

	Currency Ink Production: Design Procedure		Revision: #1
	Document Control Number: 93.00-3.4		Date: 8/18/03
QUALITY PROC.	Responsible Organization: Office of Technical Support		
	Approved By: Dr. Goutam Gupta	Signature: <SIGNED>	

- 1.0 Purpose:** The purpose of this procedure is to document the Bureau of Engraving and Printing’s policy on designing new currency inks whether those inks are modifications of existing designs, or new inks resulting from requirements of new currency designs.
- 2.0 Scope:** This procedure applies to the design of all new currency inks at both the Washington, DC and Western Currency Facilities.
- 3.0 Responsibilities**

 - 3.1** It is the responsibility of the Associate Director, Technology, to communicate promptly all ink-related currency requirements to the Washington, DC and Western Currency Facilities (WCF).
 - 3.2** It is the responsibility of the Plant Manager, Western Currency Facility or the designated representative to communicate all ink-related currency requirements to ink mill personnel, and to ensure that the formulations for all existing and newly developed inks are adequate to enable the printing of currency to meet the requirements as described in Section 3.1 of this procedure.
 - 3.3** It is the responsibility of the Chief, Office of Technical Support (OTS) or designated representative to communicate all ink related currency requirements to ink mill personnel, and to ensure that the formulations for all existing and newly developed inks are adequate to enable the printing of currency to meet the requirements as described in Section 3.1 of this procedure.
 - 3.4** It is the responsibility of the Process Change Control Board (PCCB) to authorize, track, and approve the print orders needed for testing or evaluating the inks/materials/products.
 - 3.5** It is the responsibility of the Office of Technical Support to ensure that newly designed or modified currency inks, including changes, if any, in materials or products are tested first in successful trial production runs before general production of the new inks. Such trials are necessary as well whenever there has been a change in the specification of one or more ingredients or suppliers of materials or products.
 - 3.6** It is the responsibility of the Project Manager (DC) or his/her designated representative in WCF to ensure that the sheets printed using test inks or materials are evaluated first at their respective laboratories, and further,

that use of such test inks or materials is restricted to trials until the evaluation results indicate that the test inks meet the acceptable requirements.

- 3.7** It is the responsibility of the Managers of Currency Production at both facilities to document and communicate to the Office of Technical Support all problems associated with the existing inks/materials that may require reformulation.

4.0 Design Inputs

- 4.1** The Office of Technical Support and/or Managers of both ink mills will notify, in writing, the Office of Securities Technology, Operations, PCCB, and other components that maybe impacted by the proposed changes in materials or overt and/or covert design of the banknote. The proposed changes may involve the introduction of new ink materials, finished products, or modification of existing ink formulations for the purpose of improving performance, productivity, enhancement of overt and/or covert features, cost reduction, etc.
- 4.2** The Office of Technical Support and/or Managers of both ink mills or their appointed representatives will coordinate the activities required to ensure complete assessment of the proposed changes in materials/finished products or overt and/or covert design of the banknote.
- 4.3** An assessment report will be prepared by the Office of Technical Support and/or Western Currency Facility Plant Manager or their appointed representatives and submitted to the Office of Securities Technology, Operations, PCCB, etc. for their review and consideration so that the proposed changes could be implemented accordingly.
- 4.4** The Office of Technical Support or appointed representatives will have the initial formulations designed and documented.
- 4.5** The Project Managers or designated representatives in WCF will submit the Material Safety Data Sheets and any other pertinent information on the physical and chemical properties of the initial ink formulation or proposed inks/materials to the Office of Environment, Safety, and Occupational Health Programs for review to ensure full compliance with applicable OSHA and EPA regulatory requirements prior to conducting the press trials.
- 4.6** The appointed representative(s) or ink chemist(s) will prepare a laboratory batch(s) of the initial formulation, and the physical and chemical properties of the proposed inks/materials or formulations will be compared to the documented or specified requirements.
- 4.7** If the requirements or test results of the laboratory batch(s) of the initial formulation is satisfactory, then scale –up batches ink batches will be manufactured by the ink mill for follow –up evaluation or press trial to ensure consistency of performance or quality.

5.0 Design Review and Verification

- 5.1** BEP technical personnel will review the laboratory test and press trial results.
- 5.2** The Office of Environment, Safety and Occupational Health Programs will prepare Material Safety Data Sheets for the new ink formulations, whenever there is a change in the specification of one or more ingredients, or manufacturers of the ingredients.
- 5.3** The Office of Technical Support Ink or appointed representatives will establish parameters and acceptance criteria based on the physical properties of existing inks used in similar applications.
- 5.4** If a press trial has not been conducted (Section 4.5), a trial will be performed, and the results will be reviewed by OTS or Quality **Assurance** personnel (WCF) prior to general production.
- 5.5** Final recommendation of new formulations shall be coordinated by the Chief, OTS (Washington, DC) and Plant Manager or designee (WCF), through the Associate Director, Technology and Associate Director, Operations, prior to implementation.

6.0 Design Validation

- 6.1** Production batches of ink are prepared according to established procedures and provided to Operations.
- 6.2** Ink chemists and ink mill personnel will monitor the performance of new or modified inks during initial production runs.
- 6.3** Samples from initial currency production, which utilized new ink, will be provided to Quality personnel at the Western Currency Facility, or OTS personnel in Washington, DC for verification of performance.
- 6.4** OTS and Quality Assurance (WCF) will provide the documented approval of the ink to Operations, STI, and PCCB.

REVISION	PURPOSE OF REVISION	EFFECTIVE DATE
1	To clearly define the process of planning, designing and controlling new currency ink design or modifications	8/18/03