

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Marsileaceae—Pepperwort family:						
<i>Marsilea villosa</i>	'Ihi'ihi	U.S.A. (HI)	E	474	NA	NA

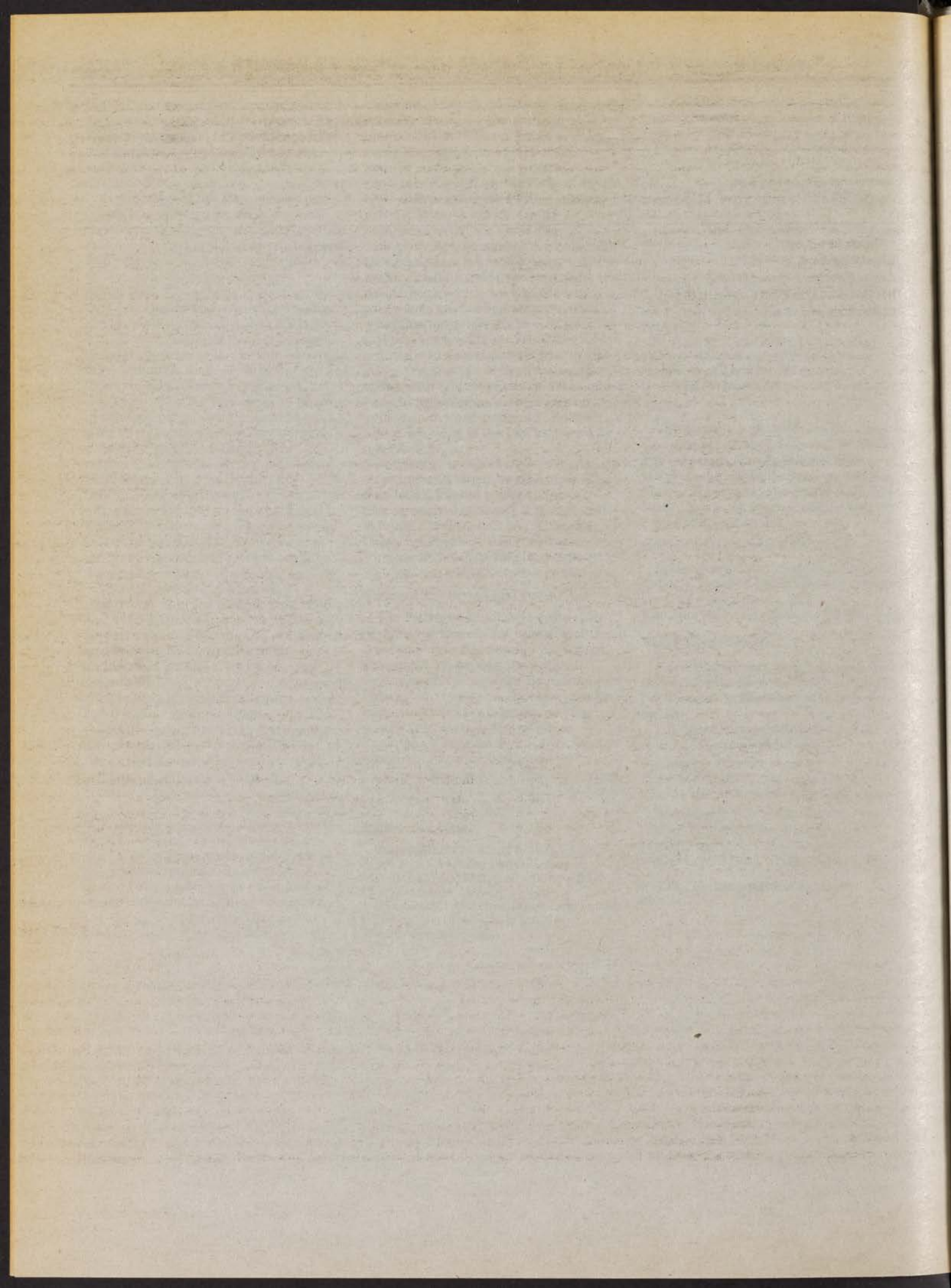
Dated: June 2, 1992.

Bruce Blanchard,

Acting Director, Fish and Wildlife Service.

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Part III

Department of Agriculture

Food Safety and Inspection Service

9 CFR Parts 318 and 320

**Additional Curing Methods for Destroying
Trichinae; Rule**

DEPARTMENT OF AGRICULTURE

Food Safety and Inspection Service

9 CFR Parts 318 and 320

[Docket No. 89-025F]

RIN 0583-AA43

Additional Curing Methods for Destroying Trichinae

AGENCY: Food Safety and Inspection Service, USDA.

ACTION: Final rule.

SUMMARY: The Food Safety and Inspection Service (FSIS) is amending the Federal meat inspection regulations which concern processing oval (flattened) sausage and dry-cured ham and port shoulders to destroy trichinae (*Trichinella spiralis* larvae) which may be encysted in the pork meat component, as follows: a footnote in Method No. 6 for sausages has been amended to change the manner of determining the drying time for flattened sausages; a preface to the ham methods has been added to assure uniform calculation of processing days; Method No. 1 for dry-cured hams has been amended to permit additional combinations of drying times and temperatures already permitted in Method No. 3; Method No. 2 for dry-cured hams has been removed, since it is no longer used. Method No. 3 for dry-cured hams has been extensively amended to accommodate some traditional processing methods, to remove the permission to pump these hams, and to provide greater safety. Method No. 4 is being published as a new trichina destruction provision for ham which would permit establishments to substitute potassium chloride for salt in the curing mixture based on data which substantiates that particular curing mixture. In addition, the Agency is amending the regulations in response to petitions to provide additional trichina destruction methods for dry sausage and dry-cured ham. These methods consist of one trichina destruction method for two size ranges of dry sausage and two trichina destruction methods for dry-cured ham. Finally, a few nonsubstantive changes have been made for clarity.

EFFECTIVE DATE: July 22, 1992. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of July 22, 1992.

FOR FURTHER INFORMATION CONTACT: William C. Smith, Director, Processed Products Inspection Division, Science & Technology, Food Safety and Inspection

Service, U.S. Department of Agriculture, Washington, DC 20250 (202) 720-3840.

SUPPLEMENTARY INFORMATION:**Executive Order 12291**

This final rule is issued in conformance with Executive Order 12291, and has been determined to be not a "major rule." It would not result in an annual effect on the economy of \$100 million or more; a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or significant adverse effects on competition, employment, investment productivity, innovation, or the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

Executive Order 12778

This final rule has been reviewed under Executive Order 12778, Civil Justice Reform. States and local jurisdictions are preempted under the Federal Meat Inspection Act (FMIA) from imposing any ingredient requirements or requirements with respect to the operations of any establishment at which inspection is provided under title I of the FMIA which are in addition to, or different than, the requirements of the FMIA. States and local jurisdictions, may, however, exercise concurrent jurisdiction over meat products that are outside official establishments for the purpose of preventing the distribution of meat products that are misbranded or adulterated under the FMIA, or, in the case of their entry into the United States. Under the FMIA, states that maintain meat inspection programs must impose requirements on State inspected products and establishments that are at least equal to those required under the FMIA. These States may, however, impose more stringent requirements on such State inspected products and establishments.

This rule is not intended to have retroactive effect, and there are no applicable administrative procedures that must be exhausted prior to any judicial challenge to the provisions of this rule. However, the administrative procedures specified in 9 CFR 306.5 must be exhausted prior to any judicial challenge of the application of the provisions of this rule.

Effect on Small Entities

The Administrator has determined that this rule will not have a significant economic impact on a substantial number of small entities as defined by the Regulatory Flexibility Act (5 U.S.C. 601). Approximately 480 establishments

are producing dry sausage and/or dry-cured hams, a majority of which are small businesses. The Federal meat inspection regulations require that processed pork products be treated to destroy trichinae by one of several prescribed methods. This final rule provides three additional methods of treatment to destroy trichinae in certain cured pork products, as petitioned for by pork producers and, thus, gives pork producers additional flexibility in choosing a destruction method. Use of one of these additional methods in lieu of one of the methods currently prescribed is voluntary. Some country ham producers may have to change their processes slightly or make a minimal investment in equipment amounting to several hundred dollars. The Agency has determined that this is not a significant impact on these small producers. The amendment to Method No. 1 and the requirement for oval sausages were requested by processors and are voluntary, so they have a negligible effect on the industry. The amendment to Method No. 3 now accommodates some traditional processing procedures such as bag curing and it addresses the use of ambient temperature for drying, thus giving processors clearer and more flexible instructions for these uses. However, the amended Method No. 3 removes drying times at temperatures below 75 °F because research showed them to be inadequate for the times tested; this will affect 10 to 109 establishments that in 1985 reported using a drying temperature less than 75 °F and may affect another 7 establishments reported to be using temperatures less than 75 °F in combination with higher temperatures. Method No. 4, permitting the use of potassium chloride, is another additional method. It does not preclude any present method, can be used with simple technology, and partially answers a few complaints that processors receive concerning the sodium content of their products. It has a negligible effect on small entities. The brine concentration analysis required by Methods 5 and 6 for dry-cured hams will cost approximately \$15 to \$30 for each composite sample. The approximate cost would be \$360 initially and \$30 per quarter thereafter. However, these methods and the included tests are only alternatives to the methods now available and permit the application of less salt if a higher percentage is absorbed, resulting ultimately in an equivalent amount of salt in the meat. Hence, the end product test (for brine concentration) is needed rather than the

more traditional composition requirement of percent salt.

Paperwork Requirements

This rule requires dry-cured ham manufacturers wishing to utilize methods 5 and 6 to have a process control program to monitor and control the internal brine concentrations, the minimum drying times and temperatures, and the minimum total processing times of the hams. The process control program must be filed in the establishment and available for review by program employees. The manufacturer is required to use an FSIS accredited laboratory, under the provisions of 9 CFR 318.21, to conduct analyses for salt and water content for each production lot tested. The manufacturer will then use the laboratory results to perform a calculation to ensure that the internal brine concentration, a measure of the amount of salt in the product in relation to the water, is at least 6 percent. FSIS has determined that a minimum brine concentration of 8 percent provides enough salt to destroy any trichinae present in the product. The laboratory results and the results of the calculations must be filed as part of the process control program. These recordkeeping requirements have been approved by the Office of Management and Budget (OMB) under control number 0583-0065.

Background

Trichinella spiralis or "trichina" is a parasitic worm that causes the disease trichinosis in virtually all warm-blooded animals. The most common way for humans to acquire trichinosis is to ingest undercooked pork infested with trichina cysts. Trichinosis resulting from pork consumption is far less prevalent today than in the past in part because USDA requires that all pork in ready-to-eat products be either tested for trichinae or treated to destroy or inactivate trichinae.

