Draft Compliance Program Guidance Manual: Inspection of Medical Devices

Level 1 Draft Document

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Center for Devices and Radiological Health
Office of Compliance
Division of Program Operations

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As a level 1 draft document, comments and suggestions regarding this draft document should be submitted within 90 days of the above release date to Docket No. 98D-0449 to:

Dockets Management Branch
Division of Management Systems and Policy,
Office of Human Resources and Management Services
Food and Drug Administration
12420 Parklawn Drive (HFA-305), Room 1-23
Rockville, MD 20857

Additional Copies: World Wide Web/CDRH home page :http://www.fda.gov/cdrh/ochome.html.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Food and Drug Administration
Center for Devices and Radiological Health
Rockville, MD 20850

Attachment A CDRH Draft Guidance Document Standard Operating Procedures (SOP's) Conformance to FDA Good Guidance Practices (GGP's) Checklist for LEVEL 1

Compliance Program Guidance Manual: Inspection of Medical Devices__

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Originating Org.:Office of Compliance, Div. Prog. Oper./ Field Programs Br.

REVIEW & COMMENT:

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Included:

_X____ CDRH DRAFT Guidance Cover Sheet

_X____ FR Notice of Availability (**LEVEL 1 ONLY**)

_X____ Disk with file formatted in WORD7, Adobe Acrobat (.pdf) or HTML/OC web

Concur with release	signature	date
Branch Chief	M. Hoban	2/19/98
Division Director	W. Morgenstern	2/19/98
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RETURN TO: Office GGP Representative C. Uldriks **HFZ-**300

Office GGP Representative (*DATE)*: 5/14/98

FR Notice OHIP Regs Staff	5/15/98
Office Web Focal Point notified	5/21/98
DSMA notified via email (DSMO:)	5/21/98
DDUPSA notified via email (DUPSA:)	5/21/98

RETURN TO: Division GGP Representative: WWM HFZ-306

Division GGP Representative*(Date)5/14/98:*

Lists updated	_____
Internet verified	_____
DSMA verified	_____

***Originating Offices are encouraged to discuss any guidance that potentially present new legal interpretations or significant changes in Agency policy with Office of Chief Counsel and/or Office of Policy before release for public comment.**

SUBJECT:	IMPLEMENTATION DATE
INSPECTION OF MEDICAL DEVICE MANUFACTURERS	Upon Receipt of Final Document
	COMPLETION DATE September 30, 2000

DATA REPORTING

PRODUCT CODES	PRODUCT/ASSIGNMENT CODES
73-91	82830L 42830L -- All Routine Inspections Except for Time Used for Assessing Design Controls and MDR 82830C 42830C -- All F/U Inspections 82830D -- Report, Separately, Time Used for Assessing Design Controls and Completing the Design Control Inspectional Strategy Report. 82R806 --Foreign Medical Device GMP Inspections 82R915 --Foreign Medical Device GMP Inspections Design Controls

Field Reporting Requirements

Send to CDRH, HFZ-306, the EIR for **each** inspection conducted under this program, regardless of the district decision. The Design Control Inspection Strategy Report should be attached to the EIR whenever design controls were assessed.

A copy of all Warning Letters should be sent to HFZ-306 and HFC-210.

If the district wishes to obtain comment from CDRH for other EIRs you should attach a cover memo outlining the issues to be considered by OC. This policy does not relieve the district from COMSTAT reporting requirements.

All EIRs and administrative/regulatory action recommendations should be sent to HFZ-306.

This guidance document represents the agency's current thinking on the enforcement of the Quality System regulation. It does not create or confer any rights for or on any person and does not operate to bind FDA or the public. An alternative approach may be used if such approach satisfies the requirements of the applicable statute, regulations, or both.

PART I

BACKGROUND

- **This compliance program provides guidance to the FDA field and Center staffs for the phased-in implementation of the new design control requirements of the Quality System regulation (FR/Vol 61, No. 195/Monday, October 7, 1996). It also provides guidance for continuing enforcement of those requirements that have either been carried over unchanged, or modified in some way from the 1978 GMP regulation (21 CFR Part 820). The revised GMP regulation is effective June 1, 1997.**

A. THE GMP REGULATION

The new Quality System regulation encompasses, for the first time, design control requirements for all Class III and II and certain Class I devices. Although many device manufacturers have, for years, used design controls similar to those required by the Quality System regulation, these requirements will require major changes in the processes some establishments use to develop and design devices. Because both the manufacturers and the field staff will require formal training and experience with the application of the design control requirements, FDA committed to a phase-in period of one year following June 1, 1997, the effective date of the regulation. During this period, investigators will not include on the FDA Form 483, observations concerning design controls, nor will FDA initiate a regulatory action for failure to comply with the design control requirements. Investigators will, however, note their observations in the Design Control Inspectional Strategy Report and leave a copy of the report with the establishment. The strategy, outlined in the program, continues to place emphasis on manufacturers' responsibility to monitor their compliance with GMP requirements, and to make appropriate and timely corrections of problems in their manufacturing and quality assurance systems.

PART II

IMPLEMENTATION

FDA staff should not deviate from the guidance in this Part without appropriate justification and supervisory concurrence.

A. OBJECTIVES

QUALITY SYSTEM REGULATION

1. MANUFACTURING QUALITY SYSTEMS

To identify domestic and foreign manufacturers who are not operating in a state-of-control. To bring such manufacturers into a state-of-control through voluntary, administrative or judicial means, as appropriate.

2. DESIGN CONTROL REQUIREMENTS

During the one-year phase-in period,

a. develop an understanding of how the device industry implements design controls,

b. work with manufacturers that are experiencing problems implementing the design control requirements, and,

c. provide feedback, via the Design Control Inspectional Strategy Report, as required.

After June 1, 1998, bring such manufacturers into a state-of-control through voluntary, administrative or judicial means, as appropriate.

B. PROGRAM MANAGEMENT INSTRUCTIONS

1. The following guidelines are suggested for implementing this compliance program:

a. This compliance program is to be used to conduct Compliance Status Information System (COMSTAT) inspections of devices when directed by HFC-240. This is in accordance with the current COMSTAT Manual and to obtain data for COMSTAT profiles and/or updates during regularly scheduled GMP inspections.

b. As agreed to by the Office of Management and Budget (OMB) and FDA, the Agency will provide a transition period between June 1, 1997 and May 31, 1998 for implementation of the design control requirements of the Quality System regulation (21 CFR 820.30). Additional time should be planned for each inspection to allow

investigators sufficient time to gain experience with different approaches manufacturers may use to implement the design control requirements. Investigators are being instructed to use the Design Control Inspectional Strategy for guidance, and for reporting their findings for each establishment that undergoes a GMP inspection. GMP inspections should include a completed Design Control Inspectional Strategy Report attached to the EIR. A copy of the Design Control Inspectional Strategy Report should be given to the establishment's management at the conclusion of the inspection. Finally, investigators should not include observations related to design controls or changes in device or software design on the FDA Form 483 until June 1, 1998. If an establishment has not developed a new device or changed an existing device since June 1, 1997, the procedures required for design controls should be reviewed, especially procedures for design changes and procedures for design history files.

21 CFR 820.180 requires that establishments must make all records required by the Quality System regulation available during an inspection. When the district provides advance notice of the inspection, the district should remind the establishment's management that it is responsible for making design control documentation available to the investigator. At times, districts may wish to inspect product development/design departments, located at other sites within the district, to follow-up on issues with employees or managers.

Some large firms have several manufacturing facilities located in more than one district. The firms often have a product development/design facility located at a site where no other manufacturing occurs. During the fourth quarter of fiscal year 1997, CDRH issued assignments for design control inspections of such facilities. Districts that received the assignments should conduct the inspections as soon as practicable. Upon completing the inspections, they should send copies of the inspection report to the home districts of the firms' other manufacturing facilities. Unless additional information must be obtained from the manufacturing facilities, the home district will not need to conduct design control assessments.

Many large companies have design facilities located in sites that were previously not required to register. Such establishments should be advised of their registration obligation. This does not preclude the district from assigning a Central File Number to the establishment. All documentation required by the design control requirements may not be maintained at one location. When the inspection is set up, the investigator should request that the firm provide copies of all documentation for review.

The instructions for the Design Control Inspectional Strategy advises investigators that "the normal collection of documentation to establish a nonconformance will not be required." If the investigator inadvertently collects design control records related specifically to the development of a product or products (**as opposed to generic design control procedures**), the investigator should return the original and all copies of the records to the manufacturer via certified mail. This will prevent accidental FOI

release of trade secret information pertaining to the establishment's new product development.

c. If the device is labeled as sterile, also use Compliance Program Circular 7382.830A to inspect the sterilization process.

d. If the establishment is a contract sterilizer, (see 7382.830A for the definition of a contract sterilizer), it is subject to applicable requirements of the Quality System regulation and should be covered using this compliance program as well as 7382.830A.

Note: Contract sterilizers were inadvertently exempted from the requirement for registration (see 21 CFR 807.20). CDRH continues to advise such establishments that a proposal for revocation of the exemption will be published, and that they continue to be subject to the requirements of the Quality System regulation.

e. Some manufacturers produce their own devices labeled as sterile and act as a contract sterilizer for other manufacturers. Such manufacturers should be covered under 7382.830A as well as this compliance program.

NOTE: A device which is subjected to a process designed to reduce its microbial load, but that is NOT labeled as sterile, is to be covered under this compliance program, not under 7382.830A.

f. Medical Devices related to AIDS diagnosis, blood banking and/or human blood processing will be inspected under this compliance program. For guidance, see the Intercenter Agreement between the Center for Biologics Evaluation and Research and the Center for Devices and Radiological Health, dated October 31, 1991.

2. Intensified Review of the Complaint File

Part III of this compliance program, as well as the GUIDE TO INSPECTION OF MEDICAL DEVICE MANUFACTURERS, contain special guidance for reviewing manufacturers' product experience reports to determine compliance with the GMP and MDR requirements for handling complaints.

The new Quality System regulation permits establishments to maintain complaint files at a site different from the manufacturing location, provided that copies of complaints pertaining to devices manufactured at a particular facility can be transmitted to that facility for review during an inspection. In the event that establishments do not comply with this requirement in a timely manner, district management should notify the Office of Compliance at CDRH immediately (see Part VI for contacts).

When a location other than the manufacturing facility or importer is responsible for investigating complaints and submitting MDR reports, the home district should forward a copy of the EIR to the district office where the complaints are handled, with a possible request for

additional follow-up. The district office should send an "FYI" copy of its complaint file review to the home district. (Both districts should also follow the reporting requirements shown on the cover page of this program).

3. Scheduling Biennial Inspections of Medical Device Manufacturers

a. Priorities for GMP Inspections

In order to assure the best use of resources, and to assure that manufacturers of devices that present a greater risk to the public are inspected before those that pose a lesser risk, the following manufacturers should, for scheduling purposes, be given top priority:

(1) Manufacturers whose last GMP inspection was violative and there is no evidence of correction.

(2) Centralized design facilities as assigned, or otherwise identified.

(3) Manufacturers who received a 510(k) clearance decision for a critical/significant risk device within the past year, and have not been inspected within the last two years for processes similar to those used to manufacture the 510(k) device.

(4) Manufacturers of all other Class II or III devices that have never received a GMP inspection.

(5) Manufacturers of all other devices listed in Attachment B. Within this group assign the highest inspectional priority to those establishments which have gone the longest without a GMP inspection.

Note: Inspections of manufacturers of devices with a pending PMA approval will be assigned under the PMA Compliance Program (7383.001).

Inspections of manufacturers that have submitted 510(k)s for preamendment Class III devices will be assigned under Compliance Program 7383.003.

All other manufacturers should be inspected as resources permit. The primary goal of emphasizing inspection of the above device manufacturers is to change the scheduling of inspections from one that is purely based on the interval since the last inspection to one that also considers the health-hazard significance of the device. Conducting the inspection shortly after a 510(k) has received clearance will also allow an evaluation of manufacturers of significant devices at the most critical stage of production. Because most manufacturing and design problems develop or become apparent within the first year of the device's life cycle, inspecting at this time should provide a better opportunity for identifying manufacturing and design problems. GMP inspectional coverage will be

focused on that segment of the industry that is actively bringing devices to market and thus presenting the most risk to the public. Those firms that may not receive a biennial inspection should be those producing lower risk products.

b. GMP Pre-Clearance Inspection Program for Class III 510(k) Pre-amendments Devices (CP 7383.003)

When top-priority inspectional assignments that support this program cover all profile classes (except those associated exclusively with certain Class I devices), the district may count the inspection as a qualifying GMP inspection.

c. Initial Inspections

Newly registered and listed firms should receive a **directed inspection** per the Guide to Inspection of Medical Device Manufacturers as soon as possible after manufacturing operations commence. Generally, firms that manufacture Class III devices and devices listed in Attachment B should be inspected within 6 months and firms that manufacture all other Class II devices within 12 months. If the device(s) classification is not known in advance and cannot be determined otherwise, i.e., phone contact, catalog review, etc., the district should schedule the inspection and determine the appropriate inspectional approach after identifying the device(s). For guidance in determining if an establishment should be subject to the Quality System regulation, refer to page 50 of Medical Device GMP Guidance for FDA Investigators.

If it cannot be determined that at least one device is Class II, III, or Non-GMP exempt Class I, as discussed in section B.3.f. below, the district should review the firm's complaint handling practices, then terminate the inspection. The district should report the time against PAC 82R800 (District Initiated Assignment).

d. Routine Reinspections

All manufacturers of Class II or III devices should receive a **directed GMP/MDR inspection** as resources permit after the previous "qualifying inspection". See part II, B.3.a [Priorities for GMP Inspections.]

e. Statutory Coverage List (formerly the Alert List)

Any registered firm that manufactures Class II or III devices and has not had a "qualifying inspection" during the 24 months since it registered will appear on the district's Statutory Coverage List (formerly the alert list).

- The Statutory Coverage List (formerly the Alert List) will be based on the date of the last "qualifying inspection" (i.e., the last GMP/MDR inspection under PAC's 82830 C, L, or F, 83001, 83003, or 42830 C, L, or F).

f. Class I Device Manufacturers

NOTE: All Class I devices, including those exempted from most of the Quality System regulation requirements, must comply with the complaint file requirements as well as the reporting requirements of the MDR regulation. Class I manufacturers should receive lowest inspectional priority unless addressed by a special assignment or a health hazard is apparent. See Attachment A for those Class I devices that are exempt from most GMP requirements.

g. Follow-up Inspections

Part III of this program instructs investigators to discontinue the inspection when they encounter conditions that meet the criteria for Situation I in Part V.A.1. The Warning Letter to the manufacturer alerts the manufacturer of its responsibility for reviewing all manufacturing and quality assurance systems. Because other problems may have existed that the manufacturer should have identified and corrected, **the follow-up inspection should be a comprehensive inspection**.

Follow-up inspections conducted to determine if violations have been corrected may be counted as qualifying inspections and should be reported against PAC 82830C. All other follow-up inspections, including washouts, are to be reported against PAC 82R800.

4. Prenotification of Inspections

Evaluation of the pilot phase of the Medical Device Initiatives (MDI) for prenotification of inspections identified benefits for both the industry and FDA. Consequently, the program has been made permanent. Refer to Attachment A of the *Guide to Inspection of Medical Device Manufacturers* for specific guidance.

5. Resource Instructions

When possible, Electro-Optical Specialists should be used for inspection of laser devices.

Experienced investigators with specialized knowledge should conduct inspections of establishments that are manufacturing high-risk devices. Contact DEIO (HFC-133) should the need for expertise, not available in the Region, become apparent (Refer to FMD No. 142).

PART III

INSPECTIONAL

FDA staff should not deviate from the guidance in this Part without appropriate justification and supervisory concurrence.

BACKGROUND

This program includes guidance for determining compliance with the Quality System regulation.

A. OPERATIONS

1. Special Instructions Concerning Design Controls

The inspectional authority for review of design control records is derived from Section 704(e) of the Act. Such authority applies only after the establishment has manufactured the device for which the design has been under development or taken an action that precludes the argument that the product under development is not a device. Such action includes: (1) submitting to an IRB plans for clinical investigation of the device, (2) submitting to FDA a Product Development Protocol (PDP), (3) submitting to FDA an IDE, 510(k), or PMA, or (4) refer to Attachment F for decision charts outlining when FDA has inspectional authority to review design control records.

The above limitation does not apply to inspectional authority to review all generic design control procedures at any point in time.

During the first year of transition, investigators should ask the establishment's management to identify the device to be examined for design controls. If the establishment offers access to records for new designs that have not yet progressed to the design stages identified in the circumstances above, FDA can review those records. Otherwise, investigators will be looking primarily at records for changes made to the designs of marketed devices, or records for devices in the design stages identified in the circumstances above.

For preapproval inspection of Class III devices, there will be a submission that has prompted the inspection assignment under C.P. 7383.001 or C.P. 7383.003.

Review of design controls should cover any design processes after June 1, 1997. The establishment is not required to retrospectively apply design controls to all stages in the design process, if it had completed part of the design process. Certain requirements, however, such as formal design reviews, are essential to assuring that a device will meet the output requirements. Any design reviews conducted after June 1, 1997 should include a retrospective review up to the current stage of the device's development. Guidance for

covering the new design control requirements of the Quality System regulation is contained in the Design Control Inspectional Strategy and Design Control for Medical Devices Manufacturers' Guidance.

If an establishment normally designs its own devices, but has not initiated any design changes to current devices or does not have a design project in process that are reviewable by FDA given the limitation discussed above, investigators should limit their coverage to a review of the design control procedures that the establishment has established.

All documentation required by the design control requirements may not be maintained at one location. When the inspection is set up in advance, the investigator should request that the firm consolidate copies of the appropriate design control records and procedures for review. There are a number of multi-establishment firms that conduct all design activities at a single facility (sometimes referred to as a research and development center or design center). CDRH will issue assignments for inspection of such facilities. The district should check the establishment jacket. If an assignment was issued for inspection of a design center related to the establishment scheduled for inspection, it will not be necessary to conduct a design controls review.

Some establishments have their devices designed under contract. The establishment must comply with the requirements for consultants under 21 CFR 820.50 as well as ensure compliance with 21 CFR 820.30. It must maintain copies of all relevant design control records (Design History File and Design Master Record) for any device that is in production.

The observations that you place on the Design Control Inspectional Strategy Report should be limited to the adequacy of the procedures and/or controls established by the establishment. **It is not appropriate to place on the Design Control Inspectional Strategy Report observations that concern the adequacy, safety, or efficacy of a particular design.** Any such concerns should be noted in the EIR and the EIR flagged for review by the Office of Device Evaluation.

2. Inspectional Strategy

A "qualifying inspection" is a GMP inspection conducted under this program as per the inspectional strategy presented below.

