

## STANDARD PROCEDURE

CC-18

COMPANY  
OR UNIT

Clevite Research Center

70-133

SUBJECT  ACCOUNTABILITY PROCEDURE FOR SS MATERIAL				S.P. NO. CR-18
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GENERAL

The purpose of this procedure is to set out the steps to be taken in the operation of the measurement, recording and reporting system for transfers and inventories of SS material.

A. MANUFACTURING PROCESSES

1. The work involves the melting, alloying, rolling, forging, shearing, stamping, and machining of SS material into fuel plates and assemblies using vacuum furnaces, heat treat furnaces, rolling mills, forging presses, power shears, punch presses, and machine tools such as power saws and milling machines.

B. DESCRIPTION OF PROCESSING AREA

1. A floor plan (Dwg. B523) of the area in which this work is being done is attached. This area is completely self-contained and has only one entrance.

C. PERSONNEL RESPONSIBLE FOR ACCOUNTABILITY

1. The responsibility for accountability lies with the Manager, Central Services (who also acts as Accountability Representative) who reports to the President, Clevite Research Center, Division of Clevite Corporation. The Vault Custodian who is responsible for the storage, measurement and recording of transfers and inventories reports to the manager, Central Services. The Head of Production is accountable for all SS material issued to the Production Section for processing.

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D. RECEIPTS

1. The Accountability Representative will receive and sign the carrier's documents acknowledging receipt of all SS material received at Clevite Research Center.
2. The Accountability Representative will supervise the immediate removal of all SS material from the Receiving Department to the vault in the controlled area and into the custody of the Vault Custodian.
3. The Receiving Department will prepare a Receiving Record showing the number of containers and their gross weights. A copy of the Receiving Record will be sent to the Accountability Representative.
4. The Vault Custodian will determine the net weight of the SS material in each shipping container to plus or minus one gram on a 40 kg. capacity Shadowgraph Exacto Gram Scale.
5. The Vault Custodian will record each shipment by batch numbers on a Raw Material Inventory ledger sheet using a different ledger for each contract and a different ledger sheet for each batch.
6. The Vault Custodian will send the Accountability Representative a written report showing the amount received in each container by batch number.
7. Upon receipt of Form AEC-101, the Accountability Representative will issue a written notification to the Process Engineering Section Head of the isotopic analyses net weight and SS net furnished by the producer and by the shipper of each batch of SS material.

8. The Process Engineering Section Head will issue a written acceptance to the Accountability Representative of one or both of the isotopic analyses and SS nets; or he will have an SS net and isotopic analysis made, and issue a written notification of the result to the Accountability Representative.
9. The Accountability Representative will complete Form AEC-101, based on the above information, and make distribution of the various copies.

E. TRANSFERS FROM RAW MATERIAL INVENTORY TO IN-PROCESS INVENTORY

1. The Head of Production will requisition SS material from Raw Material inventory with a Melting Practice Card on which alloy computations will be made and checked by two Production Section technical employees, and on which the Vault Custodian will enter the melt number.
2. The Vault Custodian will weigh, and a Production Section technical employee will check the weighing, the requisitioned SS material to plus or minus one-tenth gram on a one-half kg. capacity Shadowgraph Exacto Gram Scale and will arrive at a total weight as close as possible to the requisitioned weight. The Vault Custodian will debit the Raw Material Inventory by batch number and credit the In-Process Inventory by melt number showing the batch number from which each melt was taken. He will place the SS material in a tote pan specially marked for each contract and will insert a Travel Accountability Card showing melt number only in the tote pan.
3. The Vault Custodian will note the SS material weight on the Melting Practice Card and return it to the Head of Production. The Head of Production will have the alloying material weight recalculated to arrive at the correct relationship with the amount of SS material weighed by the Vault Custodian. The Head of Production will then return the Melting Practice Card to the Vault Custodian to requisition the alloying material.