Since the early part of this century, USDA has required manufacturers of ready-to-eat pork products to treat them for trichinae with one of several prescribed methods. Trichina cysts can be killed by heat and they can also be killed by sufficient freezing, salting, drying, and aging. Although most ready-to-eat pork products on the market are cooked, some are made safe to eat by freezing and others by a combination of salting, drying, and aging.

On March 10, 1983, FSIS published a proposed rule in the **Federal Register** (48 FR 10065) to permit additional trichina destruction treatment methods consisting of prescribed times and

internal product temperatures for freezing, combinations of smoking temperature and drying temperature for processing hams and pork shoulders, and alternate sausage drying times based on salt content, sausage diameter, and fermentation or smoking temperature and time. The final rule was published on February 7, 1985 (50 FR 5226) and became effective on August 6, 1985. On that effective date, all trichina destruction methods not in the regulations were rescinded. Many small country ham manufacturers objected to the final rule. They asserted that they were using time-tested methods and that there was no history or illness associated with their product. FSIS considered these claims to have merit and published a partial waiver of the final rule on June 18, 1985 (50 FR 25202).

Subsequently, FSIS worked with other USDA scientists to develop a general research protocol for gathering information about the mechanism of killing trichinae by curing. The research was conducted at Texas A & M.

As a result of this research, a proposal was published on April 20, 1989 (54 FR 15946). That proposal, finalized here, changed the present Method No. 3 of producing dry-cured hams and pork shoulders in a number of ways. The regulation prescribing the method is now divided into paragraphs according to the different stages of processing. A minimum percentage of salt content is specified for the curing mixture. The regulation does not specify an amount of salt in relation to the amount of meat, except in the case of the bag cure. (A bag cure is the wrapping of a ham and all of its cure in kraft paper and hanging it individually). There are now mandatory cure contact times and total curing times. For the first time, the bag cure is specifically recognized and accepted. Also, in recognition of the actual practices in the production of country ham, the regulation provides three different schedules of drying times, depending on whether the establishment elects to (1) dry the product in a temperature controlled room, (2) not control the room temperature, but monitor it and alter the drying times accordingly, or (3) ignore the temperature and operate solely by the calendar. For all establishments which operate on the basis of drying temperature, whether controlled or not, the most significant change is the removal from the drying time/temperature table of all temperatures below 75 °F. This came about as a result of the Texas A & M research which showed that lower temperatures were less effective than originally thought.

Although the changes to Method No. 3 are the most important part of the 1989 proposal, there are several other changes as well. Method No. 2 is rescinded because it is no longer used; the drying requirements for oval sausages are eased, based on the application of basic physical principles and data submitted by a manufacturer, and Method No. 4 is established to permit manufacturers to substitute potassium chloride for salt (sodium chloride) in the curing mixture based on data substantiating that particular process.

While the research that served as the basis for the 1989 proposal was being conducted, three manufacturers petitioned the Agency for amendments to the trichina regulations, asking for additional treatment methods. In response to the Agency's replies, the manufacturers sponsored additional research at two State universities. These projects were not completed until after the publication of the 1989 proposal and, thus, were not included in that publication. They were completed soon afterward and were the basis for three new proposed methods published on January 7, 1991 (56 FR 503). One of the new methods was for dry sausage and two were for prosciutto-type dry-cured hams. That proposal also contained a cautionary statement at the beginning of § 318.10(c) advising processors that these following treatments, while adequate for killing trichinae, may not be rigorous enough to kill pathogenic bacteria.

Discussion of Comments

FSIS received 14 comments on the proposed rule for processing country hams and 4 comments on the proposed rule for processing prosciutto and dry sausage. The comments and responses are listed below, first on the proposed cautionary statement and then in order of occurrence of the relevant provisions in the final rule.

The Cautionary Statement

Two representatives of industry associations commented extensively against the proposed cautionary statement. Both disagreed with the background statement "that some manufacturers may not recognize that the trichina treatment does not preclude adulteration by bacterial pathogens." The first comment stated that including the cautionary statement seemed to assume widespread ignorance throughout the industry regarding the control of trichinae versus control of pathogenic bacteria. The commenter emphatically did not agree.

Another point was that the American Meat Institute publication *Good Manufacturing Practices: Fermented Dry and Semi-dry Sausages* has resulted in the production of safe products free from adulteration caused by pathogenic bacteria, hence no cautionary statement is needed.

A third point was that the incidences cited by FSIS as evidence for the necessity of the cautionary statement were insufficient and probably two of them were caused by post-processing contamination.

A fourth point was that FSIS has ample regulatory authority to proceed against products adulterated by bacterial pathogens.

The Agency agrees that the cautionary statement, on balance, is best removed from the trichinae control section of the regulations as essentially irrelevant to the control of trichinae. Since the statement is being removed, and the microbiological concerns are addressed in present rules and will be further addressed in future rules as needs require, the other points need not be addressed here, except to state that the statement was intended to be helpful, not to imply widespread ignorance on the part of industry.

Comment on Sausage Treatment Methods

There was one comment by a representative of a professional association on the proposed sausage treatment method (Method No. 7). The commenter's primary concern was that the proposal used chamber temperature rather than internal product temperature. The commenter stated that, because sausages often contain meat from the diaphragm and masseter muscles (sites most likely to contain large numbers of trichina cysts in heavily infected pigs), process control is important.

The Agency agrees with the commenter's concerns and voiced the same concern when the validation protocol was first proposed by the manufacturer. The Agency was concerned that product internal temperature and room temperature would not be correlated. However, the petitioner addressed the Agency's concerns, and the data showed that room temperature was sufficiently related to internal product temperature to allow determination of the destruction of all trichinae in heavily infected pork.

The Agency also reorganized the holding times and temperatures so that, for clarity, they are all included in the tables.

Comments on Ham and Pork Shoulder Methods

One commenter questioned whether any new treatment methods were needed for country ham. He stated that there should be no trichina treatment requirement for country hams because they are generally cooked before eating.

The Agency disagrees with the comment; the requirement for treating all dry-cured hams, including country hams, for trichina destruction was fully promulgated as a part of the dry-cured ham standard in § 319.106, in response to an industry petition. Furthermore, there is considerable evidence that some consumers eat country ham without any cooking either as a common practice or as low cost alternative to prosciutto.

The same comment further asserted that there was no epidemiological data to support the need for trichina treatment of country hams, and he noted that of the over 100 country ham processes that FSIS reviewed, only 2 were found to be unacceptable. His apparent conclusion is that the present system works and no change is needed.

The Agency disagrees with the comment's premises. The commenter is correct in that only two processes were considered unacceptable; however, a number of the others were borderline on acceptability and suggestions were made to improve the process safety. The exercise demonstrated that a system of informal approvals based on limited research data is error-prone and is unacceptable.

One commenter recommended that processors be permitted to continue using the 180 day ambient temperature process inferred from the now rescinded MPI Bulletin 742. Another commenter further recommended withdrawing the proposal and permit processors to continue to use all the times and temperature in MPI Bulletin 742.

The Agency disagrees. The MPI Bulletin was shown to have had errors which were corrected in the 1985 final rule; those errors consisted of vagueness, requiring too short a drying time for the lower drying temperatures and the inference of a permitted 180 day, ambient temperature process provision. This rule further refines the times and temperatures in that bulletin which was rescinded in 1985.

Two comments from country ham processing associations recommended that FSIS conduct further research before proceeding with final rulemaking. One recommended that all present procedures be permitted until definitive testing can be accomplished.

The Agency sympathizes with the desire for definitive testing; however, it

is impractical. The Agency has reviewed the testing results and information on which this rule is based, and has determined that it is sufficient to objectively establish the safety of this rule.

Two comments from country ham processor associations were on the adequacy of the research conducted at Texas A & M. One commented that the researchers did not consider the effect of percent salt in the curing mixture and expressed the belief that the percent salt in the mixture has a direct effect on trichina death. The other commenter said that the Texas A & M research used only three temperatures, instead of the full range of temperatures in MPI Bulletin 742.

The Texas A & M research addressed all of the variables necessary to construct this processing rule; additional variables, such as those suggested by the commenter, did not appear to be justified by the additional expense necessary to establish their validity. The Agency chose three temperatures to confirm (or refute) the time-temperature table in Method No. 3 (which was an amendment of the table in MPI Bulletin 742); additional temperatures would have been useful but not cost effective. The times and temperatures in the MPI Bulletin were not based on research on each temperature, instead they were based on several temperatures and times and the intermediate times and temperatures were interpolated according to acceptable scientific methods. Further, research subsequent to the publication of MPI Bulletin 742 showed the times at lower temperatures were not sufficient for safety; therefore, these were increased in Method No. 3. Because the Texas A & M research showed that the Method No. 3 time for 50 °F was inadequate, it is being removed with this amendment. Post-Texas A & M research has indicated that at 50 °F, approximately 150 days are required to kill trichina cysts. With the submission of more data based on more research, this temperature can possibly be reinstituted into Method No. 3 with an appropriate amount of drying time.

Three commenters recommended removing the option of brine injection for Method No. 3.

The Agency included the brine injection option since it was permitted, but not mandated, in Method No. 1 and to provide flexibility to processors who may wish to use that option. However, since the standard of identity in § 319.106 prohibits brine injection, permitting it in Method No. 3 has caused some confusion among processors and the public. Few or no processors use

that option and the Agency received no comment against removing Method No. 2 in which brine injection is mandated. Therefore, the Agency is amending the proposed Method No. 3 by removing the brine injection option. Processors who may wish to use brine injection for a dry salt cured ham can still use that option in Method No. 1.

Four commenters proposed that the equalization temperature of Method No. 3 for hams and pork shoulder picnics be raised from a maximum of 55 °F to maximum of 65 °F. The rationale for their proposal was that their equipment does not operate as efficiently at 55 °F.

The Agency proposed the 55 °F limit as a maximum temperature to restrict potential pathogenic bacterial growth. Since the proposal, additional information has become available to better judge the effect of a higher temperature. The Agricultural Research Service (ARS) has developed a computer modeling program to better estimate the potential growth of various pathogens under different conditions of temperature, salt, acidity, atmosphere, and nitrite content. Using that modeling program, the Agency has determined that 55 °F is indeed safer than 65 °F, however, the lag and generation times at 60 °F are so long that the potential for growth on a dry-cured ham at 60 °F is small. Accordingly, the Agency is amending the proposed equalization temperature from a maximum of 55 °F to a maximum of 60 °F.

There were four comments on the proposed Table 5 in Method No. 3. One commenter proposed 60 °F, instead of 75 °F, as the minimum temperature for that table.

The Agency agrees that 60 °F can be a minimum drying temperature under some circumstances, since subsequent research done on prosciutto ham processing has shown that a 150 day drying period can be safe. However, at this time the use of lower drying temperatures is predicated upon careful control of the internal brine concentration. Therefore, processors wishing to use lower drying temperatures can use Method No. 5.

