

Firm Name, City & State:

FEI Number:

Inspection Date(s):

FCE Number:

Investigators:

DEPARTMENT OF HEALTH AND HUMAN SERVICES
FOOD AND DRUG ADMINISTRATION

PROCESSING IN WATER IN DISCONTINUOUS AGITATING RETORTS
(Retort Survey)

INSTRUCTIONS

This report covers batch-type agitating retort systems pressure processing in water with overriding air or steam. This includes the traditional rotating systems specifically covered under 113.40(e) as well as other axial and end-over-end processing systems covered by 113.40(j), "Other Systems."

Complete the question blocks below. Narrative responses to each item can be entered in the item's "comments" area or where otherwise prompted. Draw a diagram of the retort or obtain one from the firm. Attach the diagram to the EIR as an exhibit. Measure and verify retort plumbing - record on this form. Report all pipe sizes as inside diameter (ID). Refer to 21 CFR Part 113.40(e) and pp. 32-34 of LACF Guide, Part 2.

Before entering the interior of the retort, you must confirm with the firm that you are following the firm's Standard Operating Procedures designed to meet OSHA confined space requirements. If the firm insists that only plant personnel enter the retort, witness the measurement procedure and data collection. To obtain OSHA confined space information and safety procedures, see the confined space presentation on the FDA ORAU web site. If the firm is not aware of the OSHA confined space requirements or does not have a confined space program, DO NOT ENTER THE RETORT.

If problems are found with the firm's retort equipment or processing system, refer the reader to the Turbo EIR for a narrative description of specific problems with supporting evidence, under "Objectionable Conditions and Management's Response." Submit the completed form as an EIR attachment.

RETORT DESCRIPTION

Table with 4 columns: RETORT NO. & DIMENSIONS, \*CAN SIZE, COOKER CAPACITY, STEPS/REEL. Includes a row for PROCESSING MODE with checkboxes for Axial and End-over-End.

\* List the can size covered during the inspection.

COMPUTER CONTROLS

DOES A COMPUTER CONTROL ANY OF THE RETORT FUNCTIONS? Yes No

EXPLAIN:

DOES THE FIRM HAVE DOCUMENTATION ON HAND WHICH INDICATES THAT THE COMPUTER SYSTEM HAS BEEN VALIDATED? Yes No

EXPLAIN:

IS RECORD KEEPING PART OF THE COMPUTER FUNCTION? Yes No

IF YES, DOES THE RECORD KEEPING COMPLY WITH 21 CFR PART 11? Yes No

COMMENTS:

Firm Name:

FEI Number:

**AGITATION**

IS THE AGITATING RETORT OPERATED IN THE STILL MODE? ..... Yes  No

COMMENTS:

IF CRATES ARE USED, IS THE CRATE POSITION CRITICAL TO THE COME-UP AND/OR PROCESS? ..... Yes  No

COMMENTS:

IF CRATE POSITION HAS BEEN DETERMINED AS CRITICAL TO THE PROCESS, WHAT IS THE RECOMMENDED POSITION AND HOW WAS IT DETERMINED? (FOR EXAMPLE, PROCESS ESTABLISHMENT TESTS MAY HAVE DETERMINED THAT AN ANGLED CRATE POSITION RESULTS IN FASTER HEAT PENETRATION.)

**PROCESSING WATER**

METHOD USED TO HEAT PROCESS WATER:

- A. Steam Injection into Process Water       B. Heat Exchanger       C. Steam Spreader       D. Other

IF OTHER, EXPLAIN:

**WATER DRAINS**

ARE SCREENS USED OVER ALL DRAIN OPENINGS TO PREVENT CLOGGING OF DRAINS? ..... Yes  No

COMMENTS:

IS THE DRAIN LINE VALVE WATER TIGHT AND NON-CLOGGING? ..... Yes  No

COMMENTS:

**WATER DISTRIBUTION**

WATER DISTRIBUTION SYSTEM:

- Manifold Plate? ..... Yes  No   
Spray Nozzle Heads? ..... Yes  No   
Manifold Pipe? ..... Yes  No   
Other? ..... Yes  No

IF OTHER, EXPLAIN:

DESCRIBE HOLE SIZE AND DISTRIBUTION IN MANIFOLD/SPRAY NOZZLES:

HAVE HOLE SIZES BEEN ALTERED BY PRODUCT OR MINERAL BUILD-UP? ..... Yes  No

COMMENTS:

DOES THE FIRM HAVE A CLEANING PROGRAM FOR THE WATER DISTRIBUTION SYSTEM? ..... Yes  No

COMMENTS:

Firm Name:

FEI Number:

HOW DOES THE FIRM ENSURE THAT WATER FLOW IS CONSTANT?