This compliance program, introduced in FY'94, initiated a major change in inspectional strategy. Investigators will conduct a comprehensive inspection only when conducting a follow-up inspection following a situation I violative inspection. All other inspections will be **directed inspections** as directed in the Guide to Inspection of Medical Device Manufacturers.

The device industry and CDRH worked closely together to develop the design control requirements of the Quality System regulation so that the requirements would be harmonized with ISO 13485, the standards for device design and manufacturing required

by the European Economic Union, Australia, Canada and other countries. To allow the domestic industry sufficient time to implement the design control requirements, the Office of Management and Budget (OMB) and FDA agreed to the following policy regarding the reporting of inspectional observations related to design controls:

Beginning on June 1, 1997, when the new Quality System regulation becomes effective, investigators will cover the implementation of design controls on devices currently in the design phase. Investigators will not record design control deficiencies on the FDA Form 483, but will report the observations on the Design Control Inspectional Strategy Report. At the conclusion of the inspection, the establishment's management should receive one copy of the Design Control Inspectional Strategy Report with the observations noted, and discuss the observations. The investigator should also attach a copy of the completed Design Control Inspectional Strategy Report to the EIR.

Beginning on June 1, 1998, all observations concerning design controls will be reported on the FDA Form 483.

When conducting all routine GMP inspections, investigators should start the inspection with a review of: (1) complaints and MDR reports, (2) changes that the manufacturer has made in the design or manufacturing process, and (3) records of production lots that failed in-process or finished device testing. Any indications of problems that the review identifies will provide a focus for the inspection. If indications of problems are not apparent after reviewing the above records, the investigator should complete the inspection as directed in the Guide to Inspection of Medical Device Manufacturers and the Design Control Inspectional Strategy, and, where appropriate, issue an FDA Form 483, listing any non-design related objectionable conditions that have been observed.

WHEN THE INSPECTION IDENTIFIES SYSTEM-WIDE DEFICIENCIES THAT, IN TOTAL, MEET THE CRITERIA FOR SITUATION I IN PART V,A,1. OF THIS PROGRAM, THE INVESTIGATOR SHOULD DOCUMENT THE CONDITIONS THAT CONTRIBUTED TO THE PROBLEM(S), AND CLOSEOUT THE INSPECTION.

The FDA Form 483 should contain the following statement:

THE OBSERVATIONS NOTED IN THIS FDA FORM 483 ARE NOT AN EXHAUSTIVE LISTING OF OBJECTIONABLE CONDITIONS. UNDER THE LAW, YOUR FIRM IS RESPONSIBLE FOR CONDUCTING INTERNAL SELF-AUDITS TO IDENTIFY AND CORRECT ANY AND ALL VIOLATIONS OF THE QUALITY SYSTEM REQUIREMENTS.

3. Special Instructions for Sterilization Processes

A device subjected to a process designed to reduce its microbial load, but that is NOT labeled as sterile, is to be covered only under this program.

If the device is labeled as sterile, inspectional coverage indicated in 7382.830A, where appropriate, is to occur.

4. Special Instructions for Inspecting Small Manufacturers

Refer to Section entitled "The Small Manufacturer" in the *Guide to Inspection of Medical Device Manufacturers*.

5. Inspection of Radiation Emitting Devices

When conducting GMP inspections of radiation emitting devices, investigators should also inspect for compliance with any applicable standard promulgated under Chapter V, Subchapter C - Electronic Product Radiation Control of the FD&C Act.

Device manufacturers subject to existing FDA performance standards should include in their device master and history records those procedures and records demonstrating compliance with the applicable standard.

6. Recalls

The FD&C Act, as amended by the Safe Medical Devices Act, requires manufacturers to report to FDA any recalls/notifications that will reduce health risks or remedy violations that may pose a health risk. An implementing regulation, Medical Device Reports of Corrections and Removals (21 CFR, Part 806) was published in the Federal Register on May 19, 1997 (62 CFR 27183). Investigators should confirm that all subject recalls conducted by the establishment since the last inspection have, in fact, been reported to the district office. Investigators should also review files to determine if all events filed by the establishment as Class III recalls have been properly classified, i.e., should be Class I or II recalls.

7. Remanufacturers of Used Devices

Remanufacturers are persons who process, condition, renovate, repackage, restore or do any other act to a finished device that significantly changes the finished device's performance or safety specifications or intended use [21 CFR 820.3(w)]. Remanufacturers are considered to be manufacturers, and are subject to all applicable requirements of the Quality System regulation, MDR requirements, Device Tracking requirements, registration and listing, and premarket clearance. If an establishment disputes its regulatory status, the district should refer the EIR to HFZ-305 (Attn. Wes Morgenstern) for assistance in interpreting the definition of a remanufacturer.

8. Refurbishers/Reconditioners of Used Devices

Refurbishers, reconditioners and "as is" resellers of used devices are not subject to the requirements of the Quality System regulation. In 1997, FDA published an Advanced Notice of Proposed Rulemaking (ANPR) requesting public comments/proposals on regulation of refurbishers, reconditioners and "as is" remarketers of used devices. If the district receives an assignment to inspect such an establishment, the district should contact Wes Morgenstern (HFZ-305) at 301-594-4699 to determine the current regulatory status of such establishments.

9. Reprocessors of Single Use Devices

Third party reprocessors of single use devices are subject to those requirements of the Quality System regulation that apply to the operations they perform. Because contractual arrangements with hospitals and questions of ownership may sometimes make the responsibilities of the third party unclear, the district should contact Larry Spears (HFZ-340) at 301-594-4646 for guidance before conducting an inspection of an establishment believed to be a third party reprocessor. Hospitals that reprocess/reuse single use devices for their own use are not subject to registration and listing requirements or routine inspections.

10. Selection of Device(s) for Inspection

See Part II, B. 3. for information on GMP inspection priorities.

The selection of establishments for inspection will be based first on whether an establishment manufactures a high risk device (as identified in Attachment B). If more than one high risk device is manufactured at the establishment, selection of the device or devices to be covered should be based on evidence of defective and/or nonconforming devices identified by review of the complaint files, change control records, in process testing records, and finished device testing records. The selection also will depend on the total number of appropriate profile classes [except those associated exclusively with GMP exempt Class I devices] by examining the manufacturing of as few device lines representative of those classes as possible.

11. Implantable and Life Sustaining Devices (Formerly Critical Devices)

Under 21 CFR 820.65, the requirements for devices and component traceability applies to implantable devices and life sustaining devices. See Attachment B for a list of such devices. (Note: this list may not be comprehensive. The definition specified in 21 CFR 820.65 should be used when determining if these requirements must be met.)

12. Comparison of Requirements Between the 1978 Regulation and the New Quality System Regulation

While the GMP requirements that apply to manufacturing are similar in both regulations, some of the requirements were reworded or otherwise modified to better harmonize with

ISO 9001. See the The FDA and Worldwide Quality System Requirements Guidebook for Medical Devices, page 5 for a chart comparing the requirements in the old and new regulations.

Some requirements have been added such as: 1) evaluation of suppliers [21 CFR 820.50(a)]; 2) statistical methods for sampling extended beyond just finished device testing [21 CFR 820.250]; and, 3) handling, storage, and preservation of calibrated equipment so accuracy and fitness for use are maintained [21 CFR 820.72 (a)]. Other requirements have been eliminated, such as requirements specific to critical devices.

13. FDA Compliance Status Information Systems (COMSTAT)

a. When selecting specific devices to represent profile classes, investigators should give preference to high risk devices and devices that have had problems. Where possible, investigators should select those devices that represent multiple, mutually exclusive profile classes. A list of the device related profile classes appears in the current FDA COMSTAT Manual.

b. Inspections conducted under a COMSTAT assignment should include:

(1) coverage of the device(s) specified in the assignment, or devices representing all the same profile classes as the assigned device; and

(2) other devices as required to provide coverage of any remaining profile classes, except GMP exempt Class I devices.

14. Complaint File Review

a. FDA surveys of establishments' complaint files have shown that some establishments were deficient in their complaint handling practices. These deficiencies were caused by an establishment's failure to:

(1) follow its own procedures for processing product experience reports; or,

(2) develop procedures which meet the requirements of 21 CFR 820.198.

The Quality System regulation requires that all complaints be reviewed, evaluated and maintained by a formally designated unit. This unit could be one appropriately trained individual, or a department that is staffed with appropriately trained individuals. This unit must decide whether an investigation of the complaint needs to be performed. Under the Quality System regulation there continues to be no requirement that all complaints must be maintained in one file. Now, however, establishments are required to have written procedures for processing complaints. It will be necessary to review the complaint processing procedures and to assess

the adequacy of the procedures and their implementation by reviewing complaints received after June 1, 1997.

The review of complaints and failure investigations to determine which devices the inspection should be focused on should not be limited to only those complaints received after June 1, 1997. Typically, manufacturers will keep complaints and related investigations in a customer file, product returns/credits file, warranty file, medical file, or legal file. The inspection should ascertain which files are maintained that meet the definition of a complaint, as found in 21 CFR 820.198.

By placing complaints in different files, manufacturers may not have noted instances of repeated component/device failure with a common cause. Investigators should ask the establishment if it analyzed complaints to identify recurring quality problems. If no trending or problem identification is done, then the inspection should begin with conducting an analysis of the complaints and/or failure investigations.

Note: If GMP defined complaints are not maintained by the formally designated unit, or written procedures are not in place, or not being followed, it should be noted on the FDA Form 483.

Note: The actual complaints or deficiencies in complaint handling practices may provide leads in identifying product defects, and possibly quality system problems, which have not been adequately corrected by the establishment. Possible corrective actions may include recall, and/or change in the design of the device, and/or change in the manufacturing process or quality system.

Reference No. 4 in Part VI explains how the GMP complaint files relate to reports required under MDR.

15. Sample Collection

For GMP or MDR violations, documentary samples will be collected as necessary.

Physical samples are not required to support GMP violations, and should not be routinely collected for GMP cases. If the district should reference violative documentary or physical samples as evidence to support GMP deviations, the condition of the sample should be tied to the GMP deviation to show a cause/effect relationship.

If the investigator is uncertain as to whether a sample should be collected, the district should consult with the CDRH Headquarters Laboratory Liaison or the Division of Field Science in ORA on the laboratory capability to conduct the analysis. (See Part VI, C. for program contacts).

16. Imports

No import wharf examinations or sample collections are scheduled under this program.

17. Exports

The FDA Export Reform and Enhancement Act of 1996 amended Section 802 to allow an establishment to export an unapproved device to any country that authorizes importation of the device without first obtaining FDA authorization, provided that the device has received marketing authorization from one of 27 countries listed in Section 802(b)(1). Section 802 also requires that any such device must be manufactured in "substantial" conformance with the GMP requirements.

Firms must notify FDA when they make the first shipment of an unapproved device. CDRH has sent copies of the notification letters to the districts for inclusion in the firm's file jacket. During the inspection, the district should confirm that the establishment has subjected the device(s) to substantially the same quality system used for devices sold domestically. In the event that Situation I conditions are identified, investigators should contact HFZ-305, Attn: Wes Morgenstern.

Otherwise, devices that are manufactured in the U.S., but not marketed in the U.S., are not subject to the GMP requirements, provided that the manufacturer has documented proof that its devices are offered for sale only in foreign countries.

18. Follow-up Inspections

The Situation I violations that were identified during the previous inspection may have been part of more widespread system problems that the investigator did not have an opportunity to evaluate. After receiving the Warning Letter the manufacturer should have investigated its manufacturing and quality assurance system and initiated appropriate corrections. To assure that the manufacturer has fulfilled its responsibility, the follow-up inspection should be conducted as a comprehensive inspection as directed by the Guide to Inspection of Medical Device Manufacturers. If problems similar to those originally identified, or new problems that meet the criteria for Situation I are identified, investigators should complete the comprehensive inspection and document all observations.

If it appears that the establishment did not make an adequate assessment of the extent of its problems, the follow-up inspection should place special emphasis on the establishment's self auditing procedures, especially as they address the problem areas. In addition, it is possible to assess the adequacy of the self audits by examining the history of problem areas. If the particular problem area was addressed in the auditing procedures, but was not corrected after an audit, either: (1) the audit was inadequately conducted, or (2) the problem area was identified by the audit, but management failed to review the results, or (3) the problem area was identified by the audit, but management failed to take adequate corrective action.

19. Foreign Inspections

All foreign inspections should be conducted as comprehensive inspections per the Guide to Inspection of Foreign Medical Device Manufacturers.

B. REPORTING

1. General Reporting requirements are listed on the cover page. As a general rule, the time used for preparing the EIR should not exceed the time spent conducting the inspection.

2. GMP Observations--If you observe any violations of the GMP requirements, you should place them on the FDA Form 483, with the exception of observations concerning design controls during the period between June 1, 1997 and May 31, 1998. Observations concerning design controls under 21 CFR 820.30 should be noted on the Design Control Inspectional Strategy Report at the close out of the inspection and one copy left with the establishment and a second copy attached to the EIR.

   The most serious violations (e.g., those that could potentially result in production of defective devices, or identification of production problems) should be noted on the FDA Form 483 first. FDA Form 483 comments, however, should differentiate between problems that are indicative of a systems failure and rare isolated situations.

3. 510(k) Observations--If the establishment failed to submit a 510(k) for a device, or made significant changes that require a new 510(k), investigators should not place the observations on the FDA Form 483 unless you obtain concurrence from CDRH/OC.

ADDENDUM TO PART III

INSPECTIONAL GUIDANCE FOR THE YEAR 2000 PROBLEM:

On June 25, 1997, a letter issued to all medical device manufacturers from the Director, Center for Devices and Radiological Health (CDRH), addressing their responsibility to ensure the continued safety and effectiveness of their devices. Specifically, Dr. Burlington referenced problems that may be encountered by manufacturers beginning January 1, 2000, or earlier, with their computer systems and software applications currently used in medical devices, including embedded microprocessors due to use of two digit representation of the year in date records. He also reminded manufacturers about the potential for adverse impact where the two-digit date format could affect computer-controlled design, production or quality control processes.

Congress has directed the agency to give oversight to the industry in its approach to the Year 2000 problem. One way will be during the inspectional process, not through additional inspections, but by asking a brief set of questions during a GMP inspection and documenting the firm's response in the EIR. Although FDA experts are knowledgeable of the function and design of various devices, FDA recognizes that only the manufacturer has detailed knowledge of the device design that is required to effectively evaluate the potential for risk to patients.

It should be noted that little if any risk may be posed by devices whose only use of the date, in which a two-digit format is used, is to mark a record or record a date and whose operation results only in an incorrect representation of the year. Records generated by a computerized device marked with a year of "00" should not be confused with similar records from 1900 if the records are only intended for reading by humans - there were no computers in 1900. The risk element may change if the date record is intended for processing by another computerized device which might not correctly process a two digit year representation.

Since the Year 2000 issue will not be applicable to all manufacturers, the first question will be a "qualifier". It is recommended that a copy of Dr. Burlington's letter be given to the firm at the onset of the inspection to provide a basis for the discussion with the firm. Sample situational questions follow:

1. Has the firm undertaken and completed an assessment of the risk posed by its products due to the Year 2000 date problem?

   If the firm has no products that could be impacted because none involve dates or computerization, no further inquiry is required.

2. Confirm whether or not any of the products currently or previously manufactured by the firm have potential for a Year 2000 problem.

   If the response is "NO" then the discussion may close and the investigator will document the response in the EIR.

   If the response is "Yes", then more questions will be asked.

3. Ask the firm to identify the product(s) or types of products with the problem(s) or potential problem(s).

   Note: In those situations where the list is lengthy, we recommend examples of products and/or the type of product be documented.

4. Ask the firm to describe the nature of the problem(s).

5. Is the problem(s) significant, i.e., is the date critical to the operation of the device or used in a calculation or transferred to another device that may not accept a two-digit format and cause the device to fail to perform a function?

6. What is the firm doing to address the problem(s)?

   Note: If the firm has not started, determine when they plan to start and what are the plans.

7. When does the firm expect to have the problem(s) corrected?

   In those cases where the firm has identified or has the potential for a Year 2000 problem(s), it should be adequately documented in the EIR and noted on the Cover Sheet. Each of these EIRs will be forwarded to the CDRH Field Programs Branch, HFR-306, as done under current procedures. Questions pertaining to Year 2000 problems should be referred to Stew Crumpler, CDRH, Office of Compliance, Division of Enforcement III, HFZ-340, 301-594-4659.

   Additional background information regarding the Year 2000 problem and FDA activities related to it may be found on the CDRH World Wide Web page under the topic listing of Year 2000 at:

   "http://www.fda.gov/cdrh/topindx.html"

PART IV

ANALYTICAL

A. ANALYZING LABORATORIES

The district will make all the necessary arrangements for proper handling of samples with the following designated testing facilities:

TYPES OF DEVICES	ANALYZING LABORATORIES
All General Medical Devices	W E A C
Radioimmunoassay	W E A C
All Other In Vitro Diagnostic Devices	Micro—WEAC Chem—WEAC
Sterility Analysis	Refer to CP 7382.830A

See PART VI regarding those persons designated as contacts for designated laboratories and specific products.

B. ANALYSES TO BE CONDUCTED

Sample collection and analysis will be determined on a case-by-case basis through consideration of inspectional findings, compliance and scientific capabilities and expertise. Full collaboration between investigations and analytical personnel is essential at this phase. See Part III A. 17. for additional information.

PART V

REGULATORY/ADMINISTRATIVE FOLLOW-UP

FDA staff should not deviate from the guidance in this Part without appropriate justification and supervisory concurrence.

A. GMP REGULATORY/ADMINISTRATIVE FOLLOW-UP

1. Situation I

The district has evidence indicating that the manufacturing process and/or (after June 1, 1998) the design control process is contributing or causing the production of nonconforming and/or defective finished devices. Such evidence would include information from sample analyses, complaint files, the establishment's failure analyses, MDR/PRP reports, or quality system observations made during the inspection.

OR

The inspection documents quality system deviations of a significant type or quantity to conclude that there is a reasonable probability -- in light of the relationship between quality system deviations observed, and the particular product and manufacturing process involved -- that the establishment will likely produce nonconforming and/or defective finished devices. Such deviations include one or more of the following:

- failure to establish and document a formal quality assurance program;
- failure to document, review, approve, implement and validate changes to components, finished devices, labeling, packaging or manufacturing process specifications [see 21 CFR 820.70 (b)]. For changes related to software, see below;
- failure to validate processes where the results of the processes cannot be fully verified by subsequent inspection and test [see 21 CFR 820.75 (a)];
- failure to establish, maintain, and implement procedures for implementing corrective and preventative action;
- failure to establish and implement an adequate complaint handling program;
- failure to ensure that finished devices meet all specifications prior to distribution;
- failure to establish and implement adequate recordkeeping procedures (e.g., device history record, device master record, quality system records); and,

- when the follow-up to a violative inspection demonstrates that the establishment either failed to establish an adequate internal audit system, or failed to follow the established system with the result that additional deviations were identified by the investigator but not identified and corrected by the establishment.