A commenter asked for clarification as to whether processors using ambient temperature drying and temperature recorders, as permitted in Method No. 3 for hams and pork shoulder picnics, could release product before August 31.

The answer is yes. The final rule is specific: Processors can use any of three procedures for drying, and the last two of these procedures use uncontrolled or ambient temperatures. The last drying procedure requires no temperature monitoring and permits the processor to dry by the calendar but product may not

be released before August 31. The other ambient temperature drying procedure requires monitoring the internal product temperature but permits release when the time-temperature requirements of Table 5 are attained; they may be at any time during the year.

A commenter recommended allowing temperature combinations to be used without extending the requirement to 1.5 times the number of days that are otherwise required.

The use of these temperature combinations permits processors greater flexibility than does the present rule, in that it permits permutations of more than two temperatures and does not require the processor to begin with the higher temperature as Table 6 did. Although the trichina death studies have been done with constant temperatures, the use of permutations of temperatures (and their associated times), in the former Table 6 and in the provision of this rule, appears warranted since the death kinetics follow the law of mass action ($\text{rate} = \text{time} \times \text{Temperature} \times \text{concentration}$). However, because the trichina death kinetics of temperature permutations have not been researched, the Agency increased the permuted time by 1.5 to add a conservative amount of safety margin. It may well be that some or all of the added safety margin is unneeded. However, until research shows that to be true, the Agency will retain the safety margin. Therefore, the final rule contains the added time.

Two commenters objected to requiring the entire months of June, July, and August for drying hams by a non-monitored ambient temperature procedure as is permitted in Method No. 3 for hams and pork shoulder picnics. One commenter believed it was more drying time than needed and the other claimed it unfairly restricts business. Neither comment was accompanied by substantiating evidence that less drying time at ambient temperature is needed.

The Agency disagrees with the comments; the Agency carefully reviewed and evaluated the available data on trichina destruction and weather in country ham processing areas and proposed a method which seemed to be both safe and in accordance with traditional procedures. No procedure that is required for public safety can be reasonably claimed to unfairly restrict business. Those processors who wish to release their hams sooner, but not use a controlled temperature drying chamber, can use the option of recording the hams' internal temperatures.

One commenter decried the use of potassium chloride (KCl) for personal

health reasons. The commenter is sensitive to excessive potassium and claimed that restaurants list the hams only as salt cured and not KCl cured.

The Agency is aware of the issue to which the comment refers, but, due to limited resources, relies on local health authorities for the accurate labeling of restaurant food. The Agency will notify local health authorities that dry-cured hams with high levels of potassium may appear on the market. The local authorities in turn should inform retail purveyors that they have a duty to convey that information to their customers.

One commenter cautioned that his experiments had shown an adverse flavor may occur from using 50 percent KCl.

The Agency has taken no position on the flavor of Country Hams since there is a wide range of organoleptic quality among the various processors. It may be that consumers of these hams will reject KCl cured hams or may prefer them. In any case the Agency has determined that the use of KCl is safe with respect to trichina safety. Also, the Agency is permitting a maximum of 50 percent KCl substitution; processors have the option of using less and adjusting their curing ingredients to achieve a product desired by their consumers.

A meat scientist asked, concerning Method No. 4, if the ionic concentration of sodium chloride (NaCl) and KCl would be used or the actual salt penetration rate.

The answer is that the control on NaCl and KCl was based on the control used in the experiment which was the physical weight of the compound applied to the meat. Therefore, neither ionic concentration nor salt penetration was used because these are based on the amount of salt taken up by the meat. In addition, this control is easier to administer and regulate.

FSIS received five comments regarding the curing times proposed for Method No. 4 for hams and pork shoulder picnics, permitting the substitution of potassium chloride (KCl) for up to half the required salt (sodium chloride—NaCl). All of the comments referred to North Carolina State research that showed that KCl increased the rate of cure penetration; thus, a longer curing period should not be required. Three of the comments also recommended prescribing only two overhauls (three applications), not the three overhauls the researcher used. (An overhaul is the turning over of a unit of product for the application of additional cure).

FSIS proposed the same procedure used by the North Carolina researcher. This was done because the research showed only that a procedure using KCl was effective by the end of the process in destroying trichinae, but not that the rate of destruction was equivalent to that of NaCl. However, since the publication of the proposal, the researcher has performed more research, and supplied more data so that with that additional information, FSIS is now amending Method No. 4 to permit two or three overhauls.

A researcher commented that Method No. 4 ought to permit soaking to remove excess cure from hams after the curing period instead of only rinsing with tap water. He noted that since Method No. 1 permits soaking, some processors prefer that to rinsing.

The Agency disagrees because no supporting evidence was submitted to demonstrate that soaking did not result in a lower brine concentration. Indeed, the Agency notes that the researcher's latest report, submitted this May, was based on rinsing with tap water, not soaking. The Agency is willing to review data which shows that soaking yields an equally safe product.

A commenter asked how the low temperature long time drying procedures used by traditional prosciutto manufacturers will be accommodated.

At the time the first proposal was published, there was no provision for the long time low temperature drying used by traditional prosciutto manufacturers, however, there was research underway to validate those procedures. That research has been completed, and a proposal covering these type processes has been published and is incorporated into this final rule as Method No. 5.

A comment was received on the proposed methods Nos. 5 and 6 for dry-cured hams. The comment, from a meat scientist, questioned the need for 6 percent brine in the biceps muscle, since his research had shown trichina destruction at lower brine concentrations, and the Texas A&M research also showed trichina destruction at lower brine concentrations, than that proposed in these two methods.

The Agency agrees that lower brine concentrations have been shown to be lethal to trichinae. However, these processes were developed by prosciutto manufacturers whose products are generally more salty than country hams. The data they furnished indicated that, at the times and temperatures they wished to use, the 6 percent brine concentration was a needed processing factor. At any rate, for these processes,

with these times and temperatures, this is the only supporting data that the Agency has.

In addition to the changes made pursuant to the comments, the Agency is making a few nonsubstantive changes for clarity. Therefore, the Agency is amending the regulations as follows:

Final Rule

For the reasons discussed in the preamble, FSIS is amending Parts 318 and 320 of the Federal meat inspection regulations as set forth below.

List of Subjects in 9 CFR Parts 318 and 320

Incorporation by reference, Meat inspection.

PART 318—ENTRY INTO OFFICIAL ESTABLISHMENTS; REINSPECTION AND PREPARATION OF PRODUCTS

1. The authority for part 318 continues to read as follows:

Authority: 7 U.S.C. 450, 1901-1906; 21 U.S.C. 601-695; 7 CFR 2.17, 2.55.

2. In § 318.10, paragraph (c)(3)(i) is amended by revising the text of footnote 1 to Table 3A and adding a new method No. 7, and paragraph (c)(3)(iv) is revised to read as follows:

§ 318.10 Prescribed treatment of pork and products containing pork to destroy trichinae.

* * * * *

(c) * * *

(3) * * *

(i) * * *

Table 3A

* * * * *

¹ The drying room times for flattened or oval sausages shall use a diameter derived by measuring the circumference and dividing by 3.14 (pi).

* * * * *

Method No. 7, Dry Sausages. (A) General Requirements. The establishment shall use meat particles reduced in size to no more than 1/4 inch in diameter. The establishment shall add a curing mixture containing no less than 2.7 pounds of salt per hundred pounds of meat and mix it uniformly throughout the product. The establishment shall hold, heat, and dry the product according to paragraph (B) or (C) below.

(B) *Holding, Heating, and Drying Treatment, Large Sausages.* Except as permitted in (C) below, the establishment shall subject sausages in casings not exceeding 105 mm in diameter, at the time of stuffing, to all of the following minimum chamber temperatures and time periods.

TREATMENT SCHEDULE FOR SAUSAGES 105 MILLIMETERS (4 1/8 INCHES) OR LESS IN DIAMETER

Minimum chamber temperature		Minimum time (hours)
(°F)	(°C)	
50	10	12
90	32.2	1
100	37.8	1
110	43.3	1
120	48.9	1
125	51.7	7

Following the preceding treatment, the establishment shall dry the sausages at a temperature not lower than 50 °F (10 °C) for not less than 7 days.

(C) *Heating and Drying Treatment, Small Sausages.* Alternatively, the establishment may subject sausages in casings not exceeding 55 mm in diameter, at the time of stuffing, to all of the following minimum chamber temperatures and time periods.

TREATMENT SCHEDULE FOR SAUSAGES 55 MILLIMETERS (2 1/8 INCHES) OR LESS IN DIAMETER

Minimum chamber temperature		Minimum time (hours)
(°F)	(°C)	
50	10	12
100	37.8	1
125	51.7	6

Following the preceding heat treatment, the establishment shall dry the sausages at a temperature not lower than 50 °F (10 °C) for not less than 4 days.

* * * * *

(c) * * *

(3) * * *

(iv) *Hams and pork shoulder picnics.* In the curing of hams and pork shoulder picnics, one of the methods below shall be used. For calculating days per pound, the establishment shall use the weight of the heaviest ham or picnic in the lot.

Method No. 2. The hams and pork shoulder picnics shall be cured by a dry-salt curing process not less than 40 days at a temperature no lower than 36 °F. The products shall be laid down in salt, not less than 4 pounds to each hundredweight of product, the salt being applied in a thorough manner to the lean meat of each item. When placed in cure, the products may be pumped with pickle if desired. At least once during the curing process, the products shall be overhauled (turned over for the application of additional cure) and additional salt applied, if necessary, so that the lean meat of each item is thoroughly covered. After removal from cure, the products may be soaked in water at a temperature not higher than 70 °F for not more than 15 hours, during which time the water may be changed once, but they shall not be subjected to any other treatment designed to remove salt from the meat except that superficial washing may be allowed. The products shall finally be dried or smoked at a

time and temperature not less than a combination prescribed in Table 5 of Method No. 3.

Method No. 2. [Reserved]

Method No. 3. (A) Curing. (Other than bag curing): Establishments shall cure hams and shoulders by using a cure mixture containing not less than 70 percent salt by weight to cover all exposed muscle tissue and to pack the hock region. Total curing time consists of a mandatory cure contact time and an optional equalization time.

(B) Cure Contact Time. This is the cure contact period, during which the establishment shall keep exposed muscle tissue coated with the cure mixture at least 28 days but for no less than 1.5 days per pound of ham or shoulder. Overhaul is optional so long as the exposed muscle tissue remains coated with curing mixture.

(C) Equalization. The establishment may provide an equalization period after the minimum cure contact period in (B) above to permit the absorbed salt to permeate the product's inner tissues. Equalization is the time after the excess cure has been removed from the product at the end of the cure contact period until the product is placed in the drying room and the drying period begins. The total curing time (equalization plus cure contact) shall be at least 40 days and in no case less than 2 days per pound of an uncured ham or shoulder.

(D) Removing Excess Cure. After the required cure contact period, the establishment may remove excess cure mixture from the product's surface mechanically or by rinsing up to 1 minute with water, but not by soaking.