Visual Checks ..... Yes  No

Water Flow Measurement ..... Yes  No

Flow Meter ..... Yes  No

COMMENTS:

HOW OFTEN IS WATER FLOW CHECKED?

WHAT IS THE WATER FLOW RATE?

DESCRIBE THE PROCEDURE TO ENSURE WATER FLOW IS MAINTAINED:

PROVIDE THE WATER FLOW METER MODEL NUMBER AND LOCATION:

AT WHAT POINT DOES WATER ENTER THE RETORT WATER DISTRIBUTION SYSTEM?

Back Top ..... Yes  No

Back Bottom ..... Yes  No

Front Top ..... Yes  No

Front Bottom ..... Yes  No

Center ..... Yes  No

Multiple ..... Yes  No

COMMENTS:

EXPLAIN THE WATER DISTRIBUTION SYSTEM:

DESCRIBE THE WATER RETURN SYSTEM:

ARE WATER RETURN INLETS SCREENED? ..... Yes  No

EXPLAIN, IF NECESSARY:

IS THE PROCESSING WATER REUSED? ..... Yes  No

EXPLAIN, IF NECESSARY:

IF WATER IS REUSED DURING THERMAL PROCESSING, WHAT IS THE RECIRCULATION RATE?

Firm Name:

FEI Number:

WHAT IS THE CAPACITY OF THE WATER PUMP (GPM/LPM)?

IS WATER FLOW IDENTIFIED AND CONTROLLED AS A FACTOR CRITICAL TO THE THERMAL PROCESS?..... Yes  No

COMMENTS:

ARE WATER FLOW PROBLEMS HANDLED AS PROCESS DEVIATIONS? ..... Yes  No

COMMENTS:

DURING THE INSPECTION, WAS THERE ANY EVIDENCE OF LOW WATER FLOW?..... Yes  No

COMMENTS:

**COOLING WATER SUPPLY**

IS PROCESSING WATER USED TO COOL CONTAINERS DURING THE COOLING CYCLE?..... Yes  No

COMMENTS:

IF WATER IS INTRODUCED FROM AN EXTERIOR SOURCE DURING COOLING, IS THE WATER COOLING LINE EQUIPPED WITH A CHECK VALVE? ..... Yes  No  N/A

COMMENTS:

**TEMPERATURE-INDICATING DEVICES (113.40(e)(1))**

IS THE RETORT EQUIPPED WITH AT LEAST ONE TEMPERATURE-INDICATING DEVICE (TID) THAT ACCURATELY INDICATES THE TEMPERATURE DURING PROCESSING? ..... Yes  No

COMMENTS:

DOES EACH TID HAVE THE FOLLOWING:

(A) A SENSOR AND A DISPLAY? (**SHALL REQUIREMENT - 113.40(e)(1)**) ..... Yes  No

COMMENTS:

(B) A DESIGN THAT ENSURES THAT THE ACCURACY OF THE DEVICE IS NOT AFFECTED BY ELECTROMAGNETIC INTERFERENCE AND ENVIRONMENTAL CONDITIONS? ..... Yes  No

COMMENTS:

IS EACH TID AND EACH REFERENCE DEVICE MAINTAINED BY THE PROCESSOR TESTED FOR ACCURACY AGAINST A REFERENCE DEVICE FOR WHICH THE ACCURACY IS TRACEABLE TO A NATIONAL METROLOGY INSTITUTE, SUCH AS THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST), BY APPROPRIATE STANDARD PROCEDURES UPON INSTALLATION AND AT LEAST ONCE A YEAR THEREAFTER? (**SHALL REQUIREMENT - 113.40(e)(1)**) ..... Yes  No

COMMENTS:

Firm Name:

FEI Number:

IS THE TID REPAIRED OR REPLACED WHEN FOUND DEFECTIVE OR INCAPABLE OF BEING ADJUSTED TO THE ACCURATE CALIBRATED REFERENCED DEVICE? ..... Yes  No

COMMENTS:

WHEN A MERCURY-IN-GLASS THERMOMETER IS USED AS THE TID, IS IT EQUIPPED WITH A SCALE THAT DOES NOT EXCEED 17 DEG F/INCH (4 DEG C/CM OF GRADUATED SCALE)? ..... Yes  No

COMMENTS:

IS THE TID INSTALLED WHERE IT CAN BE ACCURATELY AND EASILY READ? ..... Yes  No

COMMENTS:

IS THE TID SENSOR INSTALLED IN THE RETORT SHELL [ ] OR IN AN EXTERNAL WELL ATTACHED TO THE RETORT [ ]

COMMENTS:

DATE THE TID LAST TESTED FOR ACCURACY: \_\_\_\_\_.

DOES EACH TID AND EACH REFERENCE DEVICE MAINTAINED BY THE PROCESSOR HAVE A TAG, SEAL OR OTHER MEANS OF IDENTITY INDICATING WHEN THEY WERE LAST TESTED FOR ACCURACY? ..... Yes  No

ARE ACCURACY RECORDS OF THE TID AND REFERENCE DEVICE MAINTAINED BY THE PROCESSOR ESTABLISHED AND MAINTAINED IN ACCORDANCE WITH PART 113.100(c) AND (d)? ..... Yes  No

Note - To answer Yes to this question the records must contain the following information per Part 113.100(c): (1) A reference to the tag, seal or other means of identity used by the processor to identify the TID; (2) The name of the TID manufacturer; (3) The identity of the reference device, equipment and procedures used for the accuracy test and to adjust the TID; (4) If the TID accuracy test is conducted by an outside facility, a guarantee, certificate of accuracy, certificate of calibration, or other document from the facility that includes a statement or other documentation regarding the traceability of the accuracy test to a National Institute of Standards and Technology (NIST) or other national metrology institute standard; (5) The identity of the person or facility that performed the accuracy test and adjusted or calibrated the TID; (6) The date and results of each accuracy test including the amount of calibration adjustment; (7) The date on or before which the next accuracy test must be performed.

In addition, Part 113.100(d) requires that records of accuracy of a reference device maintained by the processor shall include: (1) A reference to the tag, seal or other means of identity used by the processor to identify the reference device; (2) The name of the manufacturer of the reference device; (3) The identity of the equipment and reference to procedures used for the accuracy test and to adjust or calibrate the reference device; or (4) If an outside facility is used to conduct the accuracy test for the reference device, a guarantee, certificate of accuracy, certificate of calibration, or other document from the facility that includes a statement or other documentation regarding the traceability of the accuracy to a NIST or other national metrology institute standard; (5) The identity of the person or facility that performed the accuracy test and adjusted or calibrated the referenced device; (6) The date and results of each accuracy test including the amount of calibration adjustment; and (7) The date on or before which the next accuracy test must be performed.

COMMENTS:

Firm Name:

FEI Number:

STANDARD USED FOR THE TEST:

NAME AND TITLE OF PERSON WHO PERFORMED TEST:

IS THE LAST TEST DATE IDENTIFIED ON THE TID? .....Yes  No

WERE CALIBRATING TEST RECORDS PREPARED AND MAINTAINED? ..... Yes  No

COMMENTS:

DESCRIBE THE FIRM'S ACTIONS REGARDING TIDS THAT WERE OUT OF CALIBRATION:

WHEN TIDS ARE FOUND TO BE PROVIDING READINGS ABOVE THE ACTUAL TEMPERATURES, DOES THE FIRM EVALUATE PRODUCTS PRODUCED USING THOSE TIDS? ..... Yes  No

DESCRIBE THE FIRM'S PROCEDURES:

IS THE TID LOCATED WHERE IT IS EASY TO READ ACCURATELY? ..... Yes  No

(SHALL REQUIREMENT)

COMMENTS:

THE SENSOR BULB IS LOCATED IN THE ..... Retort Shell  , or External Well

(SHALL REQUIREMENT)

COMMENTS:

IS THE TID USED AS THE REFERENCED INSTRUMENT DURING PROCESSING? ..... Yes  No

(SHALL REQUIREMENT)

COMMENTS:

TEMPERATURE RECORDER (113.40(e)(2))

TYPE OF TEMPERATURE RECORDING DEVICE ..... Analog  Digital

IF OTHER, EXPLAIN:

Firm Name:

FEI Number:

IS THE TEMPERATURE CHART ADJUSTED TO AGREE AS NEARLY AS POSSIBLE WITH BUT NOT HIGHER THAN THE KNOWN ACCURATE TID DURING THE PROCESSING PERIOD? ..... Yes  No

(SHALL REQUIREMENT – NOTE ANY DIFFERENCE BETWEEN THE RECORDING THERMOMETER AND THE TID AND WHICH READING IS HIGHER.)