Because software design validation and software change are closely related, districts should not initiate regulatory/administrative follow-up when an establishment's software change controls are deficient until June 1, 1998.

For guidance on language describing violations that occurred before/after June 1, 1997, see Attachment G.

After June 1, 1998, Situation I deviations related to the design control requirements of the Quality System regulation will include one or more of the following:

- failure to establish written design control procedures and a design history file;

- substantial failure to adhere to the established design control procedures, when the design process for a new device was initiated after June 1, 1997;

- failure to establish and maintain plans that describe or reference the design and development activities and define responsibility for implementation for each design or design change after June 1, 1997;

- failure to establish and document design inputs and outputs, and any changes to the original inputs and expected outputs made during the design process, for each design change after June 1, 1997;

- failure to conduct documented design reviews at the stages specified by the design plan, for each device or device change after June 1, 1997;

- failure to validate the design of a device or device change, using the initial production units, lots, or batches, or their equivalent manufactured by the established manufacturing process, when the design process for the device, or device change was after June 1, 1997.

- failure to document, review, approve, implement and validate changes to either device operating software or process control software.

If any of these deviations exist, and the significance of the deviation and the device warrants it, the district should consider administrative and/or judicial action, e.g., warning letter, injunction, detention, seizure, civil penalty, and/or prosecution. The district is expected to classify the EIR as OAI.

See the Guide to Inspection of Medical Device Manufacturers for additional guidance on Situation I conditions, especially as they may, or may not, relate to small manufacturing situations.

If any of these deviations exist for foreign manufacturers, and the device warrants it, a Warning Letter and/or Warning Letter with Automatic Detention will be considered by CDRH/OC.

If a serious health hazard is identified, an FDA mandated recall or injunction should be considered as the initial action to bring the situation under prompt control.

2. Situation II

The inspection documents GMP deviations of a quantity and/or type to conclude that there is minimal probability -- in light of the relationship between quality system deviations observed and the particular product and manufacturing processes involved -- that the establishment will produce nonconforming and/or defective finished devices. The FDA Form 483, Inspectional Observations, will serve to inform the establishment of any objectionable findings.

The presence of quality systems deviations which have a low probability of leading to an unsafe or ineffective device will not usually warrant recommendation of an administrative and/or regulatory action.

3. Violative Devices Sold to Government Agencies

Agency policy requires that products sold to the federal government shall be treated in the same manner as products sold to commercial accounts. Consequently, when FDA recommends against acceptance of a device by a government agency because that device, or its manufacturer, is in violation of the FD&C Act, FDA shall also include appropriate regulatory/administrative action against the same or similar device sold to commercial accounts.

If an establishment has shipped a violative product to a Government agency, regulatory action consistent with the nature of the violation(s) may be taken even though there have been no shipments to commercial customers. Formal regulatory action in connection with a violative shipment may not be necessary in some cases. For example, the establishment promptly corrects the violative condition, and existing Agency policy would not require further action if the matter involved a product shipped to a non-government customer. However, where corrections are not or cannot be made promptly, the main concern is preventing the subsequent shipment of the product to another customer. When the product has been shipped solely to a Government agency and is under control of that agency and there is no threat to the public, the ORA/Medical Products Quality Assurance (MPQA) staff shall ascertain the intention of the agency holding the goods (e.g., will they return or destroy the goods; will they request FDA to initiate seizure, etc.). If the

procuring agency requests FDA action, the ORA/MPQA staff will refer the matter to the home district for their consideration of an appropriate recommendation.

4. Administrative and Judicial Actions

Actions which may be considered are FDA requested recall, FDA mandated recall, Warning Letter, seizure, injunction, prosecution, civil penalties and detention.

Corrective action proposals should be submitted by a responsible official of the establishment in writing, detailing the action(s) to be taken to bring the violative process or product into compliance within a specified time frame. Voluntary correction does not preclude the initiation of administrative and/or judicial action.

In determining whether quality systems deviations are sufficient to support legal action, consideration should be given to the significance of the device, the establishment's quality history, and whether the problem is widespread or continuing.

When CDRH does not agree with a district's recommendation for a regulatory action, the district will be notified of the reasons for disapproval in writing.

a. Warning Letters

Districts should obtain CDRH concurrence before issuing Warning Letters related to refurbishing/reconditioning of used devices, or reprocessing of single use devices .

In addition, districts should obtain CDRH concurrence before issuing Warning Letters concerning design controls that are not specifically identified by A. 1. of this Part.

Issuance of all other Warning Letters should follow Chapter 4 of the Regulatory Procedures Manual (RPM) (see Attachment E for model Warning Letters).

If the district determines that issuance of the Warning Letter has resulted in corrective action by the establishment, the district should, within five (5) working days after confirmation, update the establishment's Profile Data Sheet.

b. Violative Follow-Up Inspections

With the exception of comprehensive inspections of high risk devices, investigators are instructed to close out directed inspections as soon as they have documented conditions that have met the criteria of Situation I, and have completed coverage of the establishment's design controls. The model Warning Letters (Attachment E) advises manufacturers that the conditions identified by the investigator may be symptomatic of system problems, and that the manufacturer is responsible for

investigating, identifying, and correcting system problems. The model Warning Letters further direct the establishment to discuss in its response how it will address the system problems related to the conditions identified by the investigator.

To assure that the manufacturer did, in fact, review all manufacturing and quality assurance systems, investigators are instructed to conduct a comprehensive follow-up inspection to all violative directed inspections. When investigators identify the same or additional conditions that meet the criteria for Situation I (note: deficiencies in the performance of self-auditing are considered a criteria for Situation I at the follow-up inspection stage), the district should consider seizure, injunction, or civil penalties.

c. Enforcement Strategy For Establishments With Repeated Violative Inspections -- The Recidivist Policy

(1) Some establishments have a high rate of recidivism. They have developed a pattern of correcting violative conditions in response to Warning Letters or other administrative/regulatory actions, and usually maintain those corrections long enough to pass the follow-up inspection. When FDA next inspects the establishment (sometimes, as a follow-up to a recall), the investigator identifies similar conditions that again meet the criteria for Situation I. This tendency toward recidivism is often due to the failure of the establishment to have a strong quality policy and basic manufacturing and quality assurance systems which meet the requirements of the Quality System regulation.

(2) When dealing with another violative inspection for such an establishment, the district should consider using the following strategy:

(a) Issue a Warning Letter that follows the model Warning Letter in Attachment E. This Warning Letter requests the manufacturer to submit to the district (for up to 2 years if the district believes that it is necessary) an annual certification by an outside expert consultant stating that it has conducted a complete audit of the establishment's manufacturing, quality assurance (and if applicable, design control) systems relative to the requirements of the Quality System regulation. The establishment should submit a copy of the consultant's report[1], and certification by the establishment's CEO that he or she personally has received and reviewed the consultant's report and that the establishment has made all corrections called for in the report.

[1] Establishments may be asked to release consultant's reports as part of their voluntary agreement with FDA. Because of its voluntary nature, the request is not in conflict with 21 CFR 820.180(c).

(b) Compliance Officers have the option of limiting the review of the certification only to the extent necessary to confirm that the consultant and the establishment have met the requirements set forth in the Warning Letter. Compliance Officers may also request a technical evaluation of the consultant's report by the appropriate branch within the Office of Compliance (OC). Compliance Officers have no obligations, however, to send to the establishment comments regarding the adequacy of the consultant's report or the establishment's corrections.

(c) It will not be necessary to schedule a follow-up inspection for at least 6-months after the establishment certifies that it has completed all corrections.

The district may remove the establishment from COMSTAT as soon as the establishment has certified that it has completed all corrections recommended by the consultant.

(d) If the follow-up inspection indicates that the corrections are satisfactory, the district should notify the establishment that it has no objections to the corrections, and remind the establishment that it should continue to submit to the district, on the schedule specified in the Warning Letter, certification by an outside expert consultant that it has conducted an updated audit, certification by the establishment's CEO that any corrections noted to be necessary by the consultant have been made, and that it remains in compliance with the requirements of the Quality System regulation. The establishment should continue to submit copies of the audit results.

(3) If conditions identified by the follow-up inspection meet the criteria for Situation I, the district should consider action per 4.b. above.

(4) If the evidence indicates that the consultant's or establishment's certifications are fraudulent, the district may wish to request participation by the Office of Criminal Investigations. When there is clear evidence that the establishment falsified its status report to the district, the district should initiate appropriate charges under 18 USC, 1001.

d. Recalls

If the district believes that prompt removal of a violative product from channels of commerce is necessary, it should proceed in accordance with established recall

procedures in Chapter 7 of the RPM and 21 CFR, Part 7 (Enforcement Policy), Subpart C (Recalls). In the event there exist serious adverse health consequences or a death, CDRH may order discontinuation of distribution and recall of a device to the user level in accordance with Section 518(e) of the Act.

e. Administrative Detention/Seizure

Prior to approving an administrative detention, the District Director should have reason to believe the device is misbranded or adulterated and the establishment holding the device is likely to quickly distribute or otherwise dispose of the device, or detention is necessary to prevent use of the device by the public until appropriate regulatory action may be taken by the Agency. District Directors should consult with CDRH by telephone, contacting the appropriate Division and/or Branch in OC for the subject device by consulting the CDRH/OC organization chart in Part VI, C. Concurrence should be given by the Director, OC, CDRH, based on a recommendation by the OC staff.

The district should immediately recommend a seizure.

A seizure action can be recommended without administrative detention to remove violative devices from commercial distribution, either at the manufacturer, distributor, repacker or a device user location.

f. Injunction

If an establishment has a continuing pattern of significant deviations in spite of past warnings, injunction will usually be the recommended action of choice. If a serious health hazard exists, the recommendation should include a request for a temporary restraining order (TRO) to prevent the distribution of devices which have been manufactured under the violative conditions documented by the inspection report (see RPM Chapter 6). The recommendation should be accompanied by copies of all necessary documents, e.g., complete inspection reports, Warning Letters issued, sample analyses reports, establishment's response(s) to Warning Letters and/or FDA Form 483. In the absence of samples, the inspectional evidence should clearly show that the establishment has substantially deviated from the requirements of the Quality System regulation. These deviations should be well documented and should show system deficiencies, not just an isolated event.

g. Citation

A citation should be recommended if appropriate as stated in Chapter 5 of the RPM.

h. Prosecution

The criteria stated in Chapter 6 of the RPM are the criteria for consideration of prosecution of individuals in violation of the requirements of the Quality System regulation.

i. PMA Disapproval/Withdrawal

Refer to Compliance Program 7383.001, Part V.

j. Automatic Detention

In general, detention should be recommended by the Office of Compliance whenever there is clear documented evidence to suggest that the foreign manufacturer is producing or is likely to produce nonconforming and/or defective devices or the device presents a hazard to health.

k. Civil Money Penalties

Section 303(f)(1)(B)(i) of the Act states that civil money penalties shall not apply to GMP violations "unless such violation constitutes (I) a significant or knowing departure from such requirements, or (II) a risk to public health." Section 303(f)(1)(B)(iii) further stipulates that civil penalties shall not apply to "section 501(a)(2)(A) which involve one or more devices which are not defective." Policy is still being developed for use of civil penalties in violative GMP situations. It is, therefore, important for districts to consult with CDRH/OC before committing resources to developing such recommendations.

5. Facilitating Review of Regulatory Recommendations

a. The district is expected to consult with OC both prior to, and especially during the inspection, once it is determined that regulatory action is being considered. The district should contact the appropriate Division/Branch in OC for the subject device by consulting the CDRH/OC organization chart in PART VI, C. Program Contacts.

b. When the district knows a regulatory action will be forthcoming as a result of the inspection, it should FAX a copy of the issued FDA Form 483 to the appropriate division in OC. The review process can begin within CDRH while the EIR and recommendation are being written by the district. A copy of the FDA Form 483 annotated with exhibit numbers, and EIR page numbers, helps the reviewers.

c. It is the responsibility of district management to ensure that the documentation and evidence presented with each legal action recommendation is sufficient to justify

each charge. The volume of material submitted should include only the basic documentation needed to support each GMP charge/example.

d. It is essential that all necessary samples and other supporting documentation be tabbed and their location cross referenced in the recommendation in order to assist in a timely review. It is highly recommended that you provide a table that cross references the violation with the FDA Form 483 item number, the inspection report page number and the exhibit number.

e. It is essential that all significant questions, problems, or other weaknesses in the evidence regarding the recommended action be stated, along with pertinent district comments. Otherwise, reviewers may miss a problem entirely until litigation is commenced.

f. The recommendation should begin with the most serious violation of the regulations with reference to the EIR pages, exhibits and sample results which document the violation. Each charge should be parenthetically referenced in the recommendation memorandum and the page location of the supporting evidence given. Violations should be listed in decreasing order of importance. Each violation should be related to its effect on device quality in light of overall controls, and should be separated according to the type of manufacturing activity.

g. Physical samples are not required to support GMP violations, and should not be routinely collected for GMP cases. If the district should reference violative documentary or physical samples as evidence to support GMP deviations, the condition of the sample should be tied to the GMP deviation to show a cause/effect relationship.

h. Evidence of previous warning and other regulatory actions should be referenced along with a description of corrective actions. If the recommendation or current EIR references a previous report, the district should either copy the cited EIR pages, or summarize the information.

i. All legal action recommendations shall be sent to CDRH/HFZ-306 for processing.

PART VI

REFERENCES, ATTACHMENTS AND PROGRAM CONTACTS

A. APPLICABLE REFERENCES OR AIDS

1. Code of Federal Regulations, Title 21, Part 820 Current Good Manufacturing Practice (CGMP) Final Rule; Quality System Regulation.

2. Federal Food, Drug, and Cosmetic Act, As Amended.

3. Investigations Operations Manual - Chapter 5, Subchapter 550.

4. GMP Complaint Files: How They Relate to Reports Required Under MDR, Originally published in Medical Device & Diagnostic Industry, Volume 7, Number 5, May 1985, Revised version (4/10/85) distributed to all district offices.

5. STERILIZATION - QUESTIONS AND ANSWERS, MARCH 1985

6. Medical Device Quality Systems Manual: A Small Entity Compliance Guide (HHS Pub. No. FDA 94-4179, Dec. 1996)

7. NBS special Publication 250 - May 1984 (or update) Calibration and Related Measurement Services, U.S. Dept. of Commerce NBS, Washington, D.C. 20234.

8. Sterile Medical Devices. A GMP Workshop Manual. fourth Edition November 1984. Prepared by Division of Small Manufacturers Assistance, Office of Training and Assistance, HHS Publication FDA 84-4174.

9. Guideline on General Principles of Process Validation: Notice of Availability published in the Federal Register on May 1987.

10. Intercenter Agreement Between the Center for Biologics Evaluation and Research and the Center for Devices and Radiological Health, October 31, 1991

11. Plastic Medical Devices: A Study of Quality in The Making. September 1980. A copy of this film has been supplied to each FDA district office. This film is intended for use with the Medical Device Reference Files on plastics (see reference #17 below).

12. Medical Device Reference Files on syringes, catheters, tubes and airways, IOL and contact lenses, IUDs and filters. September 1980. One hard copy and one microfiche copy of each of these reference files has been supplied to each FDA district office.

13. Quality Control Handbook, Juran, J.M., 3rd edition, McGraw-Hill, 1974.

14. ANSI/ASQC Z1.4 (Replaces MIL-STD 105E), ANSI/ASQC Z1.9 (Replaces MIL-STD 414) Sampling Procedures and Tables for Inspection by Attribute.

15. GWQAP Manual

16. Classification Names for Medical Devices and In Vitro Diagnostic Products, HHS Publication No. (FDA) 91-4246, August 1995. This directory is organized by "keywords" in alphabetical order. The classification number (5 digit product code), class, and CFR regulation number is given for each entry listed.

17. Code of Federal Regulations, Title 21, Part 809.10, Labeling for In Vitro Diagnostic Products.

18. Advisory List of Critical Devices - 1988; Notice Published in the Federal Register on March 17, 1988.

19. Overview of Metallic Orthopedic Implants; Technical report, reference material and training aid for investigators prepared by the Division Emergency and Investigation Operations (HFC-132), Office of Regional Operations, Office of Regulatory Affairs, HHS, Public Health Service, FDA, June, 1988.

20. AQL Inspector's Rule and Manual. This special purpose plastic slide rule that rigidly adheres to MIL-STD-105E can be obtained from Infor. Inc., P.O. Box 606, Ayer, MA. 01432. Phone (508) 772-0713. Cost is approximately $20 each excluding shipping and packaging.

22. Guide to Inspections of Foreign Medical Device Manufacturers, prepared by the Division Emergency and Investigation Operations (HFC-132), Office of Regional Operations, Office of Regulatory Affairs, HHS, Public Health Service, FDA, June, 1988.

23. Code of Federal Regulations, Title 21, Part 821, Medical Device Tracking Requirements.

24. Do It By Design: Design Control Guidance

25. The FDA and Worlwide Quality Systems Requirements Guidebook for Medical Devices, Compiled by Kimberly Trautman, ASQC Quality Press, Milwaukee, Wisconsin.

Copies of CDRH GMP publications are available from the Division of Small Manufacturers Assistance (DSMA),
Telephone: 800-638-2041 or FAX 301-443-8818.

Sources to purchase these documents:

☒ **A. National Technical Information Service (NTIS)** - For information on the NTIS system please call CDRH F-O-D (see ☒ **D.** below) and request Shelf number 3799.

☒ **B. Health Care & Industry Organizations** - For a list of organizations that have agreed to assist in the distribution of this information please call CDRH F-O-D (see ☒ **D.** below) and request Shelf number 4799.

Sources to obtain copies free of charge:

☒ **C. World Wide Web (Internet)** - FDA/CDRH maintains a World Wide Web (WWW) site for easy access to information. The home page may be accessed via FDA's home page at **http://www.fda.gov**. For additional information on the WWW site please call CDRH F-O-D (see ☒ **D.** below) and request Shelf number 1799.

☒ **D. CDRH Facts-On-Demand (F-O-D)** - This automated fax system allows anyone to obtain CDRH information, 24 hours a day, 7 days a week by calling **800-899-0381** or **301-827-0111** from a touch-tone telephone. For additional information on obatining MDR documents from the CDRH F-O-D system please call CDRH F-O-D and request Shelf number 5799 from DSMA Facts (1 at first voice prompt [VP], 2 at second VP, then follow subsequent VPs).