(E) Bag Curing. Bag curing is a traditional ham curing technique in which the manufacturer wraps the ham and all of the cure mixture together in kraft paper then hangs them individually. The paper keeps the extra cure mixture in close contact with the

product making reapplication of salt unnecessary, and it protects the product from mites and insects. Establishments may employ the bag curing method as an alternative to (A) through (D) above. An establishment which elects to use the bag curing method shall apply a cure mixture containing at least 6 pounds of salt per 100 pounds of uncured product. The establishment shall rub the curing mixture into the exposed muscle tissue, pack the hock region with the curing mixture, and use uncoated wrapping paper to wrap the product together with any remaining curing mixture. The bag cured product shall remain wrapped throughout the curing period and may or may not remain wrapped during the drying period. In any case, the curing period shall be at least 40 days but not less than 2 days per pound of an uncured ham or shoulder. After curing, the cured product shall be exposed to a drying time and temperature prescribed in Table 5.

(F) Curing Temperature. During the curing period the establishment shall use one of the following procedures:

(1) The establishment shall control the room temperature at not less than 35 °F (1.7 °C) nor greater than 45 °F (7.2 °C) for the first 1.5 days per pound of an uncured ham or shoulder, and not less than 35 °F (1.7 °C) nor greater than 60 °F (15.6 °C) for the remainder of the curing period.

(2) The establishment shall monitor and record daily product temperature. The room temperature need not be controlled but days on which the product temperature drops below 35 °F (1.7 °C) shall not be counted as curing time. If the product temperature exceeds 45 °F (7.2 °C) within the first period of 1.5 days per pound of an uncured ham or shoulder or if it exceeds 60 °F (15.6 °C) for the remainder of the curing period, the establishment shall cool the product back to the 45 °F (7.2 °C) maximum during the first

period or 55 °F (12.8 °C) maximum during the remainder of the period.

(3) The establishment shall begin curing product only between the dates of December 1 and February 13. The room temperature need not be controlled, but the establishment shall monitor and record daily room temperatures, and days in which the room temperature drops below 35 °F (1.7 °C) shall not be counted as curing time.

(G) Drying. After the curing period, establishments shall use one of three procedures for drying:

(1) The establishment shall subject the product to a controlled room temperature for a minimum time and minimum temperature combination prescribed in Table 5 or for a set of such combinations in which the total of the fractional periods (in column 4 of Table 5) exceeds 1.5.

(2) Establishments using uncontrolled room temperatures shall monitor and record the internal product temperature. The drying period shall be complete when, from the days which can be counted as curing time, one of the time/temperature combinations of Table 5 is satisfied or when the total of the fractional values for the combinations exceeds 1.5.

(3) Establishments using uncontrolled room temperatures shall dry the product for a minimum of 160 days including the entire months of June, July, and August. This procedure is obviously dependent on local climatic conditions and no problem exists with respect to current producers who use this procedure. Future applicants shall demonstrate that their local monthly average temperatures and the local monthly minimum temperatures are equal to or warmer than the normal average temperatures and normal minimum temperatures compiled by the National Oceanic and Atmospheric Administration for Boone, North Carolina, station 31-0977, 1951 through 1980.

MONTHLY TEMPERATURES (°F) FOR BOONE NC, 1951-1980

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.
Normal average temperatures								
32.2	34.1	41.3	51.2	59.1	65.1	68.3	67.5	61.6
Normal minimum temperatures								
22.8	24.2	30.8	39.6	48.1	54.7	58.5	57.6	51.6

Drying Times and Temperatures for Trichina Inactivation in Hams and Shoulders

TABLE 5.—MINIMUM DRYING DAYS AT A MINIMUM TEMPERATURE*

Minimum Drying Temperature		Minimum days at drying temperature	Fractional period for one day of drying
Degrees fahrenheit	Degrees centigrade		
130	54.4	1.5	67
125	51.7	2	50
120	48.9	3	33
115	46.1	4	25
110	43.3	5	20

TABLE 5.—MINIMUM DRYING DAYS AT A MINIMUM TEMPERATURE*—Continued

Minimum Drying Temperature	Minimum Drying Temperature		Minimum days at drying temperature	Fractional period for one day of drying
	Degrees Fahrenheit	Degrees Centigrade		
105		40.6	6	.17
100		37.8	7	.14
95		35.0	9	.11
90		32.2	11	.091
85		29.4	18	.056
80		26.7	25	.040
75		23.9	35	.029

* Interpolation of these times or temperatures is not acceptable; establishments wishing to use temperatures or times not in this Table shall first validate their efficacy as provided by 318.10(c)(4) of this section.

Method No. 4.

(A) *Cure*: Establishments shall cure hams and shoulders by using a cure mixture containing not less than 7.5 percent salt by weight to cover all exposed muscle tissue and to pack the hock region. Establishments may substitute potassium chloride (KCl) for up to half of the required salt on an equal weight basis.

(B) *Curing*: Establishments shall apply the cure at a rate not less than 5.72 pounds of salt and KCl per hundred pounds of fresh meat. The cure shall be applied in either three or four approximately equal amounts (two or three overhauls) at separate times during the first 14 days of curing.

(C) *Cure Contact Time*: Establishments shall keep the product in contact with the cure mixture for no less than 2 days per pound of an uncured ham or shoulder but for at least 30 days. Establishments shall maintain the curing temperature at no less than 35°F (1.7°C) during the cure contact time.

(D) *Equalization*: After the cure contact period, establishments shall provide an added equalization period of no less than 1 day per pound of an uncured ham or shoulder but at least 14 days. Equalization is the time after the excess cure has been removed from the product, the end of the cure contact period, and before the drying period begins. Establishments may substitute additional cure contact days for an equal number of equalization days.

(E) *Removing Excess Cure*: After the required cure contact period, the establishment may remove excess cure mixture from the product's surface mechanically or by rinsing up to 1 minute with water, but not by soaking.

(F) *Drying*: After the curing period, establishments shall use one of the controlled temperature methods for drying listed in Method No. 3 of this subparagraph.

Method No. 5.

(A) *Curing*: The establishment shall cure the ham to a minimum brine concentration of 6 percent by the end of the drying period. Brine concentration is calculated as 100 times the salt concentration divided by the sum of the salt and water concentrations.

Percent brine = $100 \times [\text{salt}] / ([\text{salt}] + [\text{water}])$

The Agency will accept the brine concentration in the biceps femoris as a reasonable estimate of the minimum brine concentration in the ham.

(B) *Drying and Total Process Times*: The establishment shall dry the cured ham at a

minimum temperature of 55°F (13°C) for at least 150 days. The total time of drying plus curing shall be at least 206 days.

(C) *Ensuring an Acceptable Internal Brine Concentration*: (1) To establish compliance, the establishment shall take product samples from the first 12 lots of production as follows: From each lot,

(i) One sample shall be taken for each 5 or more hams;

(ii) Each sample shall be taken from the biceps femoris. As an alternative to the use of the biceps femoris, the Agency shall consider other method(s) of sampling the dry-cured hams to determine the minimum internal brine concentration, as long as the establishment proposes it and submits data and other information to establish its sufficiency to the Director of the Processed Products Inspection Division;

(iii) Each sample shall weigh no less than 100 grams;

(iv) The samples shall be combined as one composite sample and sealed in a water vapor proof container;

(v) The composite sample shall be submitted to a laboratory accredited under the provisions of § 318.21 to be analyzed for salt and water content using methods from the "Official Methods of Analysis of the Association of Official Analytical Chemists (AOAC)," 15th Edition, 1990, Section 983.18 (page 931) and Section 971.19 (page 933) which are incorporated by reference. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from the Association of Official Analytical Chemists, suite 400-BW, 2200 Wilson Boulevard, Arlington, VA 22201-3301. Copies may be inspected at the Office of the FSIS Hearing Clerk, room 3171, South Agriculture Building, Food Safety and Inspection Service, U.S. Department of Agriculture, Washington, DC 20250 or at the Office of the Federal Register, 1100 I Street, NW, room 8401, Washington, DC. If the time between sampling and submittal of the composite sample to the accredited laboratory will exceed 8 hours, then the establishment shall freeze the composite sample immediately after the samples are combined;

(vi) Once the laboratory results for the composite sample are received, the manufacturer shall calculate the internal brine concentration by multiplying the salt concentration by 100 and then dividing that

figure by the sum of the salt and water concentrations;

(vii) Compliance is established when the samples from the first 12 lots of production have a minimum internal brine concentration of 6 percent. Lots being tested to establish compliance shall be held until the internal brine concentration has been determined and found to be at least 6 percent. If the minimum internal brine concentration is less than 6 percent, the lot being tested shall be held until the establishment brings the lot into compliance by further processing.

(2) To maintain compliance, the establishment shall take samples, have the samples analyzed, and perform the brine calculations as set forth above from one lot every 13 weeks. Lots being tested to maintain compliance shall not be held. If the minimum internal brine concentration is less than 6 percent in a lot being tested to maintain compliance, the establishment shall develop and propose steps acceptable to FSIS to ensure that the process is corrected.

(3) Accredited laboratory results and the brine calculations shall be placed on file at the establishment and available to Program employees for review.

Method No. 6.

(A) *Curing*: The establishment shall cure the ham to a minimum brine concentration of 6 percent by the end of the drying period. Brine concentration is calculated as 100 times the salt concentration divided by the sum of the salt and water concentrations.

Percent brine = $100 \times [\text{salt}] / ([\text{salt}] + [\text{water}])$

The Agency will accept the brine concentration in the biceps femoris as a reasonable estimate of the minimum brine concentration.

(B) *Drying and Total Process Times*: The establishment shall dry the cured ham at a minimum temperature of 110°F (41°C) for at least 4 days. The total time of drying plus curing shall be at least 34 days.

(C) *Ensuring an Acceptable Internal Brine Concentration*:

(1) To establish compliance the establishment shall take product samples from the first 12 lots of production as follows: From each lot,

(i) One sample shall be taken from each of 5 or more hams;

(ii) Each sample shall be taken from the biceps femoris. As an alternative to the use of the biceps femoris, the Agency will consider

other methods of sampling the dry-cured hams to determine internal brine concentration, as long as the establishment proposes it and submits data and other information to establish its sufficiency to the Director of the Processed Products Inspection Division;

(iii) Each sample shall weigh no less than 100 grams;

(iv) The samples shall be combined as one composite sample and sealed in a water vapor proof container;

(v) The composite sample shall be submitted to a laboratory accredited under the provisions of § 318.21 to be analyzed for salt and water content using methods from the "Official Methods of Analysis of the Association of Official Analytical Chemists (AOAC)," 15th Edition, 1990, section 983.18 (page 931) and section 971.19 (page 933) which are incorporated by reference. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from the Association of Official Analytical Chemists, suite 400-BW, 2200 Wilson Boulevard, Arlington, VA 22201-3301. Copies may be inspected at the Office of the FSIS Hearing Clerk, room 3171, South Agriculture Building, Food Safety and Inspection Service, U.S. Department of Agriculture, Washington, DC

20250 or at the Office of the Federal Register, 1100 L Street, NW., room 8401, Washington, DC. If the time between sampling and submittal of the composite sample to the accredited laboratory will exceed 8 hours, then the establishment shall freeze the composite sample immediately after the samples are combined;

(vi) Compliance is established when the samples from the first 12 lots of production have a minimum internal brine concentration of 6 percent. Lots being tested to establish compliance shall be held until the internal brine concentration has been determined and found to be at least 6 percent. If the minimum internal brine concentration is less than 6 percent, the lot being tested shall be held until the establishment brings the lot into compliance by further processing.