COMMENTS:

IS THERE A MEANS OF PREVENTING UNAUTHORIZED ADJUSTMENTS? ..... Yes  No

(A MEANS OF PREVENTING UNAUTHORIZED CHANGES IN ADJUSTMENTS SHALL BE PROVIDED. A LOCK OR NOTICE FROM MANAGEMENT STATING “ONLY AUTHORIZED PERSONS ARE PERMITTED TO MAKE ADJUSTMENTS,” POSTED AT OR NEAR THE RECORDING DEVICE, IS A SATISFACTORY MEANS OF PREVENTING UNAUTHORIZED CHANGES.)

COMMENTS:

IS THE CHART DRIVE TIMING MECHANISM ACCURATE? ..... Yes  No

IF NO, EXPLAIN:

IS THE RECORDER COMBINED WITH A TEMPERATURE (STEAM) CONTROLLER TO FUNCTION AS A RECORDING/CONTROLLING INSTRUMENT? ..... Yes  No

COMMENTS:

TEMPERATURE CONTROLLER

HOW IS TEMPERATURE CONTROLLED IN THE RETORT?

Recorder Controller  CAM Controller  Manual Switching  Computer

COMMENTS:

REPORT THE MANUFACTURER, MODEL, TYPE AND SIZE OF THE AUTOMATIC STEAM CONTROL VALVE:

IF THE TEMPERATURE (STEAM) CONTROLLER IS AIR OPERATED, DOES THE SYSTEM HAVE AN ADEQUATE FILTER TO ASSURE A SUPPLY OF CLEAN, DRY AIR? ..... Yes  No

(AIR OPERATED TEMPERATURE CONTROLLERS SHOULD HAVE ADEQUATE FILTER SYSTEMS TO ASSURE A SUPPLY OF CLEAN, DRY AIR – 113.40(e)(4).)

COMMENTS:

COME-UP PROCEDURE

DESCRIBE THE FIRM'S PROCEDURE TO BRING THE RETORT UP TO PROCESSING TEMPERATURE. INCLUDE TIME, TEMPERATURE AND NUMBER OF STEPS:

CAN THE FIRM DOCUMENT ALL STEPS OF THE COME-UP PROCEDURE? ..... Yes  No

COMMENTS:

Firm Name:

FEI Number:

DOES THE FIRM IDENTIFY PROCESS COME-UP STEPS AS CRITICAL ON THE PROCESSING FILING FORMS? ....Yes  No

*(NOTE – PROCESSING STEPS ARE REQUIRED ON THE PROCESS FILING FORM WHEN THEY HAVE BEEN IDENTIFIED AS CRITICAL TO THE THERMAL PROCESS. THIS IS ALWAYS THE CASE WHEN THE GENERAL METHOD IS USED TO CALCULATE THE F<sub>o</sub>.)*

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**AIR PURGE**

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IN SOME SYSTEMS, AN AIR PURGE (VENT VALVE) IS USED TO ENHANCE WATER ENTRY INTO THE PROCESSING VESSEL; IS AN AIR PURGE VALVE USED ON THE PROCESSING VESSEL? .....Yes  No

COMMENTS:

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HAS TIMING OF THE AIR PURGE VALVE (TIME OPEN) BEEN IDENTIFIED AS CRITICAL TO ADEQUATE TEMPERATURE DISTRIBUTION IN THE RETORT? .....Yes  No

COMMENTS:

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**HEATED PROCESS WATER**

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IS WATER PRE-HEATED IN A SEPARATE VESSEL PRIOR TO PROCESSING? .....Yes  No

IS THE WATER TEMPERATURE OF THE PRE-HEATED WATER CRITICAL TO TEMPERATURE DISTRIBUTION IN THE RETORT? .....Yes  No

COMMENTS:

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DESCRIBE THE TEMPERATURE REQUIREMENTS FOR PRE-HEATED WATER:

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DID THE FIRM MEET THE REQUIREMENTS FOR PRE-HEATING WATER DURING THIS INSPECTION? .....Yes  No

EXPLAIN:

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**RETORT PLUMBING AND EQUIPMENT ISSUES**

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WHEN WAS THE LAST MAJOR OVERHAUL OR MAINTENANCE PERFORMED ON THE RETORTS?