B. ATTACHMENTS

ATTACHMENT A -	CLASS I DEVICES EXEMPT FROM MOST OF THE GMP REQUIREMENTS BY CLASSIFICATION REGULATIONS
ATTACHMENT B -	ADVISORY LIST OF DEVICES THAT ARE INTENDED FOR SURGICAL IMPLANT OR SUSTAINING LIFE
ATTACHMENT C -	MODEL WARNING LETTERS **(Revised)**

ATTACHMENT D - DESIGN CONTROL INSPECTIONAL STRATEGY, MARCH 1997

ATTACHMENT E - ORIGINAL GPM/QUALITY SYSTEM REGULATION WORDING

ATTACHMENT F - DECISION CHART - AUTHORITY TO REVIEW DESIGN CONTROL RECORDS

C. PROGRAM CONTACTS

1. ORA Contacts

a. Questions regarding inspectional requirements and/or technical assistance:

Division of Emergency & Investigational Operations
Medical Device Group
301-827-5645

b. Questions about accessing or connecting to the Parklawn Computer Center and Model 204

John Huang
Division of Information Systems, ORA
(301) 827-1559

An easy method for Field Users to access the system is to log on to the regional VAX, then type:

TELNET PCCSNA.FDA.GOV <return>

Field Users should set up their communication program to emulate a VT100 or other option before logging on to the Regional VAX.

c. Questions regarding sampling of devices and laboratory capabilities:

Division of Field Science (DFS), HFC-140
Telephone: (301) 443-3007

d. The WEAC contact point for testing medical devices is:

Director
WEAC Engineering Branch, HFR-NE480
Telephone: (781) 729-5700

e. Questions regarding COMSTAT

Gillie Kovalsky
Division of Medical Products Quality Assurance (DMPQA), HFC-240
Telephone: (301) 827-0390

2. District Office Contacts For Industry Management Concerns About Their GMP Compliance Status.

Atlanta	Ballard Graham
Baltimore	Elaine Cole
New England	John Marzilli
Buffalo	Edward Thomas
Chicago	Ray Mlecko
Cincinnati	Guy Cartwright
Dallas	Austin Templer
Denver	William Sherer
Detroit	John Dempster
Kansas	Robert Wilson
Los Angeles	Elaine Messa
Minneapolis	James Rahdo
Nashville	Ray Hedblad
New Orleans	James Green
New Jersey	Doug Ellsworth
New York	Rick Trainor
Florida	Timothy Couzins
Philadelphia	Diana Kolaitis
San Francisco	Andrea Scott
San Juan	Sam Jones
Seattle	David Pettenski
St. Louis	Charles Bringman
Foreign Firms	Marje Hoban (CDRH)

3. CDRH Contacts

a. MDR Report and Data Summaries:

Arlene Underdonk
Division of Surveillance Systems, OSB
Information and Analysis Branch, HFZ-531
Telephone: (301) 594-2731

b. Industry MDR Report: (301) 427-7500. Do not call this phone number to make inquiries.

c. Questions about using **MDRAPSY** (MDR/PRP database).

Del Futrell
Division of Surveillance Systems, OSB
Information and Analysis Branch, HFZ-531
Telephone: (301) 594-2731

d. Questions regarding sampling and/or testing of **general medical** devices.

Edward Mueller or Donald Marlowe
Division of Mechanics and Material Sciences, HFZ-150
Telephone: (301) 443-7003

e. Express Mail Address for All Regulatory Action Recommendations:

Field Programs Branch, HFZ-306
Office of Compliance
Center for Devices and Radiological Health
2094 Gaither Road
Rockville, Maryland 20850

f. Questions regarding the interpretation and applicability of the device Quality System regulation and GMP exemptions:

Kimberly A. Trautman
GMP/Quality Systems Expert, HFZ-340
Telephone: (301) 594-4648 ext.126

or,

Contact the appropriate Division/Branch in the Office of Compliance OC for the subject device.

g. Questions regarding remanufacturing, refurbishing/reconditioning of used devices:

Wes Morgenstern
Division of Program Operations, HFZ-305
Telephone: (301) 594-4699 ext. 102

h. Questions regarding the reprocessing of single use devices:

Larry Spears
Division of Enforcement III, HFZ-340
Telephone: (301) 594-4646 ext. 153

i. Questions regarding this Compliance Program:

Linda Godfrey
Field Programs Branch, HFZ-306
Telephone: (301) 594-4695 ext. 143
Fax: (301) 594-4715

j. Questions regarding compliance of product software, stand alone software, or process equipment software:

Stewart Crumpler
Office of Compliance Software Expert, HFZ-340
Telephone: (301) 594-4659 ext. 119

ATTACHMENT A

CLASS I DEVICES EXEMPT FROM MOST OF THE GMP REQUIREMENTS BY CLASSIFICATION REGULATIONS

THE FOLLOWING LIST OF EXEMPTED CLASS I DEVICES IS ARRANGED IN PRODUCT CODE SEQUENCE.

TO USE THIS LIST CONSULT THE KEY WORD LIST FOR DEVICES TO DETERMINE THE PRODUCT CODE. THE KEY WORD LIST WAS FORMERLY INCLUDED IN THE EDRO DATA CODES MANUAL (TN-84-1) AND WILL BE ON FILE IN THE DISTRICT'S REFERENCE FILE.

ANESTHESIOLOGY DEVICES

(Final Regulation Published in July 16, 1982 FEDERAL REGISTER;
EFFECTIVE DATE: 8/16/82)

			REGULATION
73	BTB	HOOK, ETHER	868.5420
73	BXJ	CLIP, NOSE	868.6225
73	BXL	ALGESIMETER, MANUAL	868.1030
73	BYN	CHAIR, POSTURE, FOR CARDIAC	868.5365
73	BYO	BOTTLE, BLOW	868.5220
73	BYW	REBREATHING DEVICE	868.5675
73	BZN	CART, EMERGENCY, CARDIOPULMONARY	868.6175
73	CBG	SPREADER, CUFF	868.5760
77	EPE	BRUSH, CLEANING, TRACHEAL TUBE	868.5795
73	JFE	VALVE, SWITCHING (PLOSS)	868.1965

CARDIOVASCULAR

74	---	(No devices have been exempted)

CLINICAL CHEMISTRY DEVICES

(Final Regulation Published in May 1, 1987 FEDERAL REGISTER;
EFFECTIVE DATE: 7/30/87)

75	JBS	TIMER, GENERAL LABORATORY	862.2050
75	JJP	ION SELECTIVE ELECTRODES (NON-SPECIFIED)	862.2050
75	JQO	ANALYTICAL BALANCE	862.2050
75	JQQ	DIALYZER	862.2050
75	JQY	PH METER	862.2050
75	JQZ	POLARIMETER	862.2050
75	JRB	MICRO MIXER	862.2050
75	JRG	HEATING BLOCK	862.2050

75	JRJ	DRYING UNIT	862.2050
75	JRK	EVAPORATOR	862.2050
75	JRL	MEMBRANE FILTER UNIT	862.2050
75	JRM	FREEZER	862.2050
75	JRO	BLENDER/MIXER	862.2050
75	JRQ	SHAKER/STIRRER	862.2050
75	JRR	TEMPERATURE REGULATOR	862.2050

DENTAL DEVICES

(Final Regulation Published in August 12, 1987 FEDERAL REGISTER;
EFFECTIVE DATE: 9/11/87)

76	EBH	MATERIAL IMPRESSION TRAY RESIN	872.3670
76	EEA	BASE PLATE SHELLAC	872.6200
76	EEJ	GUARD, DISK	872.6010
76	EFH	PAPER, ARTICULATION	872.6140
76	EFW	TOOTH BRUSH, MANUAL	872.6855
76	EFX	PROTECTOR, SILICATE	872.6670
76	EGD	INTRAORAL DENTAL WAX	872.6890
76	EGZ	FILM, X-RAY HOLDER	872.1905
76	EHJ	DISK, ABRASIVE	872.6010
76	EHK	PROPHYLAXIS CUP	872.6290
76	EHL	POINT, ABRASIVE	872.6010
76	EHM	STRIP, POLISHING AGENT	872.6010
76	EHY	TRAY, IMPRESSION, PREFORMED	872.6880
76	EIE	DAM, RUBBER AND ACCESSORIES	872.6300
76	EJP	ARTICULATOR	872.3150
76	EJQ	WHEEL, POLISHING AGENT	872.6010
76	JET	PICK, MASSAGING	872.6650
76	KCO	TUBE IMPRESSION AND MATRIX	872.5220
76	KCR	FACE BOW	872.3220
76	KCS	PANTOGRAPH	872.3730
76	KHR	SALIVA ABSORBER PAPER	872.6050
76	KMT	DISPOSABLE FLUORIDE TRAY	872.6870
76	KXR	RESIN APPLICATOR	872.4565

EAR, NOSE, AND THROAT DEVICES

(Final Regulation Published in November 6, 1986 FEDERAL REGISTER;
EFFECTIVE DATE: 12/8/86)

77	ESE	LARYNX, ARTIFICIAL (BATTERY-POWERED)	874.3375
77	ETM	GUSTOMETER	874.1500

77	JPN	MANUAL NEBULIZER PUMP	874.5220
77	JXS	BLOCK, CUTTING, ENT	874.3540
77	JXT	CRIMPER, WIRE, ENT	874.3540
77	JXW	DIE, WIRE BENDING, ENT	874.3540
77	JXX	FORCEPS WIRE CLOSURE, ENT	874.3540
77	JXY	JIG, PISTON CUTTING, ENT	874.3540
77	JXZ	PUNCH, GELFOAM	874.3540
77	JYA	SCISSORS, WIRE CUTTING, ENT	874.3540
77	JYB	VISE, OSSICULAR FINGER	874.3540
77	KCL	BLOWER, POWDER, ENT	874.5220
77	KCM	DROPPER, ENT	874.5220
77	KCN	EAR WICK	874.5220
77	KCO	INHALER, NASAL	874.5220

GASTROENTEROLOGY-UROLOGY DEVICES

(Final Regulation Published in November 23, 1983 Federal Register;
EFFECTIVE DATE: 12/23/83)

78	EXI	PASTE-ON DEVICE FOR INCONTINENCE	876.5250
78	EXJ	DEVICE, INCONTINENCE, UROSHEATH TYPE	876.5250
78	EXN	HERNIA SUPPORT	876.5970
78	EYQ	PROTECTIVE GARMENT FOR INCONTINENCE	876.5920
78	EYT	SHEATH, CORRUGATED RUBBER	876.5250
78	FAQ	BAG, LEG (FOR EXTERNAL USE)	876.5250
78	FCE	ENEMA KIT	876.5210
78	FFH	COLLECTOR, URINE, PEDIATRIC	876.5250
78	KNX	URINE COLLECTOR AND ACCESSORIES (not intended to be connected to an indwelling catheter:	876.5250

GENERAL AND PLASTIC SURGERY DEVICES

79	KCZ	PROSTHESIS, BREAST, EXTERNAL	878.3800

GENERAL HOSPITAL AND PERSONAL USE DEVICES

(Final Regulation Published in October 21, 1980 Federal Register:
EFFECTIVE DATE: 11/20/80)

80	FLH	SANITIZER, MECHANICAL	880.6800
80	FMA	DEPRESSOR, TONGUE	880.6230
80	FME	GOWN, EXAMINATION	880.6265
80	FMF	NON-STERILE IRRIGATING SYRINGE (SYRINGE)	880.5860

80	FMH	CONTAINER, SPECIMEN	880.6175
80	FML	CHAIR, BLOOD DONOR (NON-WHEELED)	880.6140
80	FMP	PROTECTOR, SKIN PRESSURE	880.6450
80	FMQ	RESTRAINT PROTECTIVE	880.6760
80	FMR	TRANSFER DEVICE, PATIENT, MANUAL	880.6785
80	FMW	MATTRESS COVER (FOR MEDICAL PURPOSE)	880.6190
80	FNJ	BED, MANUAL	880.5120
80	FNN	NIPPLE, LAMBS FEEDING	880.5640
80	FNP	URINAL	880.6730
80	FNS	RING CUTTER	880.6200
80	FNY	BASIN, EMESIS	880.6730
80	FOA	BOARD, CARDIOPULMONARY	880.6080
80	FOB	BEDPAN	880.6730
80	FOK	PAD, NEONATAL EYE	880.6025
80	FOR	NON-STERILE ABSORBENT TIPPED APPLICATOR	880.5270
80	FPF	BOTTLE, HOT/COLD WATER	880.6085
80	FPP	STRETCHER, HAND CARRIED	880.6900
80	FPS	BOARD, BED	880.6070
80	FQA	SCALE, SURGICAL SPONGE	880.2740
80	FQJ	THERAPEUTIC SCROTAL SUPPORT	880.5820
80	FQK	BINDER, PERINEAL	880.5160
80	FQL	STOCKING, MEDICAL SUPPORT	880.5780
80	FQM	BANDAGE, ELASTIC	880.5075
80	FRI	SCALE, STAND-ON, PATIENT	880.2700
80	FRJ	CHAIR, GERIATRIC (NON-WHEELED, NON-POWERED)	880.6140
80	FRK	CHAIR, EXAMINATION, AND TREATMENT	880.6140
80	FRL	MEDICAL ABSORBENT FIBER	880.5300
80	FRP	PEDIATRIC POSITION HOLDER	880.5680
80	FSD	BINDER, ABDOMINAL	880.5160
80	FSL	STRETCHER, HAND CARRIED	880.6900
80	IKY	NON-POWERED FLOTATION THERAPY MATTRESS	880.5150
80	KIA	COVER, CAST	880.6185
80	KME	MEDICAL DISPOSABLE BEDDING	880.6060
80	KMO	BINDER, ELASTIC	880.5160
80	KYR	BAG, ICE	880.6050
80	KYT	BATTERY POWERED EXAM LIGHT	880.6350
80	KYW	GRADUATED LIQUID MEDICATION	880.6430
80	KYX	LIQUID MEDICATION DISPENSER	880.6430
80	LBJ	VEIN STABILIZATION DEVICE	880.6980

IMMUNOLOGY DEVICES

82	---	(No devices have been exempted)

MICROBIOLOGY DEVICES
(Final Regulation Published in November 9, l982 FEDERAL REGISTER;
EFFECTIVE DATE: 12/9/82)

83	GMB	LIGHT, WOOD'S FLUORESCENCE	866.2600
83	JTB	MEDIA DISPENSING/STACKING DEVICES	866.2440
83	JTM	ANAEROBIC GLOVE BOX	866.2120
83	JTQ	INCUBATORS/WATER BATHS, ALL	866.2540
83	KZC	MANUAL COLONY COUNTER	866.2180

NEUROLOGY DEVICES
(Final Regulation Published in September 4, 1979 FEDERAL REGISTER;
EFFECTIVE DATE: 10/4/79)

84	GWI	TWO POINT DISCRIMINATOR	882.1200
84	GWX	TUNING FORK	882.1525
84	GWZ	PERCUSSOR	882.1700
84	GXB	ESTHESIOMETER	882.1500

OBSTETRICAL/GYNECOLOGICAL

85	---	(No devices have been exempted)	

OPHTHALMIC DEVICES
(Final Regulation Published in September 2, 1987 FEDERAL REGISTER;
EFFECTIVE DATE: 10/2/87)

86	HIT	TESTER, COLOR VISION	886.1170
86	HJC	OCULAR ESTHESIOMETER	886.1040
86	HJF	MAGNIFIER, HAND-HELD, LOW-VISION	886.5540
86	HJH	BINOCULAR LOUPE, LOW POWER	886.5120
86	HJI	LENS, FUNDUS, HRUBY, DIAGNOSTIC	886.1395
86	HJJ	LENS, FRESNEL, FLEXIBLE, DIAGNOSTIC	886.1390
86	HJL	LENS, CONDENSING, DIAGNOSTIC	886.1380
86	HKB	TELESCOPE, HAND-HELD, LOW-VISION	886.5870
86	HKC	SPECTACLE MICROSCOPE, LOW-VISION	886.5540
86	HKD	TAPE, NYSTAGMUS	886.1905
86	HKF	MIRROR, HEADBAND, OPHTHALMIC	886.1500
86	HKG	FORNISXCOPE	886.1320
86	HKK	TELESCOPE, SPECTACLE, LOW-VISION	886.5870
86	HKM	RETINOSCOPE, BATTERY-POWERED	886.1780

86	HKN	REFRACTOR, MANUAL, NON-POWERED,	886.1770
86	HKQ	PRISM, ROTARY, OPHTHALMIC	886.1665
86	HKR	LENS, MADDOX	886.1400
86	HKT	PRISM, FRESNEL, OPHTHALMIC	886.1655
86	HKW	PRISM, BAR, OPHTHALMIC	886.1650
86	HLC	INSTRUMENT, MEASURING, STEREOPSIS	886.1460
86	HLE	RULER, NEAR POINT (PUNCTOMETER)	886.1790
86	HLH	PUPILLOMETER, MANUAL	886.1700
86	HLJ	OPHTHALMOSCOPE BATTERY-POWERED	886.1570
86	HLK	SCREEN, TANGENT, TARGET BATTERY-POWERED	886.1810
86	HLN	GAUGE, LENS, OPHTHALMIC	886.1420
86	HLO	TEST, SPECTACLE DISSOCIATION, BATTERY-POWERED	886.1910
86	HLP	TARGET, FUSION AND STEREOSCOPIC	886.1880
86	HLR	KERATOSCOPE, BATTERY-POWERED	886.1350
86	HMD	CHAIR, OPHTHALMIC, MANUAL	886.1140
86	HMG	STAND, INSTRUMENT, OPHTHALMIC	886.1860
86	HMJ	SCREEN, TANGENT, PROJECTION BATTERY-POWERED	886.1810
86	HMM	DISTOMETER	886.1190
86	HMQ	MARKER, SCLERA	886.4570
86	HMR	MARKER, OCULAR	886.4570
86	HMS	DRUM, OPHTHALMIC KNIFE TEST	886.4230
86	HMX	CANNULA, OPHTHALMIC	886.4350
86	HMZ	TRABECULOTOME	886.4350
86	HNA	SPUD, OPHTHALMIC	886.4350
86	HNB	SPOON, OPHTHALMIC	886.4350
86	HNC	SPECULA, OPHTHALMIC	886.4350
86	HND	SPATULA, OPHTHALMIC	886.4350
86	HNE	SNARE, ENUCLEATING	886.4350
86	HNF	SCISSORS, OPHTHALMIC	886.4350
86	HNG	RONGEUR, LACHRYMAL SAC	886.4350
86	HNH	RING, OPHTHALMIC (FLIERINGA)	886.4350
86	HNI	RETRACTOR, OPHTHALMIC	886.4350
86	HNJ	PUNCH, CORNEO-SCLERAL	886.4350
86	HNK	PROBE, TRABECULOTOMY	886.4350
86	HNL	PROBE, LACHRYMAL	886.4350
86	HNM	NEEDLE, OPHTHALMIC SUTURING	886.4350
86	HNN	KNIFE, OPHTHALMIC	886.4350
86	HNP	INTRODUCER, SPHERE	886.4350
86	HNQ	HOOK, OPHTHALMIC	886.4350
86	HNR	FORCEPS, OPHTHALMIC	886.4350
86	HNS	EXPRESSOR	886.4350
86	HNT	ERISOPHAKE	886.4350