(2) To maintain compliance, the establishment shall take samples, have the samples analyzed, and perform the brine calculations as set forth above from one lot every 13 weeks. Lots being tested to maintain compliance shall not be held. If the minimum internal brine concentration is less than 6 percent in a lot being tested to maintain compliance, the establishment shall develop and propose steps acceptable to FSIS to ensure that the process is corrected.

(3) Accredited laboratory results and the brine calculations shall be placed on file in

the establishment and available to Program employees for review.

PART 320—[AMENDED]

3. The authority for part 320 continues to read as follows:

Authority: 34 Stat. 1260, 79 Stat. 930, as amended, 81 Stat. 584, 84 Stat. 91, 438; 21 U.S.C. 71 *et seq.*, 601 *et seq.*

4. Paragraph (b)(7) is added to § 320.1 to read as follows:

§ 320.1 Records required to be kept.

* * *

(b) * * *

(7) Sample results and calculation results as required by processing procedures to destroy trichinae in § 318.10(c)(3)(iv) (Methods 5 and 6).

* * *

Done at Washington, DC on: May 8, 1992.

H. Russell Cross,

Administrator, Food Safety and Inspection Service.

[FR Doc. 92-12169 Filed 6-19-92; 8:45 am]

BILLING CODE 3410-DM-M

federal register

**Monday
June 22, 1992**

Part IV

Environmental Protection Agency

**40 CFR Parts 261, 266 and 271
Hazardous Waste Management System;
Identification and Listing of Hazardous
Waste; Exclusions; Final Rule**

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261, 266, and 271

[FRL-4098-4]

RIN 2050-AC85

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Exclusions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is amending the hazardous waste management regulations (40 CFR 261.4(a)) to exclude from the definition of solid waste those coke by-product residues that are recycled by being: (1) Returned to coke ovens as a feedstock to produce coke; (2) returned to the tar recovery process as a feedstock to produce coal tar; or (3) mixed with coal tar prior to coal tar refining or sale. These residues are hazardous because they exhibit the Toxicity Characteristic (TC) of 40 CFR 261.24. This exclusion was proposed on July 26, 1991 (56 FR 35758). The Agency is also excluding the similarly-situated hazardous waste K087 when recycled in this way. These exclusions are conditioned on there being no land disposal of the recycled material. EPA's July proposal also proposed to list as hazardous seven wastes from the production, recovery and refining of coke by-products. EPA will address these listings in a separate final rule to be issued at a later date.

EFFECTIVE DATE: June 22, 1992.

FOR FURTHER INFORMATION CONTACT:

Mr. Ron Josephson, Environmental Engineer, U.S. Environmental Protection Agency, Office of Solid Waste (OS-333), 401 M St., SW, Washington, DC 20460, (202)260-4770; or call the RCRA/Superfund Hotline at: (800)424-9346 (toll-free in the U.S.), (800)553-7672 (TDD), or (703)920-9810.

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I. Background

A. AISI Petition

On May 6, 1987, the Environmental Protection Agency (EPA) published a proposed rule which would expand controls on hazardous waste combustion in boilers and industrial furnaces (52 FR 16982). Because of the implications of this proposed rule on the recycling practices of the iron and steel industry, the American Iron and Steel Institute (AISI) petitioned EPA, requesting that EPA not classify product coke and coal tar that have been produced from decanter tank tar sludge (EPA Hazardous Waste No. K087), as solid wastes. AISI also requested that EPA exclude the mixture of K087 and coal or coal tar from the definition of solid waste when:

(1) K087 is recycled by being applied to coal prior to or just after charging the coal to a coke oven, or

(2) K087 is combined with coal tar prior to its being sold.

Coke produced from K087 is often used as a fuel and could be classified as a solid waste and a hazardous waste since it is a fuel produced from or otherwise containing hazardous waste K087 (RCRA 3004(q)(1)(a); 40 CFR 261.2(c)(2)). Coal tar, a by-product from coke production that has a high fuel value, is refined into other fuel products and also may contain K087 materials. These waste-derived materials had previously been exempt from substantive regulation under 40 CFR 261.6(a)(3)(vii). However, AISI requested that the coke and coal tar produced from coal containing decanter tank tar sludge (K087) be excluded from the definition of solid waste in § 261.4(a) since the addition of K087 sludge does not affect

the concentration of hazardous constituents in the product coke or coal tar. AISI submitted data to EPA on metals and organic constituents in coke, coal tar, and decanter tank tar sludge. The data contained analyses for the following metals—arsenic, cadmium, chromium, lead, and mercury, and for the following organics—anthracene and phenanthrene, benzo(a)anthracene and chrysene, benzo(a)pyrene, fluoranthene, pyrene, naphthalene, and phenol.

After review of these data, EPA proposed the exclusion (52 FR 16982, May 6, 1987), and took final action on February 21, 1991 (56 FR 7203). (This action came about as part of a larger rulemaking establishing emissions standards for boilers and industrial furnaces burning hazardous waste.)

EPA determined that:

1. Basis for Approval of AISI Petition

(1) The recycling of tar decanter sludge, by application to the coal charge does not appear to have a significant effect on the chemical composition of end product coke;

(2) The organic chemical composition of the tar decanter sludge does not appear to be significantly different from that of the coal tar; and

(3) The concentration of one metal (lead) in the sludge appears to be slightly higher than in the coal tar. However, the increase does not appear to be statistically significant due to the high variability of the concentration values.

Based on the above, and the fact that there is such a small quantity of sludge relative to the quantity of coke and coal tar produced by the coking process, EPA determined that decanter tank tar sludge recycling, as described here, does not significantly affect the concentration of toxic metals and organic constituents in coal tar or coke (*id.*)

Based on these findings, the Agency exercised its discretion to determine whether the coke and coal tar containing K087 materials should be considered "discarded," and hence solid wastes and concluded that they were not. Hence, EPA excluded the coke product (produced from coal and decanter tank tar sludge K087) and the coal tar mixed with the decanter tank tar sludge from the definition of solid waste. As the Agency stated, these two methods of recycling K087 are not part of the waste disposal problem, but rather can be viewed as part of an ongoing industrial recycling process; *American Mining Congress v. EPA*, 907 F. 2d 1179, 1186 (D.C. Cir. 1990).

2. Exclusion of Coking Process

EPA reasoned that it also followed that the coking process should be excluded from any regulation when K087 is used as an ingredient to produce coke. EPA stated that given that K087 is similar to other materials used to produce coke and comes from the same process as these other materials, it would be anomalous to assert RCRA control over the coke oven itself. This form of management is similar to raw materials management and again is "not part of the waste disposal problem." For this reason, EPA excluded coke ovens that process hazardous waste K087 from the applicability of the BIF rule (40 CFR 266.100). EPA also noted that coke ovens are subject to a special regulatory regime under amended section 112(i)(8) of the Clean Air Act, and that RCRA regulation could disrupt the Clean Air Act regulatory scheme. Thus, the Agency decided that RCRA regulation of coke ovens reprocessing K087 materials is not appropriate in any event (id.; see also 56 FR 43875, September 5, 1991).

B. Other Coke By-Product Plant Residues Returned to Coke Ovens

The exclusion from the definition of solid waste provided in the final BIF rule applied only to coke and coal tar produced from hazardous waste K087. This exclusion thus did not extend to coke or coal tar produced from wastes or by-product residues other than K087, nor does it exclude the residues themselves when they are reinserted into coke ovens or mixed with coal tar. These products and residues thus would have been subject to full RCRA regulation (if they exhibit a characteristic of hazardous waste) before reinsertion into the coke oven. These materials (i.e., coke by-product plant residues other than K087 that exhibit the Toxicity Characteristic) are the subject of today's final rule and are discussed further below.

This result appeared unwarranted to EPA because the subject by-products are not significantly different from the K087 materials already excluded. EPA thus proposed to exclude these materials from the definition of solid waste when they are recycled to the coke oven or mixed with coal tar. In that proposal, the Agency proposed several options as to where and how the exclusion could apply (56 FR 35777, July 26, 1991).

EPA also issued an Administrative Stay of the regulatory standards that would otherwise apply to coke ovens that receive residues exhibiting the toxicity characteristic from the coke by-products recovery process (56 FR 43874; September 5, 1991). The primary effect of the stay was to halt the application of RCRA air emission standards to coke ovens when they reprocess coke by-product residues and to give the Agency time to evaluate public comments on the exclusion from the definition of solid waste that was proposed for these residues on July 26, 1991 (56 FR 35787). As a result of the stay, coke oven operators were allowed to continue to recycle coke by-product residues back into their coke ovens without RCRA regulation of the ovens' air emissions pending EPA action on the proposed rule.

Today's final rule differs from the stay in that it does not just apply to the coke production process but instead excludes from the definition of solid waste coke by-product plant residues that exhibit the Toxicity Characteristic, when they are recycled by being returned to coke ovens or mixed with coal tar. By meeting the terms of the exclusion, many materials would not be subject to all portions of the RCRA regulations.

II. Basis for Today's Rule

As discussed in more detail below, the record for this rulemaking establishes clearly that coke by-product plant residues exhibiting the TC are not

significantly different from K087 and that these TC by-product residues are recycled to the coke process in ways identical to K087. It is clear to the Agency, therefore, that the regulatory scheme for all materials, when recycled in this way, should be the same. It also appears to the Agency that safe handling of these materials before and during recycling can be assured without full scale subtitle C regulation.

