

PCR-P-036
10 August 2004

AMSRD-NSC-CF-F(Valvano/4259)

14 October 2004

TO: DSCP-HRAA(LeCollier/3625)

Subject: ES05-007; Technical Inquiry; PCR-P-036 Penne with Vegetable Sausage Crumbles in Spicy Tomato Sauce; SOPAKCO; Clarification to “vegetable sausage crumbles” terms

Date recv'd: 6 Oct 04

Date due: ASAP

Date replied: 14 Oct 04

1. The contractor requested clarification on the subject item combined drained weight. SOPAKCO explained that using more tomatoes should be included in this combined drained weight. Natick reviewed the claim and determined that the contractor was misreading the requirement. The term “vegetable sausage crumbles” does not refer to tomatoes or any other vegetable pieces in the product. It is the non-meat crumbles added to the pasta so this item can be considered a vegetarian entrée. In order to prevent any further confusion, the term “vegetable sausage crumbles” will be changed to “vegetarian sausage crumbles”.

2. Natick recommends that a contract modification with the cited change below be implemented by DSCP for the current MRE XXV contract, pending and future procurements until the subject document is formally amended or revised. No permanent changes will be made to the subject document at this time.

Throughout the entire document, including the title: Replace “vegetable sausage crumbles” with “vegetarian sausage crumbles”.

3. The POC for this memo is Jeannette Kennedy, DSN 256-5998.

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SECTION C

This document covers thermostabilized penne with vegetable sausage crumbles in spicy tomato sauce packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-P-036, PENNE WITH VEGETABLE SAUSAGE CRUMBLES IN SPICY TOMATO SAUCE, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of this Product Contract Requirements (PCR) document. The approved sample shall serve as the product standard. Should the contractor at any time plan to, or actually produce the product using different raw material or process methodologies from the approved Product Standard, which result in a product non comparable to the Product Standard, the contractor shall arrange for a new or alternate FA or PDM approval. In any event, all product produced must meet all requirements of this document including Product Standard comparability.

B. Commercial sterility. The packaged food shall be processed until commercially sterile.

C. Shelf life. The packaged food shall meet the minimum shelf life requirement of 36 months at 80°F.

D. Appearance.

(1) General. The finished product shall be a uniform mixture of penne rigate with vegetable sausage crumbles in a spicy tomato sauce. The packaged food shall be free from foreign materials.

(2) Penne rigate. The penne rigate shall have a cooked pasta color and shall be tubular with ridges and diagonal end cuts. The penne rigate shall be intact with measurements of not less than 1.5 inches \pm 0.25 inches.

(3) Vegetable sausage crumbles. The vegetable sausage crumble pieces shall be random size with the largest piece not to exceed 1/2 inch and shall have a cooked ground meat appearance.

(4) Sauce. The sauce shall be a medium reddish orange color and shall be thick and cohesive with discernable pieces of tomato, diced green and red bell peppers, and flecks of herbs and spices.

E. Odor and flavor.

(1) Penne. The penne shall have a cooked pasta odor and flavor.

(2) Sauce. The sauce shall have a cooked tomato odor and flavor with moderately intense Italian, chili powder spicing with ground black pepper and moderate pungency.

(3) Vegetable sausage crumbles. The vegetable sausage crumbles shall have the odor and flavor typical of Italian style sausage.

F. Texture.

(1) Penne. The penne shall be slightly soft to slightly firm and shall not be pasty.

(2) Vegetable sausage crumbles. The vegetable sausage crumbles shall have a texture similar to cooked ground meat.

(3) Sauce. The sauce shall be thick and slightly free flowing.

G. Weight.

(1) Net weight. The average net weight shall be not less than 8.0 ounces. No individual pouch shall have a net weight of less than 7.5 ounces.

(2) Drained weight. The average drained weight shall be not less than 6.0 ounces. The drained weight of pasta and vegetable sausage crumbles (combined) in an individual pouch shall be not less than 5.7 ounces.

H. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

I. Analytical requirements.

(1) Protein content. The protein content shall be not less than 4.7 percent.

(2) Fat content. The fat content shall be not greater than 3.2 percent.

(3) Salt content. The salt content shall be not less than 0.5 percent and not greater than 1.2 percent.

J. Vegetarian requirement. This product shall contain no ingredients, major or trace, and/or processing aids derived from the flesh, skin, blood, entrails, or bones of animals. This includes, but is not limited to oils, fats, fatty acids, and their esters (palmitic, stearic, oleic, and pelargonic acids), flavorings, gelling agents, coagulants, (rennet derived from calves or pepsin derived from swine which are used in cheese manufacture), binders, emulsifiers (mono/di-glycerides, sodium or magnesium stearate, polysorbate, sorbitans, monostearate, glycerin), fatty alcohol, aldehydes, and ketones, lactones, glycerol, amino acids, hydrolyzed proteins, enzymes, and enzyme modified products. Furthermore, these products shall contain no ethyl alcohol, or ingredients derived from or containing methyl alcohol. Milk and eggs, and ingredients derived from them such as yogurt, or cheese (produced without animal based rennet or pepsin), are allowed.