86	HNW	DILATOR, LACHRYMAL	886.4350
86	HNX	DEPRESSOR, ORBITAL	886.4350
86	HNY	CYSTOTOME	886.4350
86	HNZ	CURETTE, OPHTHALMIC	886.4350
86	HOA	COMPRESSOR, ORBITAL	886.4350
86	HOB	CLAMP, MUSCLE, OPHTHALMIC	886.4350
86	HOC	CLIP, IRIS RETRACTOR	886.4350
86	HOD	CLAMP, EYELID, OPHTHALMIC	886.4350
86	HOE	CALIPER, OPHTHALMIC	886.4350
86	HOF	BURR, CORNEAL, MANUAL	886.4350
86	HOH	SPECTACLE, OPERATING (LOUPE), OPHTHALMIC	886.4770
86	HOI	SPECTACLE, MAGNIFYING	886.5840
86	HOJ	SCREEN, TANGENT, TARGET	886.1810
86	HOL	SCREEN, TANGENT, FELT (CAMPIMETER)	886.1810
86	HON	PERIMETER, MANUAL	886.1605
86	HOP	CAMPIMETER, STEREO, BATTERY-POWERED	886.1810
86	HOQ	GRID, AMSLER	886.1330
86	HOR	SIMULITAN (INCLUDING CROSSED CYLINDER)	886.1840
86	HOT	AID, VISION, IMAGE-INTENSIFICATION, BATTERY-POWERED	886.5910
86	HOW	DRUM, OPTOKINETIC	886.1200
86	HOX	CHART, VISUAL ACUITY	886.1150
86	HOY	SHIELD, EYE, OPHTHALMIC	886.4750
86	HPA	FRAME, TRIAL, OPHTHALMIC	886.1415
86	HPB	CLIP, LENS, TRIAL, OPHTHALMIC	886.1410
86	HPD	LENS, BAGOLINI	886.1375
86	HPE	AID, VISION, OPTICAL, BATTERY-POWERED	886.5915
86	HPN	MAGNET, PERMANENT	886.4445
86	HRH	TREPHINE, MANUAL, OPHTHALMIC	886.4350
86	HRK	TABLE, INSTRUMENT, MANUAL, OPHTHALMIC	886.4855

ORTHOPEDIC DEVICES

(Final Regulation Published in September 4, 1987 FEDERAL REGISTER;
EFFECTIVE DATE: 10/5/87)

87	HST	APPARATUS, TRACTION, NON-POWERED ORTHOPEDIC	888.5850
87	JQZ	TRACTION COMPONENT, NON-INVASIVE	862.2050
87	LGF	CAST COMPONENT	888.5940
87	LGG	MANUAL CAST APPLICATION AND REMOVAL INSTRUMENT	888.5980

HEMATOLOGY AND PATHOLOGY DEVICES

(Final Regulation Published in September 12, 1980 FEDERAL REGISTER;
EFFECTIVE DATE: 10/14/80)

88	GFL	PONCEAU STAIN	864.1850
88	GFR	NEW METHYLENE BLUE STAIN	864.1850
88	GGD	CRYSTAL VIOLET FOR HEMATOLOGY	864.1850
88	GGH	IRON STAINS	864.1850
88	GGI	PERIODIC ACID SCHIFF STAIN	864.1850
88	GHP	BRILLIANT CRESYL BLUE	864.1850
88	GIX	TOLUIDINE BLUE	864.1850
88	GJH	RETICULOCYTE STAIN	864.1850
88	GJJ	HEINZ BODY STAINS	864.1850
88	GJL	ROMANOWSKY STAINS	864.1850
88	GJO	SLIDES AND COVERSLIPS	864.3010
88	GJY	MICROSCOPE	864.3600
88	GLP	GIEMSA STAIN	864.1850
88	HYB	EOSIN Y	864.1850
88	HYC	FAST GREEN	864.1850
88	HYD	FAST RED SALT B	864.1850
88	HYE	FONTANNA SILVER SOLUTION	864.1850
88	HYH	GOLD CHLORIDE	864.1850
88	HYI	GRAMS IODINE	864.1850
88	HYJ	HEMATOXYLIN	864.1850
88	HYK	HEMATOXYLIN HARRIS'S	864.1850
88	HYL	HEMATOXYLIN MAYER'S	864.1850
88	HYO	HEMATOXYLIN WEIGERT'S	864.1850
88	HYQ	IRON CHLORIDE-WEIGERT	864.1850
88	HYR	LEUCO-PATENT BLUE	864.1850
88	HYS	LIGHT GREEN	864.1850
88	HYW	MALLORY'S TRICHROME STAIN	864.1850
88	HYY	METANIL YELLOW	864.1850
88	HYZ	METHENAMINE SILVER	864.1850
88	HZA	METHYL GREEN	864.1850
88	HZC	MUCICARMINE	864.1850
88	HZD	MULLER'S COLLOIDAL IRON	864.1850
88	HZE	NILE BLUE	864.1850
88	HZF	NUCLEAR FAST RED	864.1850
88	HZG	OIL RED O	864.1850
88	HZH	ORANGE G	864.1850
88	HZJ	PAPANICOLAOU STAIN	864.1850
88	HZL	PHLOXINE B	864.1850
88	HZM	PHOSPHOTUNGSTIC ACID HEMATOXYLIN	864.1850
88	HZN	PICRO METHYL BLUE	864.1850
88	HZO	PONCEAU STAIN	864.1850

88	HZP	PYRONIN	864.1850
88	HZQ	RED VIOLET - LB	864.1850
88	HZR	RESORCIN FUCHSIN	864.1850
88	HZS	SAFRANIN	864.1850
88	HZT	SCHIFF REAGENT	864.1850
88	HZX	SILVER NITRATE	864.1850
88	HZY	SIRIUS RED	864.1850
88	HZZ	SUDAN BLACK B	864.1850
88	IAA	TITAN YELLOW	864.1850
88	IAB	TOLUIDINE BLUE	864.1850
88	IAC	VAN GIESON'S STAIN	864.1850
88	IAD	VAN GIESON'S PICRO-FUCHSIN	864.1850
88	IAE	WEIGERT'S IRON HEMATOXYLIN	864.1850
88	IAF	WRIGHT'S STAIN	864.1850
88	IAM	LUGOL'S SOLUTION	864.4010
88	IAT	APATHY'S GUM SYRUP	864.4010
88	IAW	COLLODION	864.4010
88	IBJ	ICROSCOPE, LIGHT	864.3600
88	IBK	MICROSCOPE, FLUORESCENCE/UV	864.3600
88	IBL	MICROSCOPE, INVERTED STAGE, TISSUE CULTURE	864.3600
88	IBM	MICROSCOPE, PHASE CONTRAST	864.3600
88	ICC	EOSIN B	864.1850
88	ICD	DARROW RED	864.1850
88	ICF	CRYSTAL VIOLET FOR HISTOLOGY	864.1850
88	ICG	CRESYL VIOLET ACETATE	864.1850
88	ICH	CONGO RED	864.1850
88	ICI	CHROME ALUM HEMATOXYLIN	864.1850
88	ICL	CARBOL FUCHSIN	864.1850
88	ICM	BRILLIANT YELLOW	864.1850
88	ICN	BIEBRICH SCARLET	864.1850
88	ICO	BEST'S CARMINE	864.1850
88	ICQ	AZURE A	864.1850
88	ICR	AZOCARMINE B	864.1850
88	ICS	AZOCARMINE G	864.1850
88	ICT	AZAN COUNTERSTAIN	864.1850
88	ICX	ANILINE	864.1850
88	ICY	ANILINE ACID FUCHSIN	864.1850
88	ICZ	AMMONIACAL SILVER HYDROXIDE SILVER NITRATE	864.1850
88	IDA	ALCIAN BLUE	864.1850
88	IDB	ALDEHYDE FUCHSIN	864.1850
88	IDC	ACRIDINE ORANGE	864.1850
88	IDD	ALIZARIN RED	864.1850
88	IDE	ACID HEMATEIN	864.1850

88	IDF	ACID FUCHSIN	864.1850
88	IDL	MICROTOME, ACCESSORIES	864.3010
88	IDM	MICROTOME, ULTRA	864.3010
88	IDN	MICROTOME, FREEZING ATTACHMENT	864.3010
88	IDO	MICROTOME, ROTARY	864.3010
88	IDP	MICROTOME, CRYOSTAT	864.3010
88	IDQ	INFILTRATOR	864.3010
88	IDR	OVENS, PARAFFIN	864.3010
88	IDS	MELTING POT, PARAFFIN	864.3010
88	IDT	MELTING POINT APPARATUS, PARAFFIN	864.3010
88	IDW	DISPENSERS, PARAFFIN	864.3010
88	IDX	SIEVES, TISSUE	864.3010
88	IDY	FLOTATION BATHS, TISSUE	864.3010
88	IDZ	CASSETTES, TISSUE	864.3010
88	IEG	TABLE, SLIDE WARMING	864.3010
88	IEH	LAMPS, SLIDE WARMING	864.3010
88	IER	OLYETHYLENE GLYCOL (CARBOWAX)	864.4010
88	IEX	GELATIN	864.4010
88	IEZ	CELLOIDIN	864.4010
88	IFF	DECALCIFIER SOLUTION, ELECTROLYTIC	864.4010
88	IFH	ZENKER'S SOLUTION	864.4010
88	IFI	SPRAYS, SYNTHETIC, SMEAR	864.4010
88	IFJ	RICHARDSON GLYCOL FIXATIVE	864.4010
88	IFL	POLETHYLENE GLYCOL PRESERVATIVE	864.4010
88	IFN	ORTH'S SOLUTION	864.4010
88	IFO	NEWCOMER'S SOLUTION	864.4010
88	IFP	FORMALIN, NEUTRAL BUFFERED	864.4010
88	IFQ	MERCURIC CHLORIDE FORMULATIONS	864.4010
88	IFS	HELLY SOLUTION	864.4010
88	IFZ	GELATIN FOR SPECIMEN ADHESION	864.4010
88	IGB	FORMALIN-SODIUM ACETATE SOLUTION	864.4010
88	IGC	FORMALIN-SALINE	864.4010
88	IGD	FORMOL CALCIUM SOLUTION	864.4010
88	IGE	FORMALIN AMMONIUM BROMIDE	864.4010
88	IGF	FORMALIN-ALCOHOL-ACETIC ACID	864.4010
88	IGG	FORMALDHYDE (FORMALIN, FORMOL)	864.4010
88	IGK	CLARKE'S SOLUTION	864.4010
88	IGM	CARNOY'S SOLUTION	864.4010
88	IGN	BOUIN'S FLUID	864.4010
88	IHJ	BLENDORS FOR SPUTUM	864.3010
88	IJZ	CLEARING OIL	864.4010
88	JCC	PH BUFFERS	864.4010
88	JCE	ISOTONIC SOLUTION	864.4010
88	JCH	ESTERASE	864.1850
88	JCI	ACID PHOSPHATASE, CYTOCHEMICAL	864.1850

88	JTS	STAINS, MICROBIOLOGIC, ALL	864.1850
88	KDX	DECALCIFIER SOLUTION, ACID CONTAINING	864.4010
88	KDY	CHELATING AGENTS FOR DECALIFICATION	864.4010
88	KDZ	DEALCIFIER DEVICES, ELECTROLYTIC	864.3010
88	KEE	OSMIUM TETROXIDE	864.4010
88	KEF	PARAFORMALDEHYDE	864.4010
88	KEG	LAMPS, MICROSCOPE	864.4010
88	KEH	MICROMETERS, MICROSCOPE	864.3600
88	KEI	CONDENSERS, MICROSCOPE	864.3600
88	KEJ	STAGES, MICROSCOPE	864.3600
88	KEL	ALBUMIN-BASED ADHESIVES	864.4010
88	KEM	CLEARING AGENTS	864.4010
88	KEO	PARAFFIN, ALL FORMULATIONS	864.4010
88	KEP	OIL SOLUBLE MOUNTING MEDIA	864.4010
88	KEQ	WATER SOLUBLE MOUNTING MEDIA	864.4010
88	KER	EMBEDDING CONTAINER	864.3010
88	KES	COVERSLIPS, MICROSCOPE SLIDE	864.3010
88	KET	FILTER, CELL COLLECTION, TISSUE	864.3010
88	KEW	SLIDES, MICROSCOPE	864.3010
88	KFC	METHYLENE BLUE, TISSUE STAIN	864.1850
88	KFD	ANILINE BLUE	864.1850
88	KFE	NEUTRAL RED	864.1850
88	KFL	MICROTOME, SLIDING	864.3010
88	KIY	CHAMBER, SLIDE CULTURE	864.2240
88	KIZ	DISH, TISSUE CULTURE	864.2240
88	KJA	FLASK, TISSUE CULTURE	864.2240
88	KJB	ROLLER APPARATUS	864.2240
88	KJC	ROLLER BOTTLE, TISSUE CULTURE	864.2240
88	KJD	SPINNER FLASK	864.2240
88	KJE	SPINNER SYSTEM, CELL CULTURE	864.2240
88	KJF	SUSPENSION SYSTEM, CELL CULTURE	864.2240
88	KJG	TUBE, TISSUE CULTURE	864.3010
88	KJH	PERFUSION APPARATUS	864.2240
88	KJK	AURAMINE O	864.1850
88	KJL	AZURE C	864.1850
88	KJM	BISMARCK BROWN Y	864.1850
88	KJN	BRILLIANT CRESYL BLUE	864.1850
88	KJO	BRILLIANT GREEN	864.1850
88	KJP	CARMINE	864.1850
88	KJQ	CHLORAZOL BLACK E	864.1850
88	KJR	ERYTHROSIN B	864.1850
88	KJS	ETHYL EOSIN	864.1850
88	KJT	INDIGOCARMINE	864.1850
88	KJW	JANUS GREEN B	864.1850
88	KJX	JENNER STAIN	864.1850

88	KJY	MALACHITE GREEN	864.1850
88	KJZ	MARTIUS YELLOW	864.1850
88	KKA	METHYL ORANGE	864.1850
88	KKB	METHYL VIOLET 2B	864.1850
88	KKC	METHYLENE VIOLET	864.1850
88	KKD	NIGROSIN	864.1850
88	KKE	ORANGE II	864.1850
88	KKF	ORCEIN	864.1850
88	KKG	PROTARGOL S	864.1850
88	KKH	RESAUZRIN TABLET	864.1850
88	KKI	ROSE BENGAL	864.1850
88	KKJ	SUDAN III	864.1850
88	KKK	SUDAN IV	864.1850
88	KKL	THIONIN	864.1850
88	KKM	METHYLENE BLUE THIOCYANATE	864.1850
88	KKP	SILVER CARBONATE SOLUTION	864.1850
88	KKQ	SODIUM PERIODATE	864.1850
88	KKR	POTASSIUM PERIODATE	864.1850
88	KKS	PERIODIC ACID	864.1850
88	KKT	HEMATOXYLIN EHRLICH'S	864.1850
88	KKW	BASIC FUCHSIN	864.1850
88	KQD	HEMATOLOGY STAINS	864.4010

PHYSICAL MEDICINE DEVICES

(Final Regulation Published in November 23, 1983 Federal Register;
EFFECTIVE DATE: 12/23/83)

89	IKW	UTENSIL, HOMEMAKING	890.5050
89	IKX	AID, TRANSFER	890.5050
89	ILC	UTENSIL, EATING	890.5050
89	ILD	ADAPTOR, DRESSING	890.5050
89	ILE	SLING, ARM, OVERHEAD SUPPORTED	890.3475
89	ILG	STOCKING, ELASTIC	890.3475
89	ILH	SPLINT, HAND, AND COMPONENTS	890.3475
89	ILI	SLING, ARM	890.3640
89	ILP	SYSTEM, COMMUNICATION, NON-POWERED	890.3700
89	ILS	ADAPTOR, HYGIENE	890.5050
89	ILT	ADAPTOR, RECREATIONAL	890.5050
89	ILW	ADAPTOR, GROOMING	890.5050
89	ILZ	ACCESSORIES, TRACTION	890.5925
89	IMA	HEAT PACK, MOIST	890.5730
89	IME	PACK, HOT OR COLD, REUSABLE	890.5700
89	IMS	SUPPORT, HEAD AND TRUNK, WHEELCHAIR	890.3910
89	IMX	BOARD, LAP, WHEELCHAIR	890.3910

89	IMY	ARMBOARD, WHEELCHAIR	890.3910
89	IMZ	HOLDER, CRUTCH AND CANE, WHEELCHAIR	890.3910
89	INC	CUFF, PUSHER, WHEELCHAIR	890.3910
89	INE	SLING, OVERHEAD SUSPENSION, WHEELCHAIR	890.3910
89	INF	SCALE, PLATFORM, WHEELCHAIR	890.3940
89	INP	TIPS AND PADS, CANE, CRUTCH AND WALKER	890.3790
89	INT	PLINTH	890.3520
89	IOD	COMPONENTS, EXERCISE	890.5350
89	IOE	BARS, PARALLEL, EXERCISE	890.5370
89	IOG	TREADMILL, MECHANICAL	890.5370
89	ION	EXERCISER, NON-MEASURING	890.5370
89	IOY	SUPPORT, ARM	890.3475
89	IOZ	SPLINT, ABDUCTION, CONGENITAL HIP DISLOCATION	890.3665
89	IPG	SHOE, CAST	890.3025
89	IPM	COVER, LIMB	890.3025
89	IPR	CRUTCH	890.3150
89	IPS	CANE	890.3075
89	IPT	ORTHOSIS, THORACIC	890.3490
89	IPW	ORTHOSIS, SACROILIAC, SOFT	890.3490
89	IPX	ORTHOSIS, RIB FRACTURE, SOFT	890.3490
89	IPY	ORTHOSIS, LUMBO-SACRAL	890.3490
89	IQE	ORTHOSIS, LUMBAR	890.3490
89	IQF	ORTHOSIS, CERVICAL-THORACIC, RIGID	890.3490
89	IQG	ADAPTOR, HOLDER, SYRINGE	890.5050
89	IQI	ORTHOSIS, LIMB BRACE	890.3475
89	IQJ	SPLINT, CLAVICLE	890.3490
89	IQK	ORTHOSIS, CERVICLE	890.3490
89	IQM	SPLINT, TEMPORARY, TRAINING	890.3025
89	IQO	DEVICE, PROSTHESIS ALIGNMENT	890.3025
89	IQP	ROTATOR, TRANSVERSE	890.3025
89	IQQ	JOINT, SHOULDER, EXTERNAL LIMB COMPONENT	890.3420
89	IQW	HOOK, EXTERNAL LIMB COMPONENT, POWERED	890.3420
89	IQX	HOOK, EXTERNAL LIMB COMPONENT, MECHANICAL	890.3420
89	IQZ	HAND, EXTERNAL LIMB COMPONENT, POWERED	890.3420
89	IRA	HAND, EXTERNAL LIMB COMPONENT, MECHANICAL	890.3420
89	IRD	JOINT, ELBOW, EXTERNAL LIMB COMPONENT, MECHANICAL	890.3420
89	IRE	JOINT, ELBOW, EXTERNAL LIMB COMPONENT, POWERED	890.3420
89	ISH	ANKLE/FOOT, EXTERNAL LIMB COMPONENT	890.3420
89	ISL	JOINT, HIP, EXTERNAL LIMB COMPONENT	890.3420
89	ISM	PYLON, POST SURGICAL	890.3025