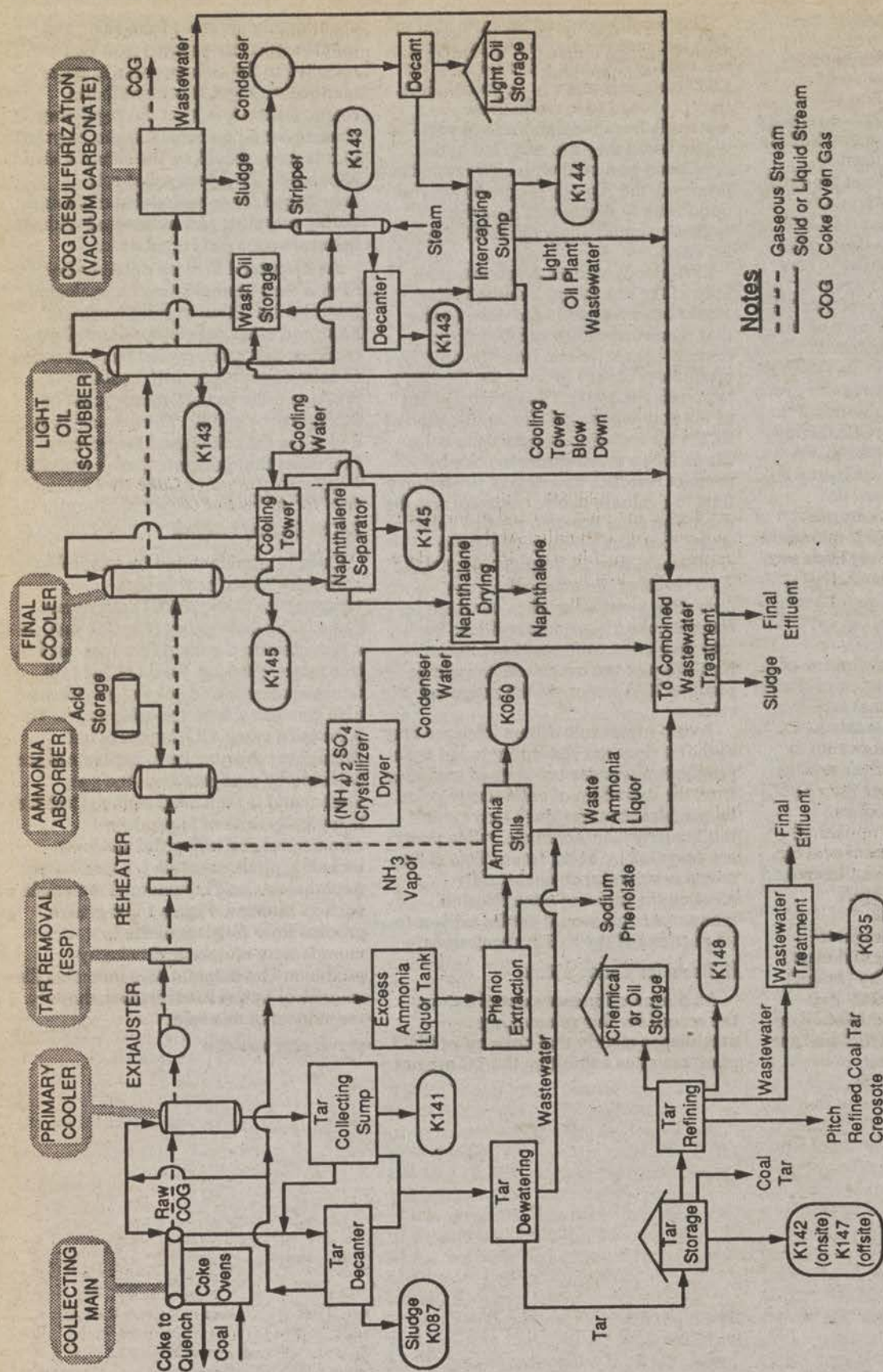
As discussed in more detail below, EPA is thus promulgating an exclusion from the definition of solid waste for K087 and other coke by-product plant residues that are recycled by reinsertion to coke ovens along with coal to produce coke, or that are recycled by mixing with coal tar. The next section describes the coking and tar refining processes that generate these residues.

A. Description of Processes

1. The Coking Process

Coke is manufactured by anaerobic carbonization of coal in high temperature (900-1200°C) coke ovens. Coke is the main product and is used as a reductant in the blast furnaces used in iron manufacturing. Coal tar, light oil, ammonia liquor and coke-oven gas are also generated from the coke ovens. The coke oven gas (COG) is processed through recovery units to separate other saleable by-products from the gas stream and is then used as fuel. Coal tar is typically refined to produce commercial and industrial products including pitch, creosote oil, refined tar, naphthalene, and commercial materials such as bitumen. Figure 1 is a generic process flow diagram of the manufacture of coke and coke by-products. The diagram also indicates the sources of by-product residues that are the subject of this rule.

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2. The Tar Refining Process

Coal tar is refined by either batch or continuous distillation into a number of products, including pitch, creosote, naphthalene, and tar acids. The heavy liquid components such as pitch and creosote are sent to a distillation column for further refining. The pitch, which is generated at the softening point of tar, is discharged from the still, cooled, extruded, and poured into barrels or other containers for storage.

B. Description of By-Product Residues and Recycling Processes

Coke by-product residues are generated from separation steps used in the recovery of the by-products described above. At the beginning of the process, during the removal of coal tar, tar residue accumulates in the tar collection sump and at the bottom of tar storage tanks. The most frequent management practice for tar storage tank and tar collecting sump residues, based on information received from 1985 RCRA § 3007 questionnaires and supplemental data submitted in 1987, is recycling the residues to the coke oven. Other management practices for tar storage tank residues include burning the wastes in a boiler, disposing of them in a landfill, or soliciting contractor services for removal of the wastes. The Agency believes that the proportion of wastes being recycled to coke ovens is higher than indicated by the 1987 data due to the potential impact of Land Disposal Restrictions and improvements in recycling technology in this industry.

Naphthalene recovery residues are generated in the final cooling tower, naphthalene separator and collection sumps. These residues are currently managed by recycling them to the tar decanter, the coke oven, or the crude coal tar tank. The light oil recovery process generates wash and light oil residues in the scrubber tower, the stripping still and in a decanter or centrifuge used to separate a polymerized resin referred to as wash oil muck from the recycled wash oil. These wastes are managed in a variety of ways. Over half of the reporting facilities recycle these residues to the coke oven, the tar decanter, the tar sump, or dissolve the residues in the wash oil and recycle them to the light oil recovery process. Some facilities burn the wastes in boilers or use them as fuels, or employ contractors to remove the wastes.

Coke by-product residues that are reinserted into coke ovens or mixed with coal tar usually require prior processing in order to obtain a homogeneous material for recycling

purposes. Thirteen of the 34 domestic coking facilities utilize one patented recycling technology, while other facilities use various homogenization techniques such as ball mills. Such techniques can be accomplished without land disposal of the recycled materials.

In the largest-use recycling process, steel hoppers with capacities of one to two cubic yards are used to collect by-product residues. The hoppers are transported using forklifts or trucks and may be placed in "heater huts" (metal sheds heated by steam pipes) prior to processing. The residues are then added, along with a homogenizing agent, to heated batch tanks where grinding and blending occur. The homogeneous liquid is then pumped to a building where it is blended with or sprayed on coal as it moves along a conveyor belt to the coke ovens.

These same homogenization and blending principles are used at facilities equipped with ball mills. At these facilities, the residues are transferred by truck or pipe to a homogenization tank or ball mill. Subsequent holding or mixing tanks may be used to incorporate additional coke by-product residues into the homogenized mixture. The mixture is then applied to the coal as it travels along a conveyor.

The coal tar refining plant may produce two process residuals. The first process waste is coal tar storage tank residuals which are generated at the bottom of the storage tanks prior to the refining process. This is the same process waste that is generated in the coal tar storage tanks at the coke plant. It is thus reasonable to classify this residue as a coke by-product plant residue for purposes of this rulemaking. Certain facilities agitate their tar storage tanks either by mechanical means or with an air agitator to prevent the formation of tank bottoms. However, compliance with the benzene NESHAP requires the replacement or retrofitting of these storage vessels at coking facilities. The tank clean-outs required for this action have generated large quantities of tank residues. Tar storage tank residues are generally mixed with coal and recycled to the coke oven. Facilities that do not produce coke may transport the residues to coking facilities or incinerate or land dispose these wastes. The second process waste from the refining plant is high boiling-point residue which accumulates on the fire tubes and at the bottom of the batch still and must be removed periodically. This waste is referred to as tar distillation residue. The distillation residues may be recycled to the distillation tank along with the crude coal tar or to the coke

oven. Other waste management practices include land disposal and removal by contractors. Continuous distillation does not generate any process residues.

Incidentally, in normal by-product plant residue recycling practices, a small amount of by-product residue is used essentially as make up material by adding the residue to a larger volume of coal tar. This is the practice EPA is excluding in today's rule. Mixing wastes generated from the coke by-products processes with a small amount of coal tar is not a recycling process in this industry, and would not meet the terms of the exclusion as stated in this notice. Should this practice occur, the Agency would view it as using coal tar to dilute hazardous waste, not as a recycling practice.

C. Similarity of other Coke By-Product Plant Residues to K087

Coke by-product plant residues are similar in composition to tar decanter sludge (K087) because they are generated from the same process as K087 and are not subject to further processing steps that would alter the chemical composition of the products or by-products. As described above in the process discussion, the first units in the coke oven gas (COG) cleaning process, which directly follow the coke oven, are the primary cooler and the tar decanter. The tar decanter removes particulates containing coal fines from the coal tar and generates K087 sludge.

K087 waste generally contains from six to eleven percent water and from 89 to 94 percent coal tar compounds, which are primarily aromatic hydrocarbons such as those found in pitch, anthracene oil, and light, middle and heavy oils. The volatile organics found in highest concentrations in K087 waste include benzene, toluene and xylene. Semivolatile organics include acenaphthalene, anthracene, benz(a)anthracene, benzo(b and k) fluoranthene, benzo(a)pyrene, chrysene, fluorene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene and pyrene.

The remainder of the coking process consists of by-product purification and recovery operations. The by-products are generated from the coke oven along with the coal tar and originate from the same COG stream that carries the coal tar. The by-product residues that are recycled to the coke oven are primarily generated from distillation columns, separators, and scrubbers used in the recovery of by-products, or sumps and storage tanks used in the process. These by-product residues include process

residues other than K087 from the recovery of coal tar, coal tar storage tank and distillation residuals, sump, distillation and decanter residues from light oil recovery, and naphthalene collection and recovery residues.

To make a listing determination on wastes generated from the coking industry, the Agency evaluated waste composition data obtained from sampling and analysis of by-product waste streams at various coke plants. The organic constituents found in highest concentrations in the by-product waste include benzene, acenaphthalene, anthracene, benz(a)anthracene, benzo(b and k)fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, chrysene, fluorene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene and pyrene. These by-product residues are often characteristically hazardous because they exhibit the Toxicity Characteristic for benzene.

The Agency believes that since the by-product residues are generated from the same process as the coke, coal tar, and K087 sludge, and contain the same constituents as other residual streams such as K087, the by-product residues will behave in a similar way, chemically, to K087 when recycled to coke ovens or mixed with coal tar. Furthermore, since the recycling of K087 has been shown not to have a significant effect on the chemical composition of the coke and coal tar products, EPA believes the recycling of by-product residues likewise would not have a significant effect on the chemical composition of these products.