C-3 MISCELLANEOUS INFORMATION

THE FOLLOWING INGREDIENTS ARE FOR INFORMATION ONLY. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

A. Ingredients/formulation. Ingredients and formulation percentages for the sauce may be as follows:

<u>Ingredients</u>	<u>Percent by weight</u>
Pasta sauce	72.60
Vegetable sausage crumbles	15.55
Water	8.57
Dehydrated chopped onion	0.86
Dehydrated, diced green bell pepper	0.70
Dehydrated, diced red bell pepper	0.70
Salt <u>1/</u>	0.57
Chili powder	0.18
Ground black pepper	0.18
Garlic powder	0.09

1/ The total amount of salt in the sauce formula may be adjusted, as necessary, to produce a product that complies with the finished product salt requirements.

B. Product preparation. Percentages for product preparation may be as follows:

<u>Ingredients</u>	<u>Percent by weight</u>
Sauce	78.47
Penne (blanched to 2x dry weight)	21.53

NOTE:

The sauce used was Victoria Prepared Pasta Sauce, both tomato basil and roasted garlic flavors, supplied by Victoria Packing Corp. Brooklyn, NY.

The sausage style crumbles used were Morningstar Farms Sausage Style Recipe Crumbles supplied by Morningstar Farms Division, Worthington Farms, Inc., Worthington, OH.

SECTION D

D-1 PACKAGING

Product shall be filled into pouches and each pouch shall be packed in a carton in accordance with MIL-PRF-44073, Packaging of Food in Flexible Pouches.

D-2 LABELING

A. Pouches. Each pouch shall be clearly printed or stamped, in a manner that does not damage the pouch, with permanent black ink or any other contrasting color, which is free of carcinogenic elements. Prior to thermal processing of the pouches, the product name, lot number and filling equipment number shall be applied. All other marking may be applied before or after thermal processing.

- (1) Product name (not less than 1/8 inch high). Commonly used abbreviations may be used when authorized by the inspection agency.

- (2) Pouch code includes: 1/

Lot Number
Filling equipment identification number
Official establishment number (for example, EST-38)
Retort identification number
Retort cook number

1/ The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example,

10 August 2004 would be coded as 4223). The Julian code shall represent the day the product was packaged into the pouch and processed. Sub-lotting (when used) shall be represented by an alpha character immediately following the four digit Julian code. Following the four digit Julian code and the alpha character (when used), the other required code information shall be printed in the sequence as listed above.

B. Cartons.

(1) The cartons shall be clearly printed on one of the largest panels with permanent black ink as follows:

Product name (7/32 to 9/32 inch block letters)
Ingredients
Net weight
Name and address of packer
Code (same as pouch code, see pouches) 1/ 2/
USDA official inspection legend for the packer's plant
"Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA/USDA regulations

1/ Code may be ink printed on any outside carton panel. Code may be embossed on any outside carton panel except the largest panels of the carton.

2/ Official establishment number not required in carton code.

(2) Military nutrition information entitled "Military Rations Are Good Performance Meals" shall be printed on the entrée cartons large panel opposite to the panel printed with the data in D-2, B,(1) above. The information, provided by the contracting officer, shall be clearly printed with permanent black ink in an area no smaller than 4-1/4 inches by 6-3/4 inches.

D-3 PACKING

A. Packing for shipment to ration assembler. Seventy-two pouches (of the same product) in cartons shall be packed flat or on edge in a snug-fitting fiberboard shipping container conforming to style RSC, type CF, class domestic, grade 200 of ASTM D 5118/D 5118M-95 (2001), Standard Practice for Fabrication of Fiberboard Shipping Boxes. Each container shall be securely closed in accordance with ASTM D1974-98 (2003), Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-4 MARKING

A. Shipping containers. Shipping containers shall be marked in accordance with DSCP FORM 3556, Marking Instructions for Boxes, Sacks and Unit Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, Single Sampling Plans indicated in ANSI/ASQC Z1.4-1993 will be utilized. When required, the manufacturer shall provide the certificate(s) of conformance to the appropriate inspection activity. Certificate(s) of conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Research, Development and Engineering Command
Natick Soldier Center
AMSRD-NSC-CF-F
15 Kansas Street
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. Six (6) sample units of each item produced shall be randomly selected from that one production lot. The six (6) sample units shall be shipped to Natick within five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

(2) Conformance inspection. Conformance inspection shall include the examinations/tests and methods of inspection cited in this section and in Section 4 of MIL-PRF-44073.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 4.0 for minor defects. Defects and defect classifications are listed in table I. For drained weight inspection, a separate set of pouches shall be selected from the lot using the same sampling criteria as above. The pouches shall be immersed in not less than 140°F water for 10 minutes prior to conducting the product examination.