COMMENTS:

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DOES THE FIRM CONDUCT A RETORT SURVEY PERIODICALLY (*YEARLY*), OR AFTER A MAJOR RETORT OVERHAUL OR AFTER MAINTENANCE IS PERFORMED ON CRITICAL EQUIPMENT (*RETORTS, FILLER, BOILER CONFIGURATION, ETC.*)? A RETORT SURVEY IS NOT REQUIRED BY THE REGULATIONS, BUT IS COMMONLY USED TO DOCUMENT THAT A FIRM'S PROCESSING SYSTEM IS IN COMPLIANCE WITH FDA REGULATIONS AND THAT THE SYSTEM MEETS THE SAME CRITERIA (*VALVE TYPE, STEAM SPREADER CONFIGURATION, ETC.*) AS WHEN TEMPERATURE DISTRIBUTION STUDIES WERE CONDUCTED.

COMMENTS:

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DO THE BOILERS SUPPLY SUFFICIENT STEAM TO THE RETORTS? IS THERE SUFFICIENT PRESSURE IN THE HEADER PIPE SUPPLYING STEAM TO THE RETORTS, ESPECIALLY WHEN MORE THAN ONE RETORT IS BEING VENTED SIMULTANEOUSLY?

COMMENTS:



Firm Name:

FEI Number:

TEMPERATURE DISTRIBUTION

HAVE TEMPERATURE DISTRIBUTION STUDIES BEEN PERFORMED ON THE FIRM'S RETORTS?..... Yes  No 
IF SO, WHO CONDUCTED THE STUDY, WHAT PROCEDURES WERE FOLLOWED AND WHO EVALUATED THE DATA?

IS THERE DOCUMENTATION SUCH AS A RETORT DIAGRAM AND PARAMETERS USED TO VALIDATE THE TESTS?..... Yes  No

(FOR AN EXPLANATION OF TEMPERATURE DISTRIBUTION, SEE P. 21 OF LACF GUIDE, PART 2. SPECIAL CONSIDERATIONS FOR CONDUCTING TEMPERATURE DISTRIBUTION STUDIES IN STEAM-AIR RETORTS ARE LISTED IN FORM 3511(h).)

COMMENTS:

DATE OF LAST TEMPERATURE DISTRIBUTION STUDY: \_\_\_\_\_

HAS A TEMPERATURE DISTRIBUTION STUDY BEEN PERFORMED ON EACH INDIVIDUAL RETORT?..... Yes  No 
COMMENTS:

HAS A TEMPERATURE DISTRIBUTION STUDY BEEN PERFORMED ON EACH CONTAINER SIZE? ..... Yes  No 
COMMENTS:

HAS A TEMPERATURE DISTRIBUTION STUDY BEEN PERFORMED ON EACH CONTAINER TYPE? (E.G., GLASS, METAL, PLASTIC) ..... Yes  No 
COMMENTS:

HAS A TEMPERATURE DISTRIBUTION STUDY BEEN PERFORMED ON EACH PRODUCT OR PRODUCT TYPE?..... Yes  No 
COMMENTS:

HAVE TEMPERATURE DISTRIBUTION STUDIES BEEN PERFORMED TO DETERMINE THE EFFECTS OF TEMPERATURE DROPS DURING COME-UP AND PROCESSING? ..... Yes  No 
REPORT RESULTS:

ARE PARTIAL LOADS PROCESSED IN THE FIRM'S RETORTS? ..... Yes  No 
COMMENTS:

Firm Name:

FEI Number:

HAVE THERE BEEN ANY CHANGES TO THE RETORTS OR THERMAL PROCESSING SYSTEM SINCE THE LAST TEMPERATURE DISTRIBUTION STUDY THAT COULD AFFECT TEMPERATURE DISTRIBUTION?..... Yes  No