III. Justification for Exclusion from the Definition of Solid Waste

EPA is today adopting final rules providing for an exclusion from the definition of solid waste for coke by-product plant residues that exhibit the TC when these by-products are recycled by being returned to coke ovens either directly or by being mixed with coal tar prior to its refining or sale as a product. This exclusion includes residues from the coal tar refining process, as well as residues otherwise classified as K087 (provided, of course, that these residues are recycled as described above). The exclusions apply subsequent to the point of generation of the residues, and also apply to residues whether or not generated at the site of the coke oven or a tar refiner. Importantly, the exclusion is conditioned on there being no land disposal of the residues at any point from residue generation to reinsertion to the coke oven or tar recovery or refining process. Materials that are stored in piles on the land are thus considered to

be solid wastes and are not excluded from regulation. Similarly, materials used in a manner constituting disposal or materials that are incinerated are fully regulated under RCRA subtitle C and all units managing these wastes must meet applicable RCRA regulations. Conditioned in this way, as explained below, the Agency believes the exclusion is a reasonable exercise of its discretion to determine whether materials the by-products residues are "discarded", in the sense of being part of the waste management problem. *American Mining Congress v. EPA*, 907 F.2d at 1186-87 (D.C. Cir. 1990).

The Agency notes further that these materials would become solid and hazardous wastes if they are accumulated speculatively. See 40 CFR 261.2(c)(4) and 261.1(c)(8). This constraint guards against prolonged accumulation without recycling of the residues, a situation that has led to repeated severe damage incidents in other recycling industries. See generally 50 FR 658-61 (January 4, 1985).

A. Exclusion for Residues Generated and Recycled at Coke Oven Site

The exclusion for coke by-product residues rests on the following factors. First, recycling of this material causes no statistically discernible increase in concentration of toxic constituents in the coke ultimately produced, or in the feed to coke ovens (when the by-product residues are added to coke oven feedstock). Second, because the by-product residues are generated from the coking process and are inserted on-site back into that process, the activity itself can be viewed as one continuing process rather than a waste management activity. *American Mining Congress*, 907 F.2d at 1186. Third, by conditioning the exclusion of no land disposal occurring, the traditional RCRA objectives of absence of land placement of material and general safe handling will be assured. Thus, any of these materials that are placed in land disposal units such as piles are solid and hazardous wastes, and the units are regulated units. (In addition, of course, an abandoned spill of these materials (viz. a spill not picked up expeditiously and used beneficially) constitutes disposal of a hazardous waste. See 45 FR at 76627 (Nov. 19, 1980); 48 FR at 2509-10 (Jan. 19, 1983); 50 FR at 28712-713 (July 15, 1985); and 55 FR at 22671 (June 1, 1990).)

The Agency has also examined the question of air emissions from these various operations in determining whether to exclude the residues. With respect to air emissions from the coke oven itself, not only will net emissions

be unchanged by the recycling of these residues (since they are so chemically similar to a feedstock used in any case) but coke ovens are subject to a detailed regulatory scheme under amended sections 112(d)(8) and (i)(8) of the Clean Air Act. These provisions represent a carefully crafted Congressional compromise as to the appropriate level of regulation of air emissions from these units, which compromise would be upended by imposition of RCRA regulation. (For example, the Clean Air Act allows coke ovens to elect a later compliance date with the standards based on residual risk in exchange for meeting increasingly strict technology-based standards [CAA section 112(i)(8)]. These provisions would be undermined if RCRA risk-based standards were now applied. RCRA air emissions standards would appropriately apply, however, if coke ovens were to process hazardous wastes, such as spent solvents, generated from sources other than normal coking and coke by-product operations. The Agency's point here is that where the coke oven is just reprocessing materials from coking and related operations, the Clean Air Act regulatory scheme should operate.) This result would be particularly untoward given the lack of effect of the recycling practice on the air emissions themselves. See RCRA section 1006(b) (integration of RCRA regulations with other regulatory programs administered by EPA).

With respect to air emissions from operations preceding the coke ovens, the Agency also believes that regulatory standards imposed under the Clean Air Act already provide adequate controls. The operations are addressed by the emission standards for benzene waste operations (part of the so-called benzene NESHAP) contained in 40 CFR part 61 subpart FF (subpart FF applies to waste management units (as defined in the subpart instead of RCRA) (§ 61.340(a) and (b)).) The subpart includes standards for tanks, containers, and treatment units. (The Agency has recently agreed to stay the effectiveness of these provisions until clarifying amendments are promulgated. However, the Agency has committed to promulgate the amendments by December 1, 1992.) Given this level of regulatory control, the Agency does not regard these operations as part of the waste management problem.

All of these reasons also apply to the parallel recycling of K087 decanter tank tar sludge, an identical recycling practice involving a practically identical material. The exclusion adopted today thus also applies to K087 subsequent to

its generation, provided that it is recycled in the manner described above and that there is no land disposal of the material during the recycling process.

B. Exclusion of Coke By-products Generated Off-site

With respect to by-product residues generated off-site, many of the same considerations apply. EPA believes that proper tracking of the material can be assured both due to commercial reality of the close relationship of tar refiners to coke oven plants, and, for regulatory purposes, due to the requirement in § 268.7(a)(6) that a notice be kept in facility records documenting that the residues are generated, why they are excluded, and what their disposition is. See also 56 FR 41174 (Aug. 19, 1991). Also, the Agency believes that conditioning the exclusion on there being no land disposal of the residues will prevent the types of land pollution that are the subtitle C program's traditional focus.

With respect to air emissions, although the benzene NESHAP does not apply to off-site operations not classified as coke by-product recovery, the Agency does not view this as warranting classification of the materials as a solid waste when located at such plants (i.e. prior to shipment to a coke oven site). Commenters pointed out that classification of the residues as RCRA hazardous wastes could impede recycling by necessitating use of manifests, further recordkeeping, and possible psychological reluctance to handle the material. Certainly, a waste classification would add a level of regulatory complication, which would likely decrease recycling of this material. Because the environmental benefits of imposing a waste classification appear marginal (as set out above) and because of the reasonable possibility that the classification would impose some burdens on a recycling practice that would result in less of the residues being recycled, the Agency is exercising its discretion so that residues generated off-site are not considered to be discarded, and hence are not solid wastes. This exclusion is conditioned on the residues being recycled in the manner explained above, and conditioned further on there being no land disposal of the residues.

A final point is the explanation of how the exclusion is worded in the regulation. The current exclusion in § 261.4(a)(10), adopted in the February 21, 1991 regulations excludes the coke fuels produced from the recycling practice. Today's regulation omits reference to the products (i.e., coke and coal tar) made from the recycling of

hazardous wastes. This is because the exclusion rule excludes the coke by-product residues when recycled, subsequent to the point of generation. Thus, an exclusion for the products made by this recycling process is redundant.

C. Exclusion of Coke By-product Residues Generated at Tar Refining Sites

1. Exclusion of Tar Refining Residues Recycled On-site

Today's regulation also applies to residues generated by tar refiners, as well as to residues generated at coke ovens. As mentioned above, some residues (from fire tubes, tanks, etc.) are recycled at the tar refiner site. The residues are reinserted into the crude coal tar storage tank or into the pitch fraction before it is separated. Products made from the distillation processes include creosote, chemical oils, and pitch. These products of course are not subject to RCRA regulation.

EPA is also excluding these residues from being solid wastes before products are produced. The reasons are similar to these for coke by-product residues. Thus, facilities may recycle tar refining residues to various parts of the tar refining process as long as the recycling process, or any pre-handling, does not involve land disposal. If the residues are accumulated speculatively, spilled without immediate cleanup, they would be solid wastes. In addition, the exclusion applies only to residues from the coke by-products industry used in the tar refining process. Adding non-coke by-product hazardous waste not only has none of the attributes of a closed process (the situation raising jurisdictional limits on RCRA authority), but could have adverse environmental effects by using refined tar to mask unrelated hazardous waste.

2. Exclusion of Tar Refining Residues Recycled Off-site

Several residues from the tar refining portion of the industry are recycled off-site, often by being sent to a coking facility. The residues have constituents similar to K087 and are similarly amenable to recycling to the coke oven. For the reasons stated above, the recycling exclusion published today applies to tar refining materials recycled off-site but within the coke by-products industry.

Again, recycling of these residues must involve no land disposal. Should these materials be land disposed, speculatively accumulated, spilled (at a facility or during transport) and not expeditiously picked up and used, or

mixed with hazardous wastes from outside the coke by-products industry, the exclusion will not apply to the materials, and they will be considered solid wastes from the point of generation. By providing an exclusion based on this no land disposal scenario, the Agency believes that the value of the materials can be recovered by the industry in an environmentally responsible manner.

D. Response to Comments

EPA received comments from several industry groups concerning the proposed recycling exclusion. All the commenters supported the general concept of the exclusion from the definition of solid waste for coke by-product residues that are recycled by being returned to coke ovens as a feedstock to produce coke. There was disagreement over the point at which the exclusion should take effect (i.e., at the point of generation of coke by-product residues or at the point of reinsertion of the residues into coke ovens). Many commenters supported an exclusion at the point of generation of the residues. As proposed, the exclusion would have begun at the point of reinsertion of residues into coke ovens. The industry commenters interpreted the proposed exclusion as requiring an RCRA permit for the management of residues prior to the point of reinsertion. They stated that processing of the residues is required before reinsertion to a coke oven or mixing with coal tar. Several commenters contended that an exclusion at the point of reinsertion would have adverse economic effects on the coke by-products industry and associated recyclers (due to the alleged necessity, trouble, and expense associated with obtaining RCRA permits) and would discourage, without any resulting environmental benefit, the recycling of residues that is currently occurring.

EPA believes that the exclusion promulgated today (i.e., that, subject to certain conditions being fulfilled, the exclusion applies after the point of generation) meets these commenters' concerns. In addition, as explained above, the Agency believes further that the exclusion, as conditioned, adequately assures that these operations are conducted safely.

Two commenters expressed concern over the rescission, promulgated in the BIF rule, of the exclusion for coke and coal tar containing K087 at 40 CFR 261.6(a)(3)(vii). The Agency clarifies here that the exclusion for coke and coal tar containing K087 promulgated in the BIF rule at 40 CFR 261.4(a)(10) negates

the need for the exclusion at § 261.6(a)(3)(vii).

Likewise, as explained above, the exclusion promulgated today makes it unnecessary to mention coke and coal tar in the exclusion. In addition, two commenters addressed the issue of unwarranted application of the derived-from rule to by-products of the coking process. They pointed out that the exclusion promulgated in the BIF rule covers only products containing or produced from K087, and does not exclude the hazardous waste prior to that point. This is a concern because other secondary materials from the coking process are reinserted into coke ovens and a strict reading of the regulations would cause these materials to be "derived-from" hazardous waste K087. EPA does not consider marketable by-products of the coking process (e.g., light oil, naphthalene) to be derived from K087 under these circumstances. As stated earlier, to avoid confusion on this issue, the Agency is rewording the exclusion to also exclude K087 beyond the point of generation, when it is recycled to coke ovens or mixed with coal tar subject to the provisions stated in the exclusion.