TABLE I. Product defects 1/ 2/ 3/ 4/

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
101		Product not a uniform mixture of penne rigate with vegetable sausage crumbles in a spicy tomato sauce.
	201	Penne rigate not intact, or not a tubular shape with ridges and diagonal end cuts.
	202	Penne rigate not a cooked pasta color.
	203	Vegetable sausage crumble pieces not random size.
	204	Largest vegetable sausage crumble piece size exceeds 1/2 inch.
	205	Vegetable sausage crumble pieces not cooked ground meat appearance.
	206	Sauce not a medium reddish orange color.
	207	Sauce not thick or not cohesive with discernable pieces of tomato, diced green and red bell peppers, and flecks of herbs and spices.
		<u>Odor and flavor</u>
102		Penne not a cooked pasta odor or flavor.
103		Sauce not a cooked tomato odor or flavor with moderately intense Italian, chili powder spicing with ground black pepper or not a moderate pungency.
104		Vegetable sausage crumbles not an odor or flavor of Italian style sausage.

TABLE I. Product defects 1/ 2/ 3/ 4/ cont'd

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Texture</u>
	208	Pasta not slightly soft to slightly firm.
	209	Pasta is pasty.
	210	Vegetable sausage crumbles texture not similar to cooked ground meat.
	211	Sauce not thick or not slightly free flowing.
		<u>Weight</u>
	212	Net weight of an individual pouch less than 7.5 ounces. <u>5/</u>
	213	Drained weight of pasta and vegetable sausage crumbles (combined) in an individual pouch less than 5.7 ounce. <u>6/</u>

1/ Presence of any foreign materials such as, but not limited to dirt, insect parts, hair, glass, wood, metal, or mold, or any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, or stale shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot.

3/ Size requirement for penne rigate pasta (not less than 1.5 inches \pm 0.25 inches) shall be verified by certificate of conformance.

4/ Product not verified by a certificate of conformance as meeting the vegetarian requirements shall be cause for rejection of the lot.

5/ Sample average net weight less than 8.0 ounces shall be cause for rejection of the lot.

6/ Sample average drained weight less than 6.0 ounces shall be cause for rejection of the lot.

B. Methods of inspection.

(1) Commercial sterility. Commercial sterility shall be verified in accordance with USDA/FSIS regulations.

(2) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80°F. Government verification may include storage for 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(3) Net weight. The net weight of the filled and sealed pouches shall be determined by weighing each sample on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest 0.1 ounce.

(4) Drained weight. The pouch contents shall be poured into a flat-bottom container. A minimum of three times the volume of the pouch of not less than 140°F water shall be added to the container so as to cover the contents. The contents and water shall be gently agitated so as to liquefy rendered fat and to remove the sauce. The contents shall then be poured into a U.S. Standard No. 14 sieve in a manner that will distribute the product over the sieve. The sieve area shall be such that the distributed product does not completely cover all the openings of the sieve. The sieve shall be tilted at such an angle to assure complete drainage of liquid from the product. Drain product for two minutes before determining the drained weight by subtracting the sieve tare weight from the gross weight. The drained weight shall be reported to the nearest 0.1 ounce.

(5) Analytical. The sample to be analyzed shall be a composite of eight filled and sealed pouches which have been selected at random from the lot. The composite sample shall be prepared and analyzed in accordance with the following Official Methods of Analysis of AOAC International (OMA).

<u>Test</u>	<u>Method Number</u>
Protein	984.13 or 992.15
Fat	985.15
Salt	935.47

Test results shall be reported to the nearest 0.1 percent. Verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the analytical requirements shall be cause for rejection of the lot.

E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS)

A. Packaging and labeling.

(1) Pouch material testing. The pouch material shall be examined for the characteristics listed in table I of MIL-PRF-44073. The lot size, sample unit, and inspection level criteria for each of the test characteristics are listed below. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

Characteristic	Lot size expressed in	Sample unit	Inspection level
Oxygen transmission rate	yards	1/2 yard	S-1
Water vapor transmission rate	yards	1/2 yard	S-1
Camouflage	yards	1/2 yard	S-1
Thermal processing	pouches	1 pouch	S-2
Environmental conditions	pouches	1 pouch	S-2

(2) Pouch examination. The pouches shall be examined for the defects listed in table II of MIL-PRF-44073. The lot size shall be expressed in pouches. The sample unit shall be one thermal processed pouch. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major A defects, 2.5 for major B defects, and 4.0 for minor defects. Two hundred sample units shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

(3) Examination of pouch and carton assembly. The completed pouch and carton assemblies shall be examined for the defects listed in table III of MIL-PRF-44073. The lot size shall be expressed in units of completed assemblies. The sample unit shall be one pouch and carton assembly. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects. Fifty sample pouch and carton assemblies shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table II below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE II. Shipping container and marking defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. <u>1/</u>
	201	Contents more or less than specified.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

DSCP FORM 3556 Marking Instructions for Boxes, Sacks and Unit Loads of Perishable and Semiperishable Subsistence

MILITARY SPECIFICATIONS

MIL-PRF-44073 Packaging of Food in Flexible Pouches

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQCZ1.4-1993 Sampling Procedures and Tables for Inspection by Attributes

ASTM INTERNATIONAL

D1974-98 (2003) Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D5118/D5118M-95 (2001) Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL

Official Methods of Analysis of the AOAC International (OMA)