(THE RETORT DESIGN, LOADING CONFIGURATION, SMALLEST CONTAINER SIZE AND MANY OTHER FACTORS CAN AFFECT THE ATTAINMENT OF TEMPERATURE DISTRIBUTION IN THE RETORT – SEE PP. 21-22 OF LACF GUIDE, PART 2. A CHANGE IN ANY OF THESE FACTORS COULD NECESSITATE A NEW TEMPERATURE DISTRIBUTION STUDY AND POSSIBLY A NEW VENT SCHEDULE. IF A CHANGE HAS BEEN MADE IN THE THERMAL PROCESSING SYSTEM THAT COULD AFFECT TEMPERATURE DISTRIBUTION, THE FIRM **SHOULD** HAVE ON FILE DOCUMENTATION OF THE CHANGE, INCLUDING THE REVIEW AND APPROVAL BY A QUALIFIED PROCESS AUTHORITY.)

COMMENTS:

**RETORT CRATES AND RACKS**

DESCRIBE THE RETORT CRATES:

DIMENSIONS: \_\_\_\_\_

NUMBER OF HOLES: \_\_\_\_\_

SIZE OF HOLES: \_\_\_\_\_

LOCATION OF HOLES: \_\_\_\_\_

CRATES/BASKETS NOT USED

COMMENTS:

ARE CONTAINERS POSITIONED IN THE RETORT AS SPECIFIED IN THE SCHEDULED PROCESS? ..... Yes  No

COMMENTS:

ARE DIVIDERS, TRAYS, RACKS OR OTHER MEANS OF POSITIONING FLEXIBLE CONTAINERS DESIGNED AND EMPLOYED TO ENSURE EVEN CIRCULATION OF HEATING MEDIUM AROUND ALL CONTAINERS? ..... Yes  No

COMMENTS:

ARE DIVIDER PLATES USED? ..... Yes  No

DESCRIBE THE NUMBER OF HOLES AND DISTRIBUTION IN DIVIDER PLATES:

IS THE SAME TYPE OF DIVIDER PLATE USED FOR ALL CONTAINERS?..... Yes  No  N/A

COMMENTS:

ARE CONTAINERS PROCESSED WITHOUT DIVIDER PLATES? ..... Yes  No

COMMENTS:

Firm Name:

FEI Number:

CONTAINER NESTING (WHERE ONE CONTAINER OR MORE ARE POSITIONED ONE INSIDE ANOTHER TO REPRESENT A MUCH LARGER CONTAINER) MAY OCCUR WITH PRODUCTS DESIGNED TO STACK ON STORE SHELVES (E.G., TUNA, SARDINES).

IS CONTAINER NESTING POSSIBLE? ..... Yes  No

HOW DOES THE FIRM CONTROL NESTING OF CONTAINERS?

WAS CONTAINER NESTING EVALUATED AS PART OF THE PROCESS ESTABLISHMENT? ..... Yes  No

COMMENTS:

WHICH OF THE FOLLOWING CONTAINER TYPES ARE PROCESSED?

Metal Cans  Glass Jars  Pouches  Rigid Plastic

COMMENTS:

DOES THE FIRM PROCESS MORE THAN ONE CONTAINER SIZE? ..... Yes  No

LIST ALL CONTAINER SIZES:

METAL CANS: \_\_\_\_\_

GLASS JARS: \_\_\_\_\_

POUCHES: \_\_\_\_\_

RIGID PLASTIC: \_\_\_\_\_

IF MORE THAN ONE CONTAINER SIZE OR TYPE IS PROCESSED AT ONE TIME, DESCRIBE PROCEDURES USED:

FOR POUCHES, ARE TRAYS ADEQUATELY DESIGNED WITH POCKETS TO CONTAIN AND RESTRAIN INDIVIDUAL POUCHES DURING PROCESSING? ..... Yes  No

HAVE THESE TRAYS OR RACKS CHANGED IN ANY WAY FROM THE TRAYS USED BY THE PROCESSING AUTHORITY IN ESTABLISHING THE SCHEDULED PROCESS? ..... Yes  No

COMMENTS:

ARE TRAYS OR DIVIDER PLATES IN GOOD CONDITION WITH NO SHARP OR ROUGH POINTS THAT COULD PUNCTURE CONTAINERS? ..... Yes  No

COMMENTS:

**PRESSURE CONTROL**

ARE PRODUCTS PRODUCED USING OVER-PRESSURE? ..... Yes  No

IF YES, WHAT OVER-PRESSURE IS ACHIEVED?

