INSPECTION PROCEDURE 87113

WELL LOGGING PROGRAMS

PROGRAM APPLICABILITY: 2800

87113-01 INSPECTION OBJECTIVES

01.01 To determine if licensed activities are being conducted in a manner that will protect the health and safety of workers and the general public.

01.02 To determine if licensed programs are being conducted in accordance with U.S. Nuclear Regulatory Commission (NRC) requirements.

87113-02 INSPECTION REQUIREMENTS

Review of the licensed activities will be commensurate with the scope of the licensee's program. A determination regarding safety and compliance with NRC requirements will be based on direct observation of work activities, interviews with workers, demonstrations by workers performing tasks regulated by NRC, and independent measurements of radiation conditions at the facility, rather than exclusive reliance on a review of records.

In reviewing the licensee's performance, the inspector should cover the period from the last inspection forward. However, issues preceding the last inspection should be reviewed if warranted by circumstances, such as incidents, noncompliance, or high radiation exposures.

Some of the following areas may not be applicable to all well logging licensees (i.e., some portions of this procedure may not be applicable if the licensee does not perform tracer studies, field flood studies, and/or store liquid waste for decay). Note that field flood studies are not licensed under 10 CFR Part 39.

02.01 Preparation. Preparation will include reviewing documents, making travel arrangements, coordinating with appropriate staff, notifying appropriate State agencies, and selecting necessary equipment. In particular, the inspector shall identify and review any license amendments issued since the last inspection and determine if the licensee has informed NRC of any

major program changes since the last inspection. The inspector shall also review the Nuclear Materials Events Database (NMED) and any regional event logs and files to determine if the licensee had any incidents or events since the last inspection.

02.02 Entrance Briefing. When the inspector arrives at the licensee's facility, he/she will inform an available senior management representative of the purpose and scope of the inspection.

02.03 General Overview

a. Organization. Evaluate by: (1) Interview cognizant licensee representatives regarding the current organization of the program. Examine the licensee's organization with respect to changes that have occurred in personnel, functions, responsibilities, and authorities since the previous inspection; and (2) Identify the reporting relationship and management structure between the licensee's executive management, the Radiation Safety Officer (RSO), and personnel to whom the RSO may have delegated certain radiation protection functions at field offices, if applicable.

b. Scope of Program. Evaluate by interviewing cognizant personnel to determine the types, quantities, and uses of byproduct material, frequency of use, staff size, etc.

c. Management Oversight. In the course of interviewing cognizant personnel, determine if management oversight is sufficient to provide the licensee staff with adequate resources and authority to administer the licensed program.

    1. RSO - Determine whether the RSO has been appointed, is named on the license, has sufficient authority, and fulfills the appropriate duties commensurate with the size and scope of licensed activities.
    2. Audits - Verify that audits are performed as required. Verify that the results of the audits are reviewed and addressed.

d. Authorized Users. Determine that only authorized individuals perform and/or supervise licensed activities. Verify that these individuals are qualified. Also verify that authorized users perform an appropriate level of supervision, as required by the license or regulations.

02.04 Walk-Through Orientation Tour. Perform a walk-through tour of the licensed facility and make general observations of the condition of the facility and licensed activities being performed.

02.05 Facilities. Verify that the facility conforms to that described in the license application; that material receipt, use, and storage areas are secured; and that the licensee uses processes or other engineering controls to maintain doses as low as is reasonably achievable (ALARA).

02.06 Equipment and Instrumentation

a. Verify that equipment and instrumentation are appropriate, operable, calibrated, adequately maintained, and conform to those described in the license.

b. Verify that the licensee has established and implemented procedures to identify and report safety component defects per the requirements of 10 CFR Part 21.

02.07 Materials

a. Receipt and Transfer of Licensed Material. Verify that the licensee is receiving packages and making transfers of licensed material in accordance with NRC and applicable U.S. Department of Transportation (DOT) regulations and license conditions.

b. Authorized Uses. Verify that the type, quantity, and use of licensed material at the licensee's facility are authorized by the license through observation of material use, discussion of activities with licensee personnel, and records review. To the extent practical, physically confirm that the licensee's inventory is complete and accurate.

c. Material Security and Control. Verify that the licensee has established procedures for maintaining security and control of licensed material, and that these procedures are understood and implemented by appropriate personnel. Verify that licensed material, in storage, in controlled or unrestricted areas, is secure from unauthorized removal or access. Verify that licensed material, not in storage, in controlled or unrestricted areas, is controlled and under constant surveillance. Verify that access to restricted areas is limited by the licensee.

02.08 Training

a. General Training. Verify that appropriate training and initial instructions are being accomplished as specified in the license and/
or regulations.

b. Operating and Emergency Procedures. Verify that operational procedures are being followed by observing licensee personnel perform tasks at selected work stations and comparison of their performance with established procedures. Also examine the licensee's emergency procedures to determine that these procedures are as approved by NRC. Through discussions with workers, verify that licensee personnel understand and implement the established procedures and are aware of procedural revisions. Document in the inspection procedures what activities what activities were observed.

When applicable, discuss with the licensee's representatives, or observe (for the higher-priority licensees), the conduct of periodic tests and drills, especially for scenarios involving fires and large releases of licensed material.

02.09 Area Radiation and Contamination Control

a. Area Surveys. Verify, through observation and by direct measurement, that the radiation levels are within the limits of 10 CFR Part 20, and that the respective areas are properly posted.

b. Leak Tests. Verify that sealed source leak tests are performed at the required frequency. Also verify that leak tests are analyzed in accordance with the license. If leak test records show contamination in excess of the regulatory requirements, verify that the licensee made appropriate notifications and removed the source from service.

c. Contamination Control. Verify that, if applicable, the licensee performs surveys for removable contamination at the required frequencies. If the licensee has had spills or other incidents of contamination exceeding the licensee's action levels, verify that the licensee has taken appropriate actions.

d. Protective Clothing. Verify that radiation workers are provided with, and wear, the appropriate protective clothing commensurate with activities being performed.

02.10 Radiation Protection

a. Radiation Protection Program. Verify that a radiation protection program commensurate with the licensee's activities is being implemented and documented, and that the program is being reviewed for content and implementation at least annually.

b. Radiation Protection Procedures. Verify that changes in the radiological protection procedures made since the last inspection are consistent with regulations and license requirements. [Note that some procedures may require prior NRC approval before the licensee can make changes.]

c. Instruments and Equipment. Verify that radiation protection instruments and equipment are operable, have the proper alarm settings (if applicable), and are calibrated and checked for appropriate response in accordance with license requirements and licensee procedures.

d. Personnel Dosimeters. Verify that personnel dosimetry devices are worn by appropriate licensee personnel, including all logging supervisors and all logging assistants, as specified