89	ISN	CABLE	890.3420
89	ISP	VALVE, PROSTHESIS	890.3420
89	ISR	BAND OR BELT, PELVIC SUPPORT	890.3425
89	ISS	PROSTHESIS, THIGH SOCKET, EXTERNAL COMPONENT	890.3420
89	ISY	JOINT, KNEE, EXTERNAL LIMB COMPONENT	890.3420
89	ISZ	UNIT, WRIST, EXTERNAL LIMB COMPONENT, MECHANICAL	890.3420
89	ITC	STIRRUP, EXTERNAL BRACE COMPONENT	890.3410
89	ITG	BANDAGE, CAST	890.3025
89	ITJ	WALKER, MECHANICAL	890.3825
89	ITM	CAGE, KNEE	890.3475
89	ITN	SPLINT, DENIS BROWN	890.3675
89	ITO	TWISTER, BRACE SETTING	890.3410
89	ITQ	JOINT, KNEE, EXTERNAL BRACE	890.3475
89	ITS	JOINT, HIP, EXTERNAL BRACE	890.3475
89	ITW	JOINT, ANKLE, EXTERNAL BRACE	890.3475
89	KGH	UNIT, WRIST, EXTERNAL LIMB COMPONENT, POWERED	890.3420
89	KHY	CANE, SAFETY WALK	890.3075
89	KND	ACCESSORIES, WHEELCHAIR	884.5390
89	KNL	BOARD, SCOOTER, PRONE	890.5370
89	KNP	ORTHOSIS, CORRECTIVE SHOE	890.3475
89	KTZ	BATH, SITZ, NON-POWERED	888.4150

RADIOLOGICAL DEVICES

(Final Regulation Published in January 20, 1988 FEDERAL REGISTER; EFFECTIVE DATE: 2/19/88)

90	IWY	HOLDER, HEAD, RADIOGRAPHIC	892.1920
90	IXF	TEST PATTERN, RADIOGRAPHIC	892.1940
90	IXG	PHANTOM, ANTHROPOMORPHIC, RADIOGRAPHIC	892.1950

CLINICAL TOXICOLOGY DEVICES

(Final Regulation Published in May 1, 1987 FEDERAL REGISTER; EFFECTIVE DATE: 7/30/87)

91	DJS	UV LIGHT, TLC	862.2270
91	DKK	DEVELOPING TANKS, TLC	862.2270
91	DLC	ATOMIZER, TLC	862.2270
91	DPA	THIN LAYER CHROMATOGRAPHY, APPARATUS, GENERAL USE	862.2270

ATTACHMENT B

ADVISORY LIST OF DEVICES

THAT ARE INTENDED FOR SURGICAL IMPLANT OR SUSTAINING LIFE

NOTE: The Quality System Regulation no longer refers to critical devices. However, 21 CFR 820.65 requires traceability for all devices that meet the same definition as devices on the Advisory List of Critical Devices - 1988.

PART 868 -- ANESTHESIOLOGY DEVICES

	CFR or FR Cite	Classification Name of Device	Device No. on Original List	Former device name, or Additional Information
1.	868.1200	Indwelling blood oxygen partial pressure (P_{02}) analyzer.	5	Analyzer, oxygen, Neonatal Invasive
2.	868.2375	Breathing frequency monitor.	--	Apnea monitor.
3.	868.5090	Emergency airway needle.	43	Needle, emergency airway.
4.	868.5160(a)	Gas machine for anesthesia	42	Machine, gas anesthesia/ analgesia, complete systems. Section 868. 5160(b) Gas machine for analgesia is exempt from critical device requirements.
5.	868.5240	Anesthesia breathing circuit.	19	Circuit, breathing (w/ connector, adaptor y-piece).
6.	868.5400	Electroanesthesia apparatus.	6,62	Apparatus, electroanesthesia; and stimulator, electroanesthesia.
7.	868.5440	Portable oxygen generator.	32	Generator, oxygen, portable. #See Pg 25
8.	868.5470	Hyperbaric chamber. (Monoplace)	--	---
9.	868.5610	Membrane lung for long-term pulmonary support.	41	Lung, membrane (for long-term pulmonary support).
10.	868.5650	Esophageal obturator.	2	Airway, esophageal (obturator).
11.	868.5720	Bronchial tube.	66	Tube, bronchial (w/wo connector).

12.	868.5730	Tracheal tube.	67	Tube, tracheal (w/wo connector).
13.	868.5740	Tracheal/bronchial differential ventilation tube.	68	Tube, tracheal/bronchial, differential/ventilation (w/wo connector).
14.	868.5750	Inflatable tracheal tube cuff.	27	Cuff, tracheal tube, inflatable.
15.	868.5800	Tracheostomy tube and tube cuff.	69	Tube, tracheostomy (w/wo connector).
16.	868.5810	Airway connector.	25	Connector, airway (extension).
17.	868.5830	Autotransfusion apparatus.	9	Autotransfusion apparatus.
18.	868.5895	Continuous ventilator.	73,56	Ventilator, continuous (respirator) and respirator, neonatal ventilator
19.	868.5905	Noncontinuous ventilator (IPPB).	75	Ventilator, noncontinuous (respirator).
20.	868.5915	Manual emergency ventilator.	58,70	Manual emergency ventilator; and resuscitator, pulmonary, manual.
21.	868.5925	Powered emergency ventilator.	70	Unit emergency oxygen and resuscitation.
22.	868.5935	External negative pressure ventilator.	74	Ventilator, external body negative pressure, adult (cuirass).

PART 870 - CARDIOVASCULAR DEVICES

23.	870.1025	Arrhythmia detector and alarm.	29	Detector and alarm, arrhythmia.
24.	870.1330	Catheter guide wire.	--	For use with percutaneous transluminal coronary angioplasty catheters. (See #56.)
25.	870.1360	Trace microsphere.	--	---
26.	870.1750	External programmable pacemaker pulse generator.	34	Generator, pulse, pacemaker, external, programmable.

27.	870.1800	Withdrawal-infusion pump.	54	Pump, withdrawal/ infusion.
28.	870.3250	Vascular clip.	22	Clip, vascular.
29.	870.3260	Vena cava clip.	23	Clip, vena cava.
30.	870.3300	Arterial embolization device.	--	---
31.	870.3375	Cardiovascular intravascular filter.	31	Filter, intravascular, cardiovascular
32.	870.3450	Vascular graft prosthesis of less than 6-millimeters diameter.	47,52	Prosthesis, arterial graft synthetic, and prosthesis vascular graft.
33.	870.3460	Vascular graft prosthesis of 6 milli-meters and greater diameter.	47,52	Prosthesis, arterial graft synthetic, and prosthesis, vascular graft.
34.	870.3470	Intracardiac patch or pledget made of poly-propylene. polyethylene polyethylene tere-phthalate, or polytetra-fluoroethylene.	--	---
35.	870.3535	Intra-aortic balloon and control system.	10	Balloon, intra-aortic, and control system.
36.	870.3545	Ventricular bypass (assist) device.	15	Bypass, ventricular (assist).
37.	870.3600	External pacemaker Pulse generator.	33	Generator, pulse, pacemaker, external.
38.	870.3610	Implantable pacemaker pulse generator.	35	Generator, pulse, pace-maker, implantable.
39.	870.3620	Pacemaker lead adaptor.	--	---
40.	870.3650	Pacemaker polymeric mesh bag.	--	---

41.	870.3670	Pacemaker charger.	--	---
42.	870.3680	Cardiovascular permanent or temporary pacemaker, electrode.	30	Electrode, pacemaker, permanent and temporary
43.	87O.3700	Pacemaker programmers.	--	---
44.	870.3710	Pacemaker repair or replacement material.	--	---
45.	870.3800	Annuloplasty ring.	--	---
46.	870.3850	Carotid sinus nerve stimulator.	--	---
47.	870.3925	Replacement heart valve.	71	Valve, heart replacement.
48.	870.4320	Cardiopulmonary bypass pulsatile flow generator.	--	---
49.	870.4350	Cardiopulmonary bypass oxygenator.	44	Oxygenator, cardiopulmonary.
50.	870.4360	Nonroller-type cardiopulmonary bypass blood pump.	13	Blood pump, cardiopulmonary bypass, non-roller.
51.	870.4370	Roller-type cardiopulmonary bypass blood pump.	14	Blood pump, cardiopulmonary bypass roller type.
52.	870.5200	External cardiac compressor.	24,57	Compressor, external, cardiac powered, and resuscitator, cardiac mechanical.
53.	870.5225	External counter-pulsating device.	26	Counter-pulsating device, external.
54.	870.5300	DC-defibrillator (including paddles).	28	Defibrillator, DC-powered (including paddles).

55.	870.5550	External transcutaneous cardiac pacemaker (noninvasive).	45	Pacemaker, cardiac, external transcutaneous.
56.	---	Percutaneous transluminal coronary angioplasty (PTCA) balloon dilation catheter.	--	Premarket approval device.
57.	---	Automatic Implanted Cardioverter Defibrillator System.	--	Premarket approval device.

PART 872 -- DENTAL DEVICES

58.	872.3640	Endosseous implant.	--	---

PART 874 -- EAR, NOSE, AND THROAT DEVICES

59.	874.3620	Ear, nose and throat synthetic polymer material.	--	---
60.	874.3695	Mandibular implant facial prosthesis.	--	---
61.	874.3730	Laryngeal prosthesis (Taub design).	49	Prosthesis, Laryngeal
62.	874.3820	Endolymphatic shunt	--	---
63.	874.3850	Endolymphatic shunt tube with valve.	--	---
64.	874.3930	Tympanostomy tube with semipermeable membrane	--	---
65.	---	Ear, nose, throat natural polymer - collagen material.	--	Pre-Amendments Device; not classified.

PART 876 -- GASTROENTEROLOGY-UROLOGY DEVICES

66.	876.3350	Penile inflatable implant.	--	---

66a	876.3630	Penile rigidity implant	--	---
67.	876.5270	Implanted electrical urinary continence device.	--	---
68.	876.5540	A-V shunt cannula.	--	Included in blood access device and accessories.
69.	876.5630 #	Peritoneal dialysis system and accessories.	46	Peritoneal dialysis system, automatic delivery
70.	876.5820 #	Hemodialysis system and and accessories. Dialysate concentrate Hollow fiber capillary dialyzers Disposable dialyzers High permeability dialyzers Parallel flow dialyzers Single needle dialysis set Dialysate delivery system	36	Dialysate concentrate added.

 # See charts showing the critical/noncritical breakdown of peritoneal and hemodialysis systems on pages 21 and 22 of Attachment B.

70A	876.5860 #	High permeability hemodialysis system.	36	Dialysate concentrate added.
71.	876.5870	Sorbent hemoperfusion system.	7	Apparatus, hemoperfusion, sorbent.
72.	876.5880	Isolated kidney perfusion and transport system and accessories.	--	---
73.	876.5955	Peritoneo-venous shunt.	--	---
74.	46 FR 7566 (1/23-/81)	Urethral sphincter prosthesis.	51	Prosthesis, urethra sphincter; device-not known to be in commercial distribution.
75.	46 FR 7566 (1/23/81)	Urethral replacement	55	Replacement, urethral. Device not known to be in commercial distribution.

PART 878 -- GENERAL AND PLASTIC SURGERY DEVICES

(The following are class III devices. See 21 U.S.C. 360j(l).)

76.	42 FR 63474 (12/16/77)	Absorbable surgical sutures.	--	Class III transitional device.
77.	42 FR 63474 (12/16/77)	Nonabsorbable surgical sutures.	--	Class III transitional device.
78.	879.4520	Polytetrafluoroethylene (Teflon) injectable.	--	Class III transitional device.
79.	878.3300	Surgical mesh.	--	---
80.	878.3500	Polytetrafluoroethylene with carbon fibers composite implant material.	--	---
81.	878.3530	Inflatable breast prosthesis	--	---
82.	878.3540	Silicone gel-filled breast prosthesis.	--	---
83.	---	Implanted mammary prosthesis of composite saline and gel-filled design.		510(k) device.
84.	878.3610	Esophageal prosthesis.	48	Prosthesis, esophagus.
85.	878.3720	Tracheal prosthesis.	50	Prosthesis, trachea.
86.	878.4300	Implantable clip.	--	---
87.	878.4750	Implantable staple.	--	---
88.	---	Maxillofacial prosthesis.	--	ENT facial prosthesis, maxillofacial.

PART 880 - GENERAL HOSPITAL AND PERSONAL USE DEVICES

89.	880.5130	Infant radiant warmer.	12	Bed, radiant heat.

90.	880.5400	Neonatal incubator.	37	Incubator, neonatal ventilator.
91.	880.5410	Neonatal transport incubator.	--	---
92.	880.5725	Infusion pump.	53	Term "cardiovascular" dropped since not used in classification regulation and devices not marketed as "cardiovascular infusion pumps."
93.	--	Implanted infusion pump.	--	Premarket approval device.

PART 882 - NEUROLOGICAL DEVICES

94.	882.5030	Methyl methacrylate for aneurysmorrhaphy.	--	---
95.	882.5150	Intravascular occluding catheter.	17	Catheter, intravascular occluding.
96.	882.5200	Aneurysm clip.	20	Clip, aneurysm.
97.	882.5225	Implanted malleable clip.	--	---
98.	882.5250	Burr hole cover.	--	---
99.	882.5300	Methyl methacrylate for cranioplasty	--	---
100.	882.5320	Preformed alterable cranioplasty plate.	--	---
101.	882.5330	Preformed nonalterable cranioplasty plate.	--	---
102.	882.5360	Cranioplasty plate fastener.	--	---
103.	882.5550	Central nervous system fluid shunt and components.	59	Shunt, central nervous system fluid and components.
104.	882.5820	Implanted cerebellar stimulator.	60	Stimulator, cerebella, implanted.
105.	882.5830	Implanted diaphragmatic/ phrenic nerve stimulator.	61	Stimulator, diaphragmatic/ phrenic nerve, implanted.

106.	882.5840	Implanted intracerebral/ subcortical stimulator for pain relief.	63	Stimulator, intracerebral/ subcortical, implanted (pain relief).
107.	882.5850	Implanted spinal cord stimulator for bladder evacuation.	--	---
108.	882.5860	Implanted neuromuscular stimulator.	--	---
109.	882.5870	Implanted peripheral nerve stimulator for pain relief.	--	---
110.	882.5880	Implanted spinal cord stimulator for pain relief.	--	---
111.	882.5880	Epidural spinal electrode.	--	Component of Implanted spinal cord stimulator for pain relief (#110).
112.	882.5900	Preformed craniosynostosis strip.	--	---
113.	882.5910	Dura substitute.	--	---
114.	882.5950	Artificial embolization device.	65	Thromboemboli, intravascular (artificial embolization device).
115.	---	Lyophilized human (cadaver) dura mater.	--	Pre-Amendments device; not classified.
116.	---	Stabilized epidural spinal electrode.	--	Premarket approval device.
117.	---	Implanted intracranial pressure monitor.	--	Premarket approval device.
118.	---	Totally implanted spinal cord stimulator for pain relief.	--	Premarket approval device.

PART 884 - OBSTETRICAL AND GYNECOLOGICAL DEVICES

119.	884.5360	Contraceptive intrauterine device (IUD) and introducer.	38	Intrauterine contraceptive device (IUD) and introducer
120.	884.5380	Contraceptive tubal occlusion device (TOD) and introducer.	11 21 72	Band, tubal occlusion; Clip, tubal Occlusion; Valve, tubal occlusion.

PART 886 - OPHTHALMIC DEVICES

121.	886.3300	Absorbable implant (scleral buckling method)	--	---
122.	886.3400	Keratoprosthesis	39	Keratoprosthesis, non-custom
123.	886.3600	Intraocular lens	40	Lens, intraocular, ophthalmic; Class III transitional device.
124.	886.3920	Eye valve implant	--	---

PART 888 ORTHOPEDIC DEVICES

125.	888.3000	Bone Cap.	--	---
126.	888.3010	Bone fixation cerclage.	--	---
127.	888.3020	Intramedullary fixation rod.	--	---
128.	888.3025	Passive tendon prosthesis.	--	---
129.	888.3027	Polymethylmethacrylate (PMMA) bone cement.	--	Class III transitional device.
130.	888.3030	Single/multiple component metallic bone fixation appliances and accessories.	--	---
131.	888.3040	Smooth or threaded metallic bone fixation fastener.	--	---

132.	888.3050	Spinal interlaminal fixation orthosis.	--	---
133.	888.3060	Spinal intervertebral body fixation orthosis	--	---
134.	888.3100	Ankle joint metal/composite semi-constrained cemented prosthesis.	--	---
135.	888.3110	Ankle joint metal/polymer semi-constrained cemented prosthesis.	--	---
136.	888.3120	Ankle joint metal/polymer non-constrained cemented prosthesis.	--	---
137.	888.3150	Elbow joint metal/metal or metal/polymer constrained cemented prosthesis.	--	---
138.	888.3160	Elbow joint metal/polymer semi-constrained cemented prosthesis.	--	---
139.	888.3170	Elbow joint radial (hemi-elbow) polymer prosthesis.	--	---
140.	888.3180	Elbow joint humeral (hemi-elbow) metallic uncemented prosthesis.	--	---
141.	888.3200	Finger joint metal/metal constrained uncemented prosthesis.	--	---
142.	888.3210	Finger joint metal/metal constrained cemented prosthesis.	--	---
143.	888.3220	Finger joint metal/polymer constrained cemented prosthesis.	--	---

144.	888.3230	Finger joint polymer constrained prosthesis.	--	---
145.	888.3300	Hip joint metal constrained cemented or uncemented prosthesis.	--	---
146.	888.3310	Hip joint metal/polymer constrained cemented or uncemented prosthesis.	--	---
147.	888.3320	Hip joint metal/metal semi-constrained, with a cemented acetabular component, prosthesis.	--	---
148.	888.3330	Hip joint metal/metal semi-constrained, with an uncemented acetabular component, prosthesis.	--	---
149.	888.3340	Hip joint metal/composite semi-constrained cemented prosthesis.	--	---
150.	888.3350	Hip joint metal/polymer semi-constrained cemented prosthesis.	--	---
151.	888.3360	Hip Joint femoral (hemi-hip) metallic cemented or uncemented prosthesis.	--	---
152.	888.3370	Hip joint (hemi-hip) acetabular metal cemented prosthesis.	--	---
153.	888.3380	Hip joint femoral (hemi-hip) trunnion-bearing metal/polyacetal cemented prosthesis.	--	---
154.	888.3390	Hip joint femoral (hemi-hip) metal/polymer cemented or uncemented prosthesis.	--	---

