recycling / Holding Area (UTC01)** **90 NSF (8.4 NSM)**
Provide one per Nutrition and Food Service.

May be co-located with receiving area.

6. **Mechanical Area (MECH1)**..... **TBD NSF (TBD NSM)**
Provide based on specific project requirements.

Space allocation will be dependent on location of mechanical equipment unique to the Main Kitchen such as condensing units for the walk-in refrigerators and freezers, packaged refrigeration systems to serve the retherm equipment, water filter systems, and so on.

6 PLANNING AND DESIGN CONSIDERATIONS

- A. Net-to-Department Gross (NTDG) factor for Nutrition and Food Services is **1.25**. This number when multiplied by the programmed Net Square Foot (NSF) area determines the Departmental Gross Square Feet (DGSF).
- B. Design criteria for a Central Production Kitchen (CPK) with the capacity to produce and transport a high volume of meals to multiple satellite facilities are not included in this chapter. The Chief of Nutrition and Food Service must be advised before planning for a CPK is undertaken, and a feasibility study conducted.
- C. Clinical Program Dietitian(s) may be located in Patient Care areas. Nutrition Clinic Dietitian(s) and Nursing Home Care Unit Dietitians, though under the supervision of the Chief, Nutrition and Food Services, may have their offices in the Ambulatory Care area and in the Nursing Home respectively. Administrative Staff (Food Production Foreman, Food Service Supervisors, Administrative Dietitian, Cost Accountant) and Quality Assurance Dietitian are located in close proximity to the Main Kitchen. The Chief Dietitian and Secretary should be located in the Medical Center Administrative area.
- D. The Receiving Area should be located convenient to dry food storage and refrigerated and frozen storage areas.
- E. The Ingredient Control and Food Storage areas have been combined in these criteria and should be designed to provide a work area for assembling ingredients. In cook / chill operations, cold food preparation may also be consolidated into this area. A computer workstation and printer shall be provided.

- F. The Nourishment Preparation area should be located convenient to Refrigerated Storage, Ingredient Control and allow easy access to Patient Care Units.
- G. The Pot Washing Center requires a designated enclosed area close to the Food Production area.
- H. Recycling / Holding Area space will accommodate a minimum of 10 - 24" (610 mm) x 24" (610 mm) recycling bins plus circulation. Environmental Management Service will develop a collection schedule for each facility. Space will not increase with size of facility, but collection schedule will be accelerated to accommodate the demand.
- I. Air-curtains or plastic swinging doors inside the walk-in-box doors are recommended to help eliminate loss of cooled air into the kitchen corridors and to help maintain temperature consistency within the refrigeration units. Air curtains are also recommended at the terminus of the cart wash areas to minimize the escape of steam into the kitchen from that area.
- J. Medical Center Nutrition and Food Services areas constructed to meet standards as set forth in H-08-8, Earthquake Resistant Design Requirements for a VA Hospital Facility, will remain functional despite any seismic activity.
- K. Electrical Emergency Generation for Nutrition and Food Services must be capable of providing constant temperatures in all Refrigeration and Freezer Units with little or no fluctuation, during periods when normal power to the facility is interrupted.
- L. Nutrition and Food Services functions should be designed to utilize all Automatic Transport Systems within the structure, if they are available, and if they are compatible with the heated tray cart system used. Floor loading for Cook / Chill operations is in excess of 90.6 kg/sq. meter (200 lb./sq.ft.)
- M. There should be no waste water lines or sanitation lines installed in the ceiling above Nutrition and Food Service areas.
- N. Where carts, hand trucks or other mobile equipment will be used, the walk-in box floors must be reinforced with additional interior structure and finished with 12-gauge diamond tread plate, or a minimum of 4" (100 mm) of reinforced sealed concrete on top of the floor panels, or 2" minimum of concrete plus ½" thick quarry tile.
- O. Menu items to be blast-chilled or rethermalized must be placed in steam table pans with a depth no greater than 2 ½" (38 mm). The product being chilled / rethermalized must not exceed 51 mm (2") in depth or thickness. Additional pans are needed for Blast Chill systems.
- P. Foods to be tempered, i.e. convenience items and frozen meat, should be kept under refrigeration until an internal temperature of 3-4 degrees Celsius (37° to 40°F) is reached. Tempering prior to rethermalization will allow food to heat more evenly and rapidly than from the frozen state. This should be considered in the planning for Refrigeration / Freezer space.

- Q. Public Law 97-174 and Public Law 89-785 were passed to allow development of cooperative programs between civilian and military facilities. The VA-DoD Health Resources Sharing Law of 1982 (PL 97-174) encourages the establishment of sharing agreements between the Department of Veterans Affairs and the Department of Defense. The planning, negotiation and implementation of sharing agreements required care and commitment. When a decision is made to pursue a shared service agreement, the workload, capabilities and limitations of each specific service, billing and referral policies need to be identified on VA Form 10-1245c (VA/DoD Sharing Agreement). If a sharing agreement is developed for food service, the contractor should provide prepared food, tray delivery and pick up. The appropriate level of trained and qualified registered dietitian FTEE is designated oversight of the sharing program, based on the scope and complexity of the operation.
- R. Refer to the following space planning criteria chapters to determine appropriate requirements for collateral spaces, e.g., dining rooms, etc.:
1. Chapter 100, MS&N Patient Care Units
 2. Chapter 104, Spinal Cord Injury / Disorders Center
 3. Chapter 106, Nursing Home / Residential Care Center
 4. Chapter 110, Mental Health/Behavioral Patient Care Units
 5. Chapter 300, Day Hospital
 6. Chapter 312, Domiciliary
 7. Chapter 420, Childcare / Development Center

7 FUNCTIONAL RELATIONSHIPS

Relationship of Nutrition and Food Services to Services Listed Below:

TABLE 2: FUNCTIONAL RELATIONSHIP MATRIX

RELATIONSHIP	SERVICE	REASONS
1	Loading Dock	A, B, C
1	Canteen Cafeteria (If combined with NFS)	A, B, C, G, I
2	Medical Center Administration	K
2	Fiscal Service	K
2	Hospital Director's Office Suite	K
2	Nursing Service Administration	K
2	Personnel Services	K
3	Environmental Management	L
3	Patient Care Units – All	L
3	Voluntary Services	I
3	Engineering Services	L
5	Ambulatory Care	X
5	Pharmacy	X
5	Social Work Service Administration	X
5	Canteen Cafeteria (Not combined with NFS)	L

The Dietetic Service Administration Offices may be located remote from the Food Preparation and Production areas.

Legend:

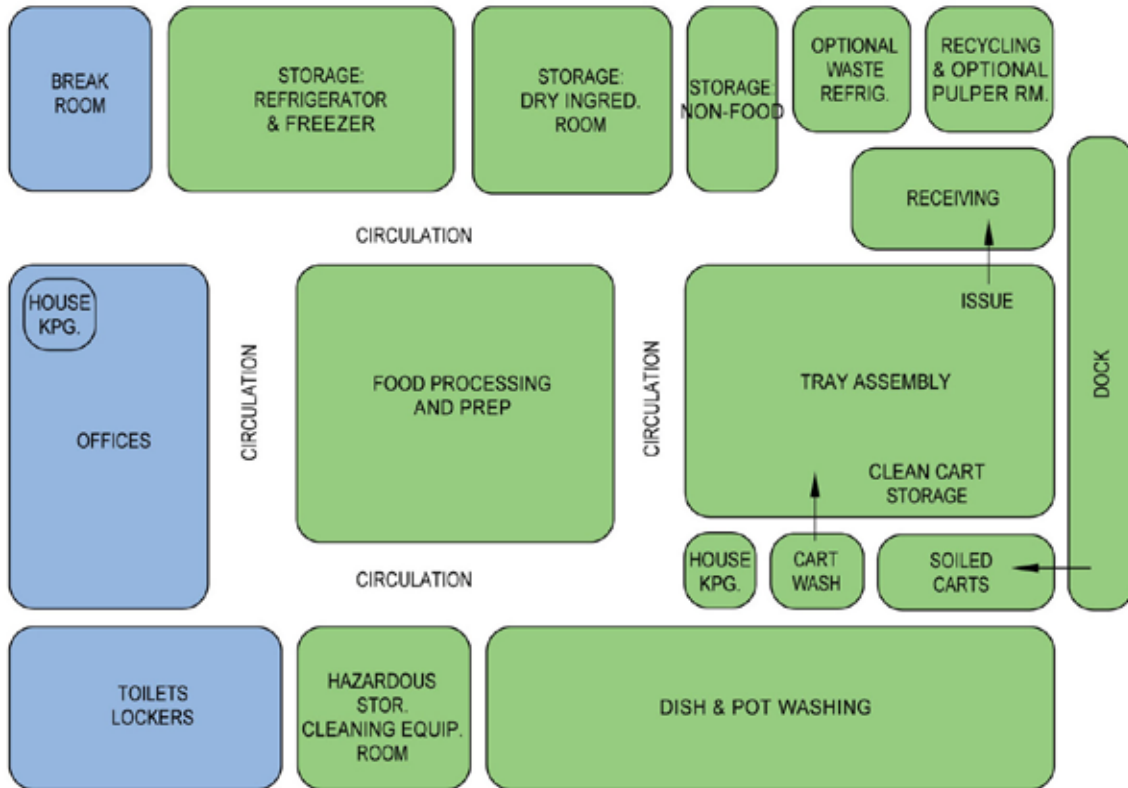
Relationship:

1. Adjacent
2. Close / Same Floor
3. Close / Different Floor Acceptable
4. Limited Traffic
5. Separation Desirable

Reasons:

6. Common use of resources
7. Accessibility of supplies
8. Urgency of contact
9. Noise or vibration
10. Presence of odors or fumes
11. Contamination hazard
12. Sequence of work
13. Patient convenience
14. Frequent contact
15. Need for security
16. Access to Medical Center Administration
17. Limited Traffic

8 FUNCTIONAL DIAGRAM 1: CONVENTIONAL COOK/SERVE OPERATION



9 FUNCTIONAL DIAGRAM 2: COOK/BLAST-CHILL WITH ADVANCED MEAL DELIVERY SYSTEM