IS THE RETORT EQUIPPED WITH A PRESSURE GAGE? ..... Yes  No

COMMENTS:

IS A MEANS PROVIDED FOR INTRODUCING COMPRESSED AIR OR STEAM AT THE PROPER PRESSURE AND RATE? ..... Yes  No

COMMENTS:

Firm Name:

FEI Number:

IS THE PRESSURE IN THE RETORT CONTROLLED BY AN AUTOMATIC PRESSURE CONTROL UNIT?..... Yes  No

(SHALL REQUIREMENT)

COMMENTS:

IF A PRESSURE GAGE IS PRESENT ON THE RETORT COOKER SHELL, IS IT GRADUATED IN DIVISIONS OF 2 LBS. OR LESS? ..... Yes  No

(NOTE - THIS IS A RECOMMENDATION: SHOULD REQUIREMENT - 113.40(e)(3).)

COMMENTS:

DESCRIBE THE LOCATION WHERE COMPRESSED AIR OR STEAM ENTERS THE RETORT:

IS COMPRESSED AIR USED FOR OVER-PRESSURE HEATED PRIOR TO INTRODUCTION INTO THE RETORT? ..... Yes  No  N/A

COMMENTS:

IS A DIFFUSER USED ON THE COMPRESSED AIR ENTRY LINE TO ENSURE RAPID MIXING OF THE AIR IN THE RETORT ATMOSPHERE? ..... Yes  No

COMMENTS:

HAS THE POINT WHERE AIR ENTERS THE RETORT BEEN IDENTIFIED AS A COLD SPOT IN THE RETORT? ..... Yes  No  N/A

COMMENTS:

EXPLAIN HOW PRESSURE IS CONTROLLED IN THE RETORT:

HAS OVER-PRESSURE BEEN IDENTIFIED AS CRITICAL TO THE THERMAL PROCESS? ..... Yes  No

COMMENTS:

ARE PRESSURE DROPS CONSIDERED PROCESS DEVIATIONS? ..... Yes  No

WHY OR WHY NOT? (AND ANY OTHER COMMENTS)

**RETORT SPEED TIMING (113.40(e)(5))**

IS THE ROTATIONAL SPEED OF THE RETORT SPECIFIED IN THE SCHEDULED PROCESS? ..... Yes  No

(SHALL REQUIREMENT)

COMMENTS:

Firm Name:

FEI Number:

IS THE ROTATIONAL SPEED OF THE RETORT ADJUSTED, AS NECESSARY, TO ENSURE THAT THE SPEED IS AS SPECIFIED IN THE SCHEDULED PROCESS? ..... Yes  No

(SHALL REQUIREMENT)

COMMENTS:

IS THE ROTATIONAL SPEED OF THE RETORT AND THE PROCESS TIME RECORDED FOR EACH RETORT LOAD PROCESSED?

PROCESS TIME ..... Yes  No

ROTATIONAL SPEED ..... Yes  No

(SHALL REQUIREMENT)

IF NO, IS A RECORDING TACHOMETER USED TO PROVIDE A CONTINUOUS RECORD OF THE SPEED? ..... Yes  No

(SHALL REQUIREMENT)

IF NO TO THE ABOVE 2 QUESTIONS, HOW DOES THE FIRM MONITOR AND RECORD THE RETORT SPEED AND PROCESS TIME OF EACH RETORT LOAD PROCESSED?

OTHER COMMENTS:

DOES THE FIRM HAVE A MEANS OF PREVENTING UNAUTHORIZED SPEED CHANGES ON THE RETORT? ..... Yes  No

(SHALL REQUIREMENT – A LOCK OR NOTICE FROM MANAGEMENT, POSTED AT OR NEAR THE SPEED ADJUSTMENT DEVICE WHICH PROVIDES A WARNING THAT ONLY AUTHORIZED PERSONS ARE PERMITTED TO MAKE ADJUSTMENTS, IS A SATISFACTORY MEANS OF PREVENTING UNAUTHORIZED CHANGES.)

COMMENTS:

EXPLAIN HOW THE RETORT ROTATIONAL SPEED IS MONITORED AND RECORDED:

**OTHER CONCERNS AND OBSERVATIONS**

EXPLAIN ANY OTHER CONCERNS WITH THE OPERATION OF THIS RETORT SYSTEM: