APPENDIX N

OPERATING PROCEDURES

I. Radiation Safety Program

Industrial Radiography Licensees are required to develop, implement, and maintain a comprehensive radiation safety program to help insure the protection of the public and licensee personnel who are occupationally exposed to ionizing radiation. As a minimum, the Radiation Safety Program shall include the following elements:

- Description of the organizational structure and the management commitment for ensuring implementation of the Radiation Safety Program (See Item 25)
- Policy statement and requirement to maintain radiation dose ALARA (Appendix A)
- Description of equipment and facilities adequate to protect personnel, the public, and the environment (See Item 16)
- Conduct of licensed activities by individuals qualified by training and experience (See Item 10)
- Written operating and emergency procedures (See Items 22 and 23)
- Program to routinely inspect the job performance of radiographic personnel
- Records management (See Item 24)

II. Operating Procedures

A. Operating procedures must be developed, implemented, and maintained current. The purpose of operating procedures is to provide radiography personnel with specific instructions and guidance on how to safely perform all operations that are required for industrial radiography, including device storage and transportation. A complete copy of the Operating Procedures must be submitted to the Department as part of the application

B. It is not necessary for operating procedures to be specific to a particular make and model of radiographic device, source exchanger, or survey instrument. Procedures submitted to the Department should provide sufficient guidance and instruction to radiography personnel for each specific type of device. For example, a single operating procedure for crank-out radiographic device may be submitted regardless of the manufacturer; provided specific notes of caution and instructions are included for unique equipment or instruments.

C. Specific procedures are required for performing source exchanges, including those at temporary jobsites or field stations, and in a permanent radiographic

installation. The procedures should contain warnings of areas of concern during source exchanges. Recent incidents of sources becoming dislodged from the shielded position indicate the importance of training personnel in the appropriate techniques. Procedures must require the use of radiation survey instruments, personnel monitoring, and radiation surveys during and after movement of sources.

D. Specific procedures are required for inspecting and maintaining radiographic devices, source changers, associated equipment, transport and storage containers, and survey instruments. Inspection and maintenance must be performed at intervals not to exceed 3 months, or before the first use thereafter, to ensure the proper functioning of components important to safety. The licensee must also have procedures necessary to maintain the Type B packaging used to transport radioactive materials, ensure that Type B packages are shipped properly, and maintain Type B packages in accordance with the Certificate of Compliance (COC) issued by NRC or other agencies approving such transport packages.

If equipment problems are found, the equipment must be withdrawn from service until repaired.

These procedures are intended to allow the licensee to evaluate equipment used in radiography for safe continued use, to provide a record of this evaluation, and to guidance in performing maintenance. Equipment found to be unsuitable for service must be withdrawn until repair and an evaluation for return to service is made. These procedures may be based on the manufacturer's recommendations and are to be specific to the equipment. Procedures are also required for Type B packaging used to transport radioactive materials. These procedures are to be used for shipping and maintenance, and may be properly drawn from the manufacturer's procedures and information.

E. The Operating Procedures must include as a minimum, detailed instructions in the following topics:

- Appropriate handling and use of radioactive sealed sources, radiographic devices, and source changers so that no person is likely to be exposed to a radiation dose in excess of the limits prescribed in the Rules and Regulations
- Steps to take to maintain radiation dose ALARA
- Personnel monitoring and the use of personnel monitoring equipment
- Methods and occasions for conducting radiation surveys
- Instructions for controlling access to radiographic areas and performing surveillance in the immediate area during operations and use.

- Provide step-by-step instructions for using each type of radiographic device.
- Steps to maintain accountability during use
- Steps to control access to work sites
- Instructions for maintaining security during storage and transportation
- Methods and occasions for locking and securing radiographic devices, transport and storage containers and sealed sources.
- Personnel monitoring and the use of personnel monitoring equipment
- Transporting sealed sources to field locations, including packaging of radiographic devices and storage containers in the vehicles, placarding of vehicles when needed, and control of sealed sources during transportation.
- Inspection, maintenance, and operability checks of radiographic devices, radiation survey instruments, transport containers, and storage containers
- Instructions for performing source exchanges
- Maintenance of records

F. These topics must be included in the operating procedures and need not be presented in order of importance. A sequential set of procedures and instructions from the beginning to the end of the workday is an acceptable format. Instructions for non-routine operations, for example, quarterly (not to exceed 3 months) inspection and maintenance or instrument calibration, may be included as separate appendices. If a Radiographer is also assigned the responsibility to perform sealed source exchange, leak testing of sealed sources, and/or the quarterly inspection and maintenance of equipment, operating procedures and detailed instructions for performing these activities must be included.