Another issue raised by commenters that requires some clarification is that of on-site versus off-site recycling. One commenter supported limiting the proposed exclusion for coke by-product residues to residues that are recycled on-site (i.e., at the same site where they were generated). Another commenter suggested expanding the exclusion to encompass off-site recycling of residues. This commenter stated that "there is no controlling judicial precedent that provides a basis for EPA to limit exclusions from the definition of solid waste to on-site recycling situations." The commenter referenced the January 8, 1988 *Federal Register* (53 FR 524) discussion of this topic, wherein EPA noted that no automatic on-site/off-site distinction can be made in terms of assessing whether a particular recycling process qualifies as an on-going manufacturing activity. The commenter has misinterpreted this preamble discussion. EPA actually noted that the existence of on-site recycling is a relevant element in classifying a recycling process as part of an on-going manufacturing operation. However, the Agency believes that the mere fact that recycling takes place on-site does not necessarily mean that the activity is part of an on-going manufacturing process. EPA also stated that "on-site or single generator recycling activities can continue to be characterized by

elements of discard and so remain within the Agency's Subtitle C jurisdiction." In other words, EPA does not believe that on-site recycling automatically qualifies a recycling process as part of an on-going manufacturing operation and, therefore, beyond RCRA regulation. EPA makes no reference in the January 8, 1988 preamble to the inclusion of off-site recycling activities in what EPA considers an on-going manufacturing process.

The Agency received several other comments not directly relevant to the generation or recycling of TC hazardous wastes at coke by-products facilities. In many cases, the commenters were concerned with similar materials or past generation and disposal practices. The Agency will respond to such comments in the final listing rule, scheduled for mid-1992.

IV. Relationship to Other Regulatory Programs

A. Toxicity Characteristic

Many of the coke by-product plant residues that are returned to coke ovens with coal exhibit the Toxicity Characteristic for benzene, and are therefore hazardous wastes. Recycling these characteristic hazardous wastes in this way renders the coke oven subject to regulation under the BIF rule. When the resultant waste-derived coke is burned as a fuel, the burning unit is likewise subject to regulation. The exclusion promulgated today, when all its conditions are met, frees these materials and units from regulation under RCRA.

B. Burning of Hazardous Waste in Boilers and Industrial Furnaces

Members of the coke by-products industry have requested that coke by-product plant residues be excluded from the definition of solid waste when they are recycled to coke ovens or mixed with coal tar. Without this exclusion, coke ovens could be deemed to be burning hazardous waste when they reprocess the by-products, subjecting the coke ovens to the full range of RCRA regulations. This request was, in part, accomplished in the BIF rule by the promulgation of the exclusion to the definition of solid waste for recycled K087 (which accounts for most of the waste generation in this industry).

With the promulgation of the recycling exclusion for K087 in the BIF rule, generators became required to furnish, at a minimum, a one-time notification for restricted hazardous wastes subject to the exclusion, according to the

provisions of 40 CFR 268.7(a)(6). In the preamble to the rule that clarified this requirement (56 FR 3866, January 31, 1991), the Agency stated what tracking requirements are still necessary for restricted hazardous wastes (such as K087) which meet exclusions to the definition of solid or hazardous waste subsequent to generation. At a minimum, a facility must provide a one-time notification in its operating record that indicates the generation of a restricted waste and its disposition. Such records typically should include the quantities of waste generated, the equipment used to perform the recycling, the location of the process, and a description of the process that shows that the waste meets the terms of an exclusion. Respondents to an enforcement action bear the burden of proof that the material qualifies for the exclusion by demonstrating that there is a known market or disposition for the material, and that it meets the terms of this exclusion (See 40 CFR 261.2(f)).

For wastes generated in the coke by-products industry, generators thus have already had to show that K087 waste is recycled (per the BIF rule exclusion). Should the disposition of the waste change for any reason, the facility must update the notification records accordingly to keep these records accurate. For example, if the materials are no longer recycled, additional Land Disposal Restrictions requirements may apply. For non-listed TC hazardous wastes (other than K087), the Agency will address their restrictions and treatment standards in a future rulemaking scheduled for promulgation later in 1992.

In summary, the recycling of TC characteristic residues does not appear to have a significant effect on the concentration of metals and organic constituents in the final coke and coal tar products. In addition, recycling of these residues will not affect emissions from the coke ovens and blast furnaces. The characteristic residues exhibit strong similarities to coal and coke, and are amenable to the same kind of processing; therefore, the Agency believes it is warranted in determining that these residues, when recycled by being returned to the coke oven or mixed with coal tar, are not discarded when these materials are not spilled or land disposed. As a result, EPA is excluding coke by-product plant residues that are recycled in this way from the definition of solid waste.

V. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified states to administer and enforce the RCRA program within the state. (See 40 CFR part 271 for the standards and requirements for authorization.) Following authorization, EPA retains enforcement authority under sections 3008, 7003, and 3013 of RCRA, although authorized states have primary enforcement responsibility.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a state with final authorization administered its hazardous waste program entirely in lieu of EPA administering the Federal program in that state. The Federal requirements no longer applied in the authorized state, and EPA could not issue permits for any facilities in the state that the state was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the state was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized state until the state adopted the requirements as state law.

In contrast, under section 3006(g) of RCRA, new requirements and prohibitions imposed by HSWA take effect immediately in all states, regardless of authorization status. EPA is directed to implement those requirements and prohibitions in an authorized state, including the issuance of permits, until the state is granted authorization to do so. While states must still adopt HSWA-related provisions as state law to retain final authorization, HSWA applies in authorized states in the interim.

B. Effect on State Authorization

Today's rule is promulgated pursuant to the authority of HSWA. This is because the rule is part of the determination of whether or not to list coke by-product wastes as hazardous pursuant to section 3001(e)(2) (an HSWA provision). In addition, this rule is part of the process of determining the proper scope of the Toxicity Characteristic, so it implements that HSWA provision (RCRA section 3001(h)) as well. Therefore, EPA will implement the provisions of the exclusion promulgated today in authorized states until they modify their programs to adopt this rule and the modification is approved by EPA. A State submitting a program modification may apply to receive either interim or final authorization under section 3006(g)(2) or 3006(b), respectively, for

this provision on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications are described in 40 CFR 271.21. It should be noted that all HSWA interim authorizations will expire January 1, 1993.

40 CFR 271.21(e)(2) requires that states having final authorization must modify their programs to include equivalent regulations within a year of promulgation of these regulations if only regulatory changes are necessary, or within two years if statutory changes are necessary. These deadlines can be extended in exceptional cases (40 CFR 271.21(e)(3)). Once EPA approves the modification, the state requirements become Subtitle C RCRA requirements.

Authorized states are only required to modify their programs when EPA promulgates Federal regulations that are more stringent or broader in scope than the authorized state's regulations. For those changes that are less stringent or reduce the scope of the Federal program, states are not required to modify their programs. This is a result of section 3009 of RCRA, which allows states to impose more stringent or broader regulations than the Federal program. The regulations promulgated today at § 261.4(a) are considered to reduce the scope of the Federal program because today's rule excludes certain materials and activities now within the RCRA purview. Therefore, authorized states are not required to modify their programs to adopt regulations consistent with and equivalent to this rulemaking.

Although states are not required to adopt today's rule, EPA strongly encourages states to do so as quickly as possible. As discussed above, on the effective date of the BIF rule, August 21, 1991, many coke oven operators would have been forced to stop recycling coke by-product plant residues back into their coke ovens, absent the Administrative Stay. The Agency wants to minimize disruption to legitimate recycling practices currently taking place in the coking industry. The exclusion promulgated today will effectively do this, and authorized states are urged to adopt this provision expeditiously in an effort to promote recycling over waste disposal.

VI. Regulatory Requirements

A. Executive Order No. 12291

Under Executive Order No. 12291, EPA must judge whether a regulation is "major" and therefore subject to the requirements of a Regulatory Impact Analysis. This final rule is not major because it will not result in an effect on

the economy of \$100 million or more, and it will not increase costs or prices to industry. Rather, this regulation will reduce the overall costs and economic impact of EPA's hazardous waste management regulations by allowing a form of recycling to continue and eliminating possible permitting requirements for certain coke ovens. Because this amendment is not a major regulation, no Regulatory Impact Analysis has been conducted.

B. Paperwork Reduction Act

This rule does not contain any new information collection requirements subject to OMB review under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.*

C. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601-612), whenever an Agency is required to publish a General Notice of Rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis (RFA) that describes the impact of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). No RFA is required, however, if the head of the Agency certifies that the rule will not have a significant impact on a substantial number of small entities.

Since EPA has determined the recycling exclusion published here does not affect wastes generated by small entities (as defined by the Regulatory Flexibility Act), and the Agency believes that small entities who handle them will not generate them in significant quantities, this regulation, therefore, does not require an RFA. Accordingly, I hereby certify that this regulation will not have a significant economic impact on a substantial number of small entities.

List of Subjects

40 CFR Part 261

Hazardous waste, Recycling.

40 CFR Part 266

Hazardous waste, Recycling.

40 CFR Part 271

Hazardous waste.

Dated: June 12, 1992.

F. Henry Habicht II,
Acting Administrator.

For the reasons set out in the preamble, title 40 of the Code of Federal Regulations is amended as follows:

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6922.

2. Section 261.4 is amended by revising paragraph (a)(10) to read as follows:

§ 261.4 Exclusions.

(a) * * *

(10) EPA Hazardous Waste No. K087, and any wastes from the coke by-products processes that are hazardous only because they exhibit the Toxicity Characteristic specified in Section 261.24 of this part, when, subsequent to generation, these materials are recycled to coke ovens, to the tar recovery

process as a feedstock to produce coal tar or are mixed with coal tar prior to the tar's sale or refining. This exclusion is conditioned on there being no land disposal of the wastes from the point they are generated to the point they are recycled to coke ovens or the tar refining process.

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PART 266—STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

3. The authority citation for part 266 continues to read as follows:

Authority: Sections 1006, 2002(a) 3004 and 3014 of the Solid Waste Disposal Act, as amended by the Resource Conservation and

Recovery Act of 1976, as amended (42 U.S.C. 6905, 6912(a), 6924, and 6934).

§ 266.100 [Amended]

4. Section 266.100 is amended by removing the note to paragraph (a).

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

5. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

6. Section 271.1(j) is amended by adding the following entry to table 1 in chronological order by date of publication in the **Federal Register**:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
June 22, 1992	Exclusion from the definition of solid waste for the recycling of hazardous wastes in the coke by-products industry.	(Insert FR page numbers).	June 22, 1992.

[FR Doc. 92-14462 Filed 6-19-92; 8:45 am]

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