4. The Vault Custodian will weigh, and a Production Section technical employee will check the weighing, the alloying material to the requisitioned weight on the same equipment and within the same limits as the SS material.
5. The Vault Custodian will place the alloying material by melt number in the tote pan containing SS material of the same melt number. He will credit the In-Process Inventory with the weight of the alloying material by melt number. He will total the weight of the alloying material and the SS material to determine the total melt weight.
6. The Vault Custodian will enter the melt number and weight in the Vault Log as a disbursement and Material Handler will sign the Log before he is given the material to move to the melting operation.
7. The Material Handler will return the tote pan for each melt number to the vault after each melt. The tote pan will contain all the ingots from the melt, each stamped with the melt number and a separate letter designation, e.g., 1A, 1B, etc., and all of the scrap which may consist of any or all of the following types:
  - a. Dross - Material skimmed from the molten material in the crucible.
  - b. Heel - Excess molten material poured out of the crucible.
  - c. Residue - Material left in the crucible which is stripped out.
  - d. Spillage - Material spilled while pouring from the crucible to the mold.
  - e. Graphite - Scrapings from the crucible and the thermocouple.

8. The Vault Custodian will weigh the ingots and each classification of scrap to plus or minus one gram. He will total the weights and calculate the melt loss, if any, by subtracting from the original weight shown on the Melting Practice Card. He will enter the weights and computations on the Melting Practice Card.
9. The Vault Custodian will credit the Vault Log opposite the disbursement entry by melt number and the Material Handler will sign the log.

F. TRANSFERS WITHIN THE IN-PROCESS INVENTORY

1. The Material Handler will requisition ingots from one melt only.
2. The Vault Custodian will weigh each ingot in the melt to plus or minus one gram. He will fill out a Travel Accountability Card showing the melt number of the ingots and the weight of each. He will place the ingots and the travel card in a tote pan different from the one originally used for that particular melt number, the original remaining in the vault as a scrap container for that particular melt. He will debit the Vault Log with the weight of the ingots by melt number and the Material Handler will sign the Log before he is given the material to move to the next operation.
3. The Material Handler will return the tote pan to the vault at the close of each working day for an accountability check. The tote pan will contain all good pieces, each identified with the ingot number (stamped or mechanically etched) from which it came, and all scrap which is collected from a plastic sheeting placed around each machine during each operation.
4. The Vault Custodian will weigh the total amount in the tote pan to plus or minus one gram. He will credit the Vault Log opposite the previous debit by melt number. The Material Handler will sign the Log. The Vault Custodian will place all the scrap by melt number in the original tote pan.

5. The identifying designation stamped on each ingot will remain legible after each operation except hot rolling and blanking. The identifying number will be restamped on the pieces after hot rolling to maintain the identity of the ingot from which each piece came. After blanking, each piece will then be called a filler and will be placed in a separate compartment, which will be identified by number, in a wooden box. The wooden box will be identified by the number of the ingot from which the fillers came.
  
6. Samples for chemical analysis will always be taken after the hot rolling operation. The Material Handler will deliver a sample taken for chemical analysis to the Vault Custodian together with a Supply Requisition showing the melt number and ingot number. The Vault Custodian will weigh the sample to plus or minus one gram, will enter the weight on the Supply Requisition, will debit the In-Process Inventory by melt number and will credit the Analytical Sample Inventory by melt number and return the sample to the Material Handler. The Vault Custodian will weigh samples returned after analysis to plus or minus one gram, will calculate any weight loss by subtracting from the original weight shown on the Supply Requisition and will enter the computations on the Supply Requisition. The Vault Custodian will debit the Analytical Sample Inventory with the weight of the returned sample by melt number, will credit the In-Process Inventory by melt number, will credit the Vault Log opposite the previous debit by melt number and will place the returned sample in the tote pan containing scrap from that particular melt. The remainder of the sample will remain in the chemical analysis solution and remain as a credit to the Analytical Sample Inventory.
  
7. After the blanking operation the Vault Custodian will record all debits and credits to the Vault Log by the number of fillers in each melt instead of by weight.

8. After the blanking operation the Material Handler will move all fillers to the analytical balance for weighing before moving the fillers to the next operation. A Production Section technical employee will weigh each filler to plus or minus one one-thousandth of a gram, will enter its weight by filler number, according to its position in the special wooden container, in his Clevite Research Record notebook, and will give a copy of this report to the Vault Custodian. The Vault Custodian will enter this information on a Filler Identification Sheet by melt number.
9. The Analytical Laboratory will issue a written chemical analysis report to the Production Engineering Section Head and the Head of Production showing the total percentage of SS material by melt number which will be representative of the SS material content in the fillers to be made from that melt. The Production Engineering Section Head calculates from that the total SS material in the melt by weight, and the total amount by weight of the pertinent SS material isotope from the isotopic analysis of the SS material in the batch from which the melt material was taken. He calculates the SS material weight and the pertinent SS material isotopic weight in each filler based upon the relationship of the weight of the filler to the total weight of the melt. He enters this information on the Filler Identification Sheet.
10. As the fillers are inserted into subassemblies in succeeding operations, the identification of each will be mechanically etched on the subassembly to maintain identity until each subassembly is finished to size. After the finish operation each subassembly will be inserted into a paper tube on which the identification of the fillers used in the subassembly will be written. During all these operations all fillers, subassemblies and scrap will be kept in one tote pan by melt number.
11. During final assembly a production technical employee will record in his record notebook the number assigned to each subassembly during final assembly, and the identification of the fillers used in each subassembly. He will also assign a number to each final assembly showing the subassemblies in each and record this in his record notebook. He will send a Final Assembly Report to the Vault Custodian.

G. TRANSFERS FROM THE IN-PROCESS INVENTORY TO THE ASSEMBLY INVENTORY

1. The Vault Custodian will enter on the Final Assembly Report the weights of the fillers in each subassembly from the Filler Identification Sheet and total the weight from each melt in each final assembly.
2. The Vault Custodian will debit the In-Process Inventory by melt number. He will credit the Assembly Inventory by final assembly number.

H. SHIPMENTS

1. A final assembly will be requisitioned for shipment by the Head of Production on a Shipping Request, CB-19-A, showing the final assembly number and project number. The Vault Custodian will debit the Assembly Inventory and the Material Handler will sign the Shipping Request. The Vault Custodian will notify the Accountability Representative by a written report of final assemblies being shipped showing final assembly number, melt number, batch number, filler weight, SS material weight, and pertinent SS material isotopic weight.
2. The Contract Administrator will receive a copy of the Shipping Request and will prepare an Authority for Shipment, a copy of which will be sent to the Accountability Representative to indicate the shipping date.
3. From the Vault Custodian's report and the Authority for Shipment the Accountability Representative will prepare and distribute the necessary accountability form, AEC-101.

I. REELTS

1. The Vault Custodian will list all rejected fillers whether they are separate or part of a subassembly by identification and weight, getting the weights from the Filler Identification Sheet.



2. The Vault Custodian will group the fillers into lots of ten. He will total the weight of the fillers. He will weigh the lot to plus or minus one gram to get the total weight which will include all subassembly weights other than filler weights. He will mechanically etch each filler or subassembly with its previously assigned identification and segregate by lot number.
3. The Vault Custodian will give a Remelt Lot Report to the Head of Production so that a new melt can be calculated.
4. The Head of Production will give the Vault Custodian a Melting Practice Card as a requisition for a new melt showing the composition of the melt by remelt lot number, virgin SS material, and virgin alloying material.
5. The Vault Custodian will debit the original melt number In-Process Inventory from the Remelt Lot Report and will credit the newly assigned melt number In-Process Inventory. He will then follow the previously described procedure for including the virgin SS material and virgin alloying material in the new melt.

Prepared by

*E. A. Gentry*  
E. A. Gentry  
Personnel Manager

Approved by

*E. J. Gilmore*  
E. J. Gilmore, Manager  
Central Services

Approved by

*A. D. Schwope*  
A. D. Schwope, Manager  
Materials Division

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*R. L. Shearer*  
R. L. Shearer  
Contract and Project Administrator