155.	888.3400	Hip joint femoral (hemi-hip) metallic resurfacing prosthesis.	--	---
156.	888.3410	Hip joint metal/polymer semi-constrained resurfacing cemented prosthesis.	--	---
157.	888.3480	Knee joint femorotibial metallic constrained cemented prosthesis.	--	---
158.	888.3490	Knee joint femorotibial metal/composite non-constrained cemented prosthesis.	--	---
159.	888.3500	Knee joint femorotibial metal/composite semi-constrained cemented prosthesis.	--	---
160.	888.3510	Knee joint femorotibial metal/polymer constrained cemented prosthesis.	--	---
161.	888.3520	Knee joint femorotibial metal/polymer non-constrained cemented prosthesis.	--	---
162.	888.3530	Knee joint femorotibial metal/polymer semi-constrained cemented prosthesis.	--	---
163.	888.3540	Knee joint patellofemoral polymer/metal semi-constrained cemented prosthesis.	--	---

164.	888.3550	Knee joint patellofemoro-tibial polymer/metal/ metal constrained cemented prosthesis.	--	---
165.	888.3560	Knee joint patellofemoro-tibial polymer/metal/ polymer semi-constrained cemented prosthesis.	--	---
166.	888.3570	Knee joint femoral (hemi-knee) metallic uncemented prosthesis.	--	---
167.	888.3580	Knee joint patellar (hemi-knee) metallic resur-facing uncemented prosthesis.	--	---
168.	888.3590	Knee joint tibial (hemi-knee) metallic resur-facing uncemented prosthesis.	--	---
169.	888.3640	Shoulder joint metal/metal or metal/polymer constrained cemented prosthesis.	--	---
170.	888.3650	Shoulder joint metal/ polymer non-constrained cemented prosthesis.	--	---
171.	888.3660	Shoulder joint metal/ polymer semi-constrained cemented prosthesis.	--	---
172.	888.3680	Shoulder Joint glenoid (hemi- shoulder) metallic cemented prosthesis.	--	---
173.	888.3690	Shoulder joint humeral (hemi- shoulder) metallic uncemented prosthesis.	--	---

174.	888.3720	Toe joint polymer constrained prosthesis.	--	---
175.	888.3730	Toe joint phalangeal (hemi-toe) polymer prosthesis.	--	---
176.	888.3750	Wrist joint carpal lunate polymer prosthesis.	--	---
177.	888.3760	Wrist joint carpal scaphoid Polymer prosthesis.	--	---
178.	888.3770	Wrist joint carpal trapezium polymer prosthesis.	--	---
179.	888.3780	Wrist joint polymer constrained prosthesis.	--	---
180.	888.3790	Wrist joint metal constrained cemented prosthesis.	--	---
181.	888.3800	Wrist joint metal/polymer semi-constrained cemented prosthesis.	--	---
182.	888.3810	Wrist joint ulnar (hemi-wrist) polymer prosthesis.	--	---

PERITONEAL DIALYSIS SYSTEMS AND ACCESSORIES

INDIVIDUAL DEVICE	COMPONENT	ACCESSORY	CRITICAL	
			YES	NO
Semi-auto Peritoneal Dialysis System			X	
Auto. Peritoneal Dialysis System			X	
Single-Use Peritoneal Catheter			X	
Long-Term Peritoneal Catheter			X	
		Stylet		X
		Trocar		X
		Obturator		X
		Disposable Administration Set	X	
		Peritoneal Dialysate Fileter		X

As of this time, the following peritoneal dialysate products are considered drugs and are registered by the CDER: sterile prepackaged dialysate and dialysate solutions for peritoneal dialysis.

HEMODIALYSIS SYSTEMS AND ACCESSORIES

INDIVIDUAL DEVICE	COMPONENT	ACCESSORY	CRITICAL	
			YES	NO
Conventional Dialyzer			X	
Dialysate Delivery			X	
	Water Purification System		X	
	Monitor & Control Mechanisms		X	
	Alarms		X	
		Unpowered HD Chair w/o Scale		X
		Powered HD Chair w/o Scale		X
		Dialyzer Holder Set		X
		Dialysis Tie Gun & Ties		X
		Hemodialysis Start/Stop Tray		X
		Hemodialysis Concentrate	X	
Extracorporeal Blood System			X	
	Tubing		X	
	Pumps		X	
	Pressure Monitors		X	
	Air Foam or Bubble Detectors		X	
	Alarms		X	

* Water purification systems when part of the dialysis delivery system.

ATTACHMENT B-1

"SIGNIFICANT RISK DEVICES" *

ANESTHESIOLOGY

Gas machines for analgesia.

CARDIOVASCULAR

Artificial heart, permanent implant and short term use.
Coronary artery retroperfusion system.
Laser coronary angioplasty device.
Percutaneous conduction tissue ablation electrode.

DENTAL

Total temporomandibular joint (TMJ) prosthesis.
TMJ implants.
Glenoid fossa prosthesis.
Mandibular condyle prosthesis.
Interarticular disc prosthesis.
Collagen for any dental use.
Bone filling and augmentation materials.
Absorbable materials.
Subperiosteal implants.

EAR, NOSE AND THROAT

Total ossicular prosthesis replacement.

GASTROENTEROLOGY AND UROLOGY

Endoscope and/or accessories.
Extracorporeal hyperthermia system.
Extracorporeal photophersis system.
Extracorporeal shock-wave lithotriptor.
Mechanical/hydraulic incontinence devices.

* Defined according to 21 CFR 812.3 (m), Definitions for Investigational Device Exemptions. Significant risk devices that are also critical devices are included in the preceding advisory list of devices that are intended for surgical implant or sustaining life in Attachment B.

GENERAL MEDICAL USE

Catheters: Cardiology - diagnostic and treatment types.
Gastroenterology and urology - biliary and urologic.
General hospital - long-term percutaneous, implanted, subcutaneous and intravascular.

Collagen implant material for use in orthopedics and plastic surgery.
Lasers for use in Ob/Gyn, cardiology, gastroenterology, urology, pulmonary, ophthalmology and neurology. Tissue adhesives for use in neurology, gastroenterology, ophthalmology, general and plastic surgery, and cardiology.

GENERAL AND PLASTIC SURGERY

Absorbable hemostatic agents.
Artificial skin.
Injectable silicone.
Silicon gel filled angelchik reflux valve.
Silicon gel filled chin prosthesis.

OBSTETRICS AND GYNECOLOGY

Cervical dilator.
Chorionic villus sampling catheter, phase II (pregnancy continued to term).
Contraceptive devices: cervical cap, diaphragm, and sponge.
Silicone gel filled testicular prosthesis.

OPHTHALMICS

Extended wear contact lens.
Retinal reattachment systems: sulfur hexafluoride, silicone oil, tacks, perfluropropane.

ORTHOPEDICS

Implantable ligament prostheses.
Bone growth stimulator.
Calcium tri-phosphate/hydroxyapatite ceramics.
Xenografts

RADIOLOGY

Hyperthermia systems and applicators.

SUPPLEMENTAL INFORMATION

* With regard to portable oxygen generators, the molecular sieve, or oxygen concentrator device, is not considered a critical device for purposes of applying the GMP, when it is intended for home respiratory therapy use.*

ATTACHMENT C

MODEL WARNING LETTER
(GMPs and MDR)

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RESPONSIBLE INDIVIDUAL, TITLE
ESTABLISHMENT NAME
ESTABLISHMENT'S COMPLETE ADDRESS

Dear (Addressee):

During an inspection of your establishment located in (city, state), on (dates), our investigator(s) determined that your establishment manufactures (generic type of device). (Generic name of device) are devices as defined by Section 201(h) of the Federal Food, Drug, and Cosmetic Act (the Act).

The above-stated inspection revealed that these devices are adulterated within the meaning of Section 501(h) of the Act, in that the methods used in, or the facilities or controls used for manufacturing, packing, storage, or installation are not in conformance with the Quality System regulation for medical devices, as specified in Title 21, Code of Federal Regulations (CFR), Part 820, as follows:

1. Failure to conduct planned and periodic audits of the quality assurance program in accordance with written procedures. For example, no audits of the quality assurance program have been performed for at least 3 years.

2. Failure to investigate the failure of a device to meet performance specifications after a device has been released for distribution, and to make a written record of the investigation including conclusions and follow-up. For example, there are no records of failure investigations for Model ____, S/N ____, and Model ___, S/N ____, which were returned because they did not operate properly.

3. Failure to maintain device history records for Model ___ to demonstrate that the devices are manufactured in accordance with the device master record.

4. Failure to immediately review, evaluate and investigate any complaint pertaining to injury, death, or any hazard to safety. For example, there is no record of the investigation of a report that a child's death associated with the use of Model ___ at the Community Medical Center on/or about February 8, 1997.

Additionally, the above stated inspection revealed that your devices are misbranded within the meaning of Section 502(t)(2) of the Act, in that your establishment failed to submit information to the Food and Drug Administration as required by the Medical Device Reporting (MDR) Regulation, as specified in 21 CFR Part 803. Specifically, you failed to submit an MDR report to FDA after receiving information which reasonably suggested that one of your commercially distributed devices may have caused or contributed to a death. The February 8, 1997, incident report from the Community Medical Center in which a child standing in a crib fell over, caught his head in a "Y" formed by the crib rail and end post, and died, should have been reported as a death.

This letter is not intended to be an all-inclusive list of deficiencies at your facility. It is your responsibility to ensure adherence to each requirement of the Act and regulations. The specific violations noted in this letter and in the FDA Form 483 issued at the conclusion of the inspection may be symptomatic of serious underlying problems in your establishment's manufacturing and quality assurance systems. You are responsible for investigating and determining the causes of the violations identified by the FDA. If the causes are determined to be systems problems, you must promptly initiate permanent corrective actions.

Federal agencies are advised of the issuance of all Warning Letters about devices so that they may take this information into account when considering the award of contracts. Additionally, no premarket submissions for Class III devices to which the Quality System/GMP deficiencies are reasonably related will be cleared or approved until the violations have been corrected. Also, no requests for Certificates to Foreign Governments will be approved until the violations related to the subject devices have been corrected.

You should take prompt action to correct these deviations. Failure to promptly correct these deviations may result in regulatory action being initiated by the Food and Drug Administration without further notice. These actions include, but are not limited to, seizure, injunction, and/or civil penalties.

Please notify this office in writing within 15 working days of receipt of this letter, of the specific steps you have taken to correct the noted violations, including an explanation of each step being taken to identify and make corrections to any underlying systems problems necessary to assure that similar violations will not recur. If corrective action cannot be completed within 15 working days, state the reason for the delay and the time within which the corrections will be completed.

Your response should be sent to (name), Compliance Officer, Food and Drug Administration, (street address), (city, state & zip code).

Sincerely yours,

District Director
_____ District

ATTACHMENT C

FOR USE WHEN FOLLOWING THE ENFORCEMENT STRATEGY FOR ESTABLISHMENTS WITH REPEATED VIOLATIVE INSPECTIONS (Part V, A.4.c.).

MODEL WARNING LETTER
(GMP's and MDR)

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RESPONSIBLE INDIVIDUAL, TITLE
ESTABLISHMENT NAME
ESTABLISHMENT'S COMPLETE ADDRESS

Dear (Addressee):

During an inspection of your establishment located in (city, state), on (dates), our investigator(s) determined that your establishment manufactures (generic type of device). (Generic name of device) are devices as defined by Section 201(h) of the Federal Food, Drug, and Cosmetic Act (the Act).

The above-stated inspection revealed that these devices are adulterated within the meaning of Section 501(h) of the Act, in that the methods used in, or the facilities or controls used for manufacturing, packing, storage, or installation are not in conformance with the Good Manufacturing Practice (GMP) for Medical Devices Regulation, as specified in Title 21, Code of Federal Regulations (CFR), Part 820, as follows:

1. Failure to conduct planned and periodic audits of the quality assurance program in accordance with written procedures. For example, no audits of the quality assurance program have been performed for at least 3 years.

2. Failure to investigate the failure of a device to meet performance specifications after a device has been released for distribution, and to make a written record of the investigation including conclusions and follow-up. For example, there are no records of failure investigations for Model ____, S/N ____, and Model __, S/N ____, which were returned because they did not operate properly.

3. Failure to maintain device history records for Model ___ to demonstrate that the devices are manufactured in accordance with the device master record.

4. Failure to immediately review, evaluate and investigate any complaint pertaining to injury, death, or any hazard to safety. For example, there is no record of the investigation of a report that a child's death associated with the use of Model ___ at the Community Medical Center on/or about February 8, 1997.

Additionally, the above stated inspection revealed that your devices are misbranded within the meaning of Section 502(t)(2) of the Act, in that your establishment failed to submit information to the Food and Drug Administration as required by the Medical Device Reporting (MDR) Regulation, as specified in 21 CFR Part 803. Specifically, you failed to submit an MDR report to FDA after receiving information which reasonably suggested that one of your commercially distributed devices may have caused or contributed to a death. The February 8, 1997, incident report from the Community Medical Center in which a child standing in a crib fell over, caught his head in a "Y" formed by the crib rail and end post, and died, should have been reported as a death.

This letter is not intended to be an all-inclusive list of deficiencies at your facility. It is your responsibility to ensure adherence to each requirement of the Act and regulations. The specific violations noted in this letter and in the FDA Form 483 issued at the conclusion of the inspection may be symptomatic of serious underlying problems in your establishment's manufacturing and quality assurance systems. You are responsible for investigating and determining the causes of the violations identified by the FDA. If the causes are determined to be systems problems, you must promptly initiate permanent corrective actions.

Federal agencies are advised of the issuance of all Warning Letters about devices so that they may take this information into account when considering the award of contracts. Additionally, no premarket submissions for Class III devices to which the GMP deficiencies are reasonably related will be cleared until the violations have been corrected. Also, no requests for Certificates to Foreign Governments will be approved until the violations related to the subject devices have been corrected.

In order to facilitate FDA in making the determination that such corrections have been made and thereby enabling FDA to withdraw its advisory to other federal agencies concerning the award of government contracts, and to resume marketing clearance for Class III devices for which a 510(k) premarket notification or Premarket Approval application (PMA) has been submitted, and Certificates to Foreign Governments for products manufactured at [x] facility, we are requesting that you submit to this office on the schedule below[1], certification by an outside expert consultant that he/she has conducted an audit of your establishment's manufacturing and quality assurance systems relative to the requirements of the device GMP regulation (21CFR, Part 820). You should also submit a copy of the consultant's report, and certification by your establishment's Chief Executive Officer (if other than yourself) that he or she has reviewed the consultant's report and that your establishment has initiated or completed all corrections called for in the report. The attached guidance may be helpful in selecting an appropriate consultant.

The initial certifications of audit and corrections and subsequent certifications of updated audits and corrections (if required) should be submitted to this office by the following dates:

- Initial certifications by consultant and establishment -Show actual date (allow approximately six months from issuance of Warning Letter).

[1] This policy is intended to address a situation where a manufacturer has failed to maintain an adequate quality assurance system over a period of several years. Requesting certifications of compliance subsequent to the initial certification is intended to help a manufacturer institutionalize an adequate quality assurance system. Districts have the option, however, of not asking for subsequent reports or varying the period over which subsequent reports may be requested.

- Subsequent certifications-Show actual date(s). You may ask for annual reports for two years after the follow-up inspection.

You should take prompt action to correct these deviations. Failure to promptly correct these deviations may result in regulatory action being initiated by the Food and Drug Administration without further notice. These actions include, but are not limited to, seizure, injunction, and/or civil penalties.

Please notify this office within 15 days of receipt of this letter, of the specific steps you will be taking to comply with our request.

Your response should be sent to (name), Compliance Officer, Food and Drug Administration, (street address), (city, state & zip code).

Sincerely yours,

District Director
_____ District

The following guidance was originally published in the CDRH, Office of Compliance Industry Letter No. 2, dated July 6, 1993.

SELECTING A CONSULTANT ?

As the number of consultants has increased in the past few years, so too has our concern about their qualifications and the quality of their work. While most consultants accurately and honestly promote their capabilities, we believe the device industry should exercise diligence in the selection of a consultant. It is very disappointing to see a company which is experiencing serious problems go to the expense of hiring a consultant who fails to constructively contribute to the restoration of the company's regulatory health.

Of course, FDA cannot recommend or endorse a particular consultant, but we can offer some criteria that should be considered when selecting one. You should first determine what type of consultant you need. There are basically three types of consultants: regulatory, quality, and technical. A regulatory consultant is one that will specialize in 510(k) and PMA issues, GMP's and/or device labeling. A quality consultant is adept at GMP auditing, and writing and revising procedures. The technical consultant basically knows how to find problems and fix them. In some cases a company may need the services of one or more of these consultants. The ideal consultant would be highly qualified in all three of these areas. Since we in compliance deal most with GMP issues, we have identified some factors that we recommend you consider when selecting a quality consultant, but these factors may have applicability for the other types of consultants also:

- How long has the consultant worked with the device (not drug) GMP regulation?
- Is his/her knowledge current?
- Does he/she know what CDRH's "current" policies and interpretations are for device GMP's?
- Does the consultant sponsor/participate in training courses?
- Is he/she frequently asked to give presentations at FDA/industry sponsored seminars? What have been the reactions to these presentations?
- One of the primary attributes of a good consultant is to be a "good communicator". He/she must be able to communicate problems and provide solutions in a clear, concise manner, and in such a way that the company knows how to perform corrections the "right" way, the first time.
- Has he/she been deposed and/or testified as an expert witness, either for the FDA or for industry?
- Obtain a listing of the consultant's clients over the last several years. Check these references!
- What types of certifications does the consultant have, i.e., Is the certification recognized by professional societies, etc?

We believe that a little homework in identifying and selecting a consultant will have long term payoffs for any company.

ATTACHMENT D

FINAL - DESIGN CONTROL INSPECTIONAL STRATEGY

MARCH, 1997

Effective Date: June 1, 1997 through June 1, 1998

IMPORTANT NOTE: 21 CFR 820.30 DESIGN CONTROL REQUIREMENTS OF THE QUALITY SYSTEM REGULATION ARE BY LAW IN EFFECT AS OF JUNE 1, 1997.

Instructions

1. This is intended to be an information gathering document. Information that cannot be gathered indicates an item or area in need of improvement. This document should not be used from June 1, 1997 through June 1, 1998 as an enforcement tool but will be officially attached to the manufacturer's Establishment Inspection Report (EIR) for historical purposes.

2. Since this is an information gathering document, the normal collection of documentation to establish a nonconformance will not be required. However, the types of documents reviewed should be addressed in the responses to the questions.

3. A copy of this completed Design Control Inspectional Strategy will be known as the Design Control Inspectional Strategy Report (the report). The original report will officially become a part of the manufacturer's EIR. One copy of the report will be issued to the manufacturer at the time of the inspection close-out meeting. A second copy of the report will be submitted with the EIR to the Center for Devices and Radiological Health, HFZ-306.

4. Since this report will be a part of the manufacturer's EIR, it will be available to the public through the Freedom of Information Act (FOIA). Any trade secret or proprietary information that this report may contain should be specifically noted by the FDA investigator in cooperation with the manufacturer to aid in determining where redaction may be required for purposes of filling FOIA requests.

5. Most sections of the regulation have a clause requiring specific documentation of the person(s) involved, dates, identification of project, etc. that is not identified as a requirement in section 820.30(j) Design History File (DHF). Since these specific DHF requirements are only addressed in the individual sections, areas of improvement would be cited in those respective sections and not in section 820.30(j), Design History File.

820.30(a) General

Regulatory Requirements

1. Each manufacturer of any class III or class II device, and the class I devices listed in paragraph

(a)(2) of this section, shall establish and maintain procedures to control the design of the device in order to ensure that specified design requirements are met.

2. The following class I devices are subject to design controls:

   i. Devices automated with computer software; and
   ii. The devices listed in the chart below.

Section	Device
868.6810	Catheter, Tracheobronchial Suction
878.4460	Glove, Surgeon's
880.6760	Restraint, Protective
892.5650	System, Applicator, Radionuclide, Manual
892.5740	Source, Radionuclide Teletherapy

Questions

1. Select and describe a device that was subject to design controls and indicate whether it was an original design or a modification to an existing design. (This includes any changes to an existing device that occurred after June 1, 1997.)

2. For the device selected, identify at what stage in the design and development effort design controls were applied. If the design and development effort has not been completed, identify the current status of the design and development effort. (Note, if the design and development effort was initiated prior to June 1, 1997, identify the date the design effort was initiated.)

820.30(b) Design and Development Planning

Regulatory Requirements

Each manufacturer shall establish and maintain plans that describe or reference the design and development activities and define responsibility for implementation. The plans shall identify and describe the interfaces with different groups or activities that provide, or result in, input to the design and development process. The plans shall be reviewed, updated, and approved as design and development evolves.

Questions

1. Summarize the format and structure of the design and development planning process for the chosen device. (If the manufacturer has established a written procedure used to control or describe their overall design process, attach a copy. Note, this is not a specific requirement under the regulation but may be useful during the one year learning phase.)

2. Determine if the plan describes or references and assigns responsibility for the implementation of each of the following:

   - Risk Analysis
   - Design Input
   - Design Output
   - Design Review
   - Design Verification
   - Design Validation
   - Design Transfer
   - Design Changes
   - Interfaces

3. Determine whether the plan has been reviewed, updated, and approved as design and development evolves.

820.30(c) Design Input

Regulatory Requirements

Each manufacturer shall establish and maintain procedures to ensure that the design requirements relating to a device are appropriate and address the intended use of the device, including the needs of the user and patient. The procedures shall include a mechanism for addressing incomplete, ambiguous, or conflicting requirements. The design input requirements shall be documented and shall be reviewed and approved by a designated individual(s). The approval, including the date and signature of the individual(s) approving the requirements, shall be documented.

Questions

1. Summarize the manufacturer's written procedure(s) for identification and control of design input. From what sources are design inputs sought?

2. Do design input procedures cover the relevant aspects, such as: (Mark all that apply and list additional aspects.)

   - intended use
   - user/patient/clinical
   - performance characteristics
   - safety
   - limits and tolerances
   - risk analysis
   - toxicity and biocompatibility
   - electromagnetic compatibility (EMC)
   - compatibility with accessories/auxiliary devices
   - compatibility with the environment of intended use

- human factors
- physical/chemical characteristics
- labeling/packaging
- reliability
- statutory and regulatory requirements
- voluntary standards
- manufacturing processes
- sterility
- MDRs/complaints/failures and other historical data
- design history files (DHFs)

3. For the specific design covered, how were the design input requirements identified, reviewed for adequacy, and documented?

4. Summarize the process for resolving incomplete, ambiguous, or conflicting requirements. For the design reviewed, identify any incomplete, ambiguous, or conflicting requirements that were not resolved per the manufacturer's procedures.

5. Summarize how general input information and requirements are translated to specific requirements or specifications.

6. Summarize how the design input addresses the user interface: the hardware (and software, if applicable) features that define the interactions between users and equipment. For example, are exploratory studies (e.g., interviews), usability studies (e.g., user evaluation, task analysis, risk analysis, or workload analysis), or any combination thereof conducted? Describe the method(s) used.

7. Summarize the methods used for any risk analysis done at the design input stage.

8. For an electrically powered device, where electromagnetic compatibility (EMC) should have been considered in the design, determine the following:

   - How has EMC been addressed with regard to the device use environment? For example, the interface with other medical devices or the interference from other consumer products.

   - If complaint or failure data for similar devices distributed by the manufacturer indicated EMC problems, did the manufacturer use this information in establishing the design requirements for the new device?

   - Identify any relevant EMC standards used as a part of the design input process.

9. Who is responsible for review and approval of the design input requirements? Has approval been documented?

820.30(d) Design Output

Regulatory Requirements

Each manufacturer shall establish and maintain procedures for defining and documenting design output in terms that allow an adequate evaluation of conformance to design input requirements. Design output procedures shall contain or make reference to acceptance criteria and shall ensure that those design outputs that are essential for the proper functioning of the device are identified. Design output shall be documented, reviewed, and approved before release. The approval, including the date and signature of the individual(s) approving the output, shall be documented.

Questions

1. How do the design and development procedures identify and define design output?

2. Explain how design outputs are expressed in terms that allow comparison to design inputs.

3. How are the characteristics essential to the proper functioning of the device identified in the design output?

4. Provide some examples of acceptance criteria for design output.

5. Who is responsible for review and approval of the design output prior to release? Has approval been documented?

820.30(e) Design Review

Regulatory Requirements

Each manufacturer shall establish and maintain procedures to ensure that formal documented reviews of the design results are planned and conducted at appropriate stages of the device's design development. The procedures shall ensure that participants at each design review include representatives of all functions concerned with the design stage being reviewed and an individual(s) who does not have direct responsibility for the design stage being reviewed, as well as any specialists needed. The results of a design review, including identification of the design, the date, and the individual(s) performing the review, shall be documented in the design history file (the DHF).

Questions

1. Summarize the manufacturer's procedure(s) that defines and controls formal design reviews. Discuss any alternative terminology for design review used by the manufacturer pertaining to design review activities.

2. What has the manufacturer identified as appropriate stages of design and development for formal

design reviews.

3. What documentation exists to demonstrate that the manufacturer has conducted formal design reviews at the identified stages?

4. What mechanisms in the design review procedure exist to assure that formal design reviews are comprehensive and systematic? How are problems or action items identified during a design review handled?

5. Select a problem or action item that was identified during a formal design review and summarize its disposition if completed.

6. How does the design review procedure(s) assure identification of organizational functions which should be represented at formal design reviews?

7. Review the documentation from at least one formal design review and verify that the appropriate organizational functions participated, including at least one individual not having direct responsibility for the design stage being reviewed. If not, explain.

8. How does the design review procedure(s) assure that identified design inputs are addressed by design outputs? How is this documented?

820.30(f) Design Verification

Regulatory Requirements

Each manufacturer shall establish and maintain procedures for verifying the device design. Design verification shall confirm that the design output meets the design input requirements. The results of the design verification, including identification of the design, method(s), the date, and the individual(s) performing the verification, shall be documented in the DHF.

Questions

1. Briefly describe the manufacturer's procedure(s) for design verification.

2. Provide example(s) of significant point(s) during the design process where verifications were conducted. (Verification may occur at one point or multiple points.)

3. Choose one specific input requirement. Describe the verification methods and activities used to confirm that the input requirement has been fulfilled by the design output.

4. In terms of human factors or user interface, what verification methods have been employed to confirm that the input requirements are met (e.g., usability testing such as prototyping, simulations).

5. Does the verification data show that output meets input? If output does not meet input, provide an example of how the manufacturer resolved the discrepancy.

6. Does the design history file identify the methods of design verification, dates, and individuals performing verification activities?

820.30(g) Design Validation

Regulatory Requirements

Each manufacturer shall establish and maintain procedures for validating the device design. Design validation shall be performed under defined operating conditions on initial production units, lots, or batches, or their equivalents. Design validation shall ensure that devices conform to defined user needs and intended uses and shall include testing of production units under actual or simulated use conditions. Design validation shall include software validation and risk analysis, where appropriate. The results of the design validation, including identification of the design, method(s), the date, and the individual(s) performing the validation, shall be documented in the DHF.

Questions

1. Summarize the design validation procedure(s).

2. Briefly describe at least one design validation activity performed on production or equivalent devices.

3. If design validation activities were performed on non-production devices, then how were the devices shown to be equivalent to production devices?

4. What evaluations (clinical or other activities) were performed to assist in validating that the device design meets defined user need and intended uses? Design validation activities may include:

   - Clinical studies approved via Internal Review Boards (IRBs) and Investigational Device Exemptions (IDEs), or IRB alone for non-significant devices.
   - 510(k) historical database search.
   - Clinical evaluations in clinical or nonclinical settings.
   - Literature searches. •Review of labels and labeling, packaging, and other historical product information.

5. Describe the actual or simulated use conditions under which the finished device was evaluated to validate the design.

6. How did the manufacturer resolve discrepancies encountered during design validation activities? Provide an example of an unresolved discrepancy, if any, and the manufacturer's justification for leaving the discrepancy unresolved.

7. If the device contains software, explain the method(s) by which the software has been validated.

8. Give a few examples of how risks have been identified, analyzed, and reduced. Were tools such as Failure Mode Effects Analysis (FMEA), Failure Mode Effects and Criticality Analysis (FMECA), Fault Tree Analysis, etc. utilized? Provide examples of any risks that were not resolved.

9. Based upon the review of the design history file, does the documentation identify the design, methods of design validation, dates, and individuals performing design validation activities? Explain any discrepancies.

820.30(h) Design Transfer

Regulatory Requirements

Each manufacturer shall establish and maintain procedures to ensure that the device design is correctly translated into production specifications.

Questions

1. Describe the procedure(s) for transferring the design output for the device from design to manufacturing.

2. Select at least one design feature and review the transfer process to confirm that procedures from design transfer were followed and design output was correctly translated into production specifications.

820.30(i) Design Changes

Regulatory Requirements

Each manufacturer shall establish and maintain procedures for the identification, documentation, validation or where appropriate verification, review, and approval of design changes before their implementation.

Questions

1. When in the design process does the firm begin to control design changes?

2. What criteria in the design change procedure(s) are used to control changes to approved elements of the design?

3. Does the design change procedure(s) address when verification of changes is sufficient in lieu of validation of changes?

4. For design changes that were verified but not validated, what was the justification that validation was unnecessary?

5. Who is authorized to review and approve design changes before they are implemented, and how is the approval documented?

820.30(j) Design History File

Regulatory Requirements

Each manufacturer shall establish and maintain a DHF for each type of device. The DHF shall contain or reference the records necessary to demonstrate that the design was developed in accordance with the approved design plan and the requirements of this part.

Questions

1. How does the manufacturer maintain and retain the contents of the design history file?

2. List the key elements in the manufacturer's design history file and explain how these elements support that the design was developed in accordance with the design plan and procedures.

3. If more than one device shares a common design history file, how does the firm identify each device within the family or group having common design characteristics?

AREAS OF NEEDED IMPROVEMENT

Investigator(s) Signature_____ Date _____

ATTACHMENT E

Date: July 2, 1997

To: Compliance Officers

From: Louis J. Kaufman,
Division of Enforcement I, Office of Compliance

Subject: Original GMP/Quality System Regulation Wording

The Case Experts (Crosscutters) and GMP Crosscutter, with input from others, including OCC, have discussed how to use the QS Regulation as it relates to inspections that were performed prior to June 1, 1997 (the effective date of the regulation) and offer the following OC policy:

ALL DOCUMENTS (Inspections Completed Prior to 06/01/97)

1. Make a determination as to whether the observation listed on the FDA Form 483 or the records collected can support a cite under the old (1978) GMP's **AND/OR** under the new (1997) Quality System regulation.

2. If the observation/record review is a violation of the 1978 GMP, but not a violation of the Quality System regulation: NOTE THIS IN YOUR REVIEW, BUT DO **NOT** INCLUDE THIS IN ANY OTHER DOCUMENT. There are only a few minor GMP cites that were not carried over to the Quality System regulation. A listing of those GMP cites which have not been included in the Quality System regulation and other GMP examples related to this memorandum will be included at a later date.

3. If the observation/record review is **NOT** a violation of the 1978 GMP, but **IS** a violation of the Quality System regulation: NOTE THIS IN YOUR REVIEW, BUT DO **NOT** INCLUDE THIS IN ANY OTHER DOCUMENT.

4. If the observation/record review is a violation of **BOTH** the 1978 GMP **AND** the Quality System regulation: NOTE THIS IN YOUR REVIEW **AND** INCLUDE THIS VIOLATION IN ANY CORRESPONDENCE/ACTION AS FOLLOWS:

WARNING LETTERS

If the observation/record review meets the criteria of #4 (it is a violation of **BOTH** the 1978 GMP **AND** the Quality System regulation), it should be placed in the Warning Letter as follows:

1. Wording should be from the 1978 GMP.

2. The cite (21 CFR 820.XXX) should be from the old GMP.

3. At the end of the cite, add the following sentence: "This would also be a violation of the Quality System regulation, 21 CFR 820.XXX."

Yes, we recognize that this will require more work on the part of the CSO reviewing the recommendation. We also recognize that we may have to do this for a year or two, because investigators will be reviewing records, i.e., complaints, production, etc., that document activities prior to June 1, 1997. However, if the inspection is performed after June 1, 1997, and the investigators do not find any observations relating to records or activities prior to June 1, 1997, you can just use the Quality System Regulation.

REGULATORY/ADMINISTRATIVE ACTIONS (SEIZURES, INJUNCTIONS, ETC., AND CIVIL MONEY PENALTY)

If the observation/record review meets the criteria of #4 (it is a violation of **BOTH** the 1978 GMP **AND** the Quality System regulation), it should be placed in the action as follows:

1. The heading containing the 21 U.S.C. 351(h) cite should explain that the cites are violations of the 1978 GMP and that they would also be violations of the Quality System regulation.

2. Wording should be from the 1978 GMP.

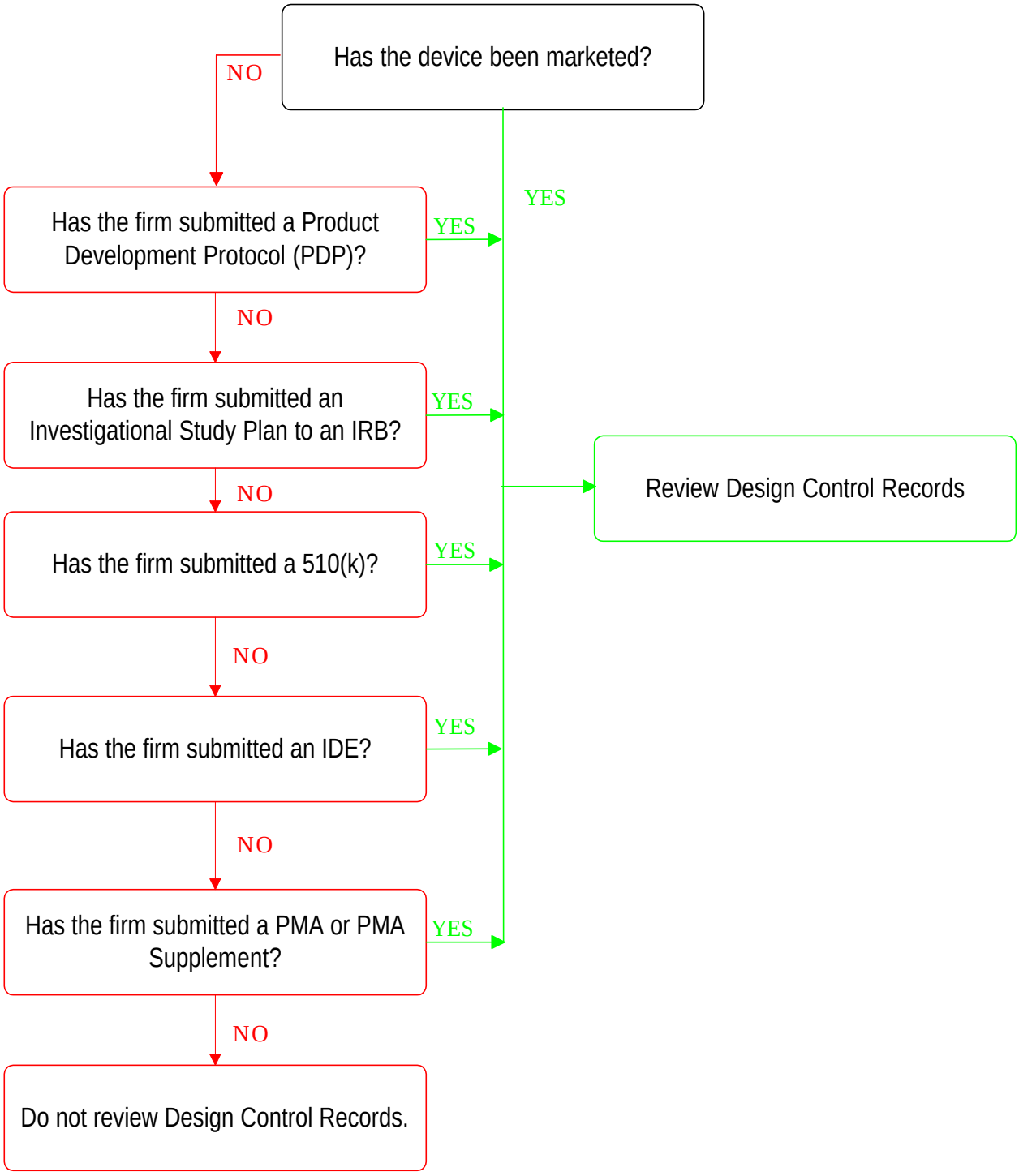
3. The cite (21 CFR 820.XXX) should be from the old GMP.

Additionally, the Letter to the U.S. Attorney (seizures), the Letter to the Department of Justice (injunctions), etc., will have to include a statement re: the violations noted under the 1978 GMP would also be violations of the Quality System regulation.

If you have any questions please contact Chris Nelson at (301) 594-4611, ext. 134, Karen Stutsman at (301) 594-4646, ext. 111, Andrea Latish at (301) 594-4611, ext. 135, or Louis Kaufman at (301) 594-4598, ext. 179.

Decision Chart A

Review of Design Control Records *



* Investigators may review design control records at any stage in the design and development process when a manufacturer consents to their review.

Decision Chart B

Review of Design Control Records for Device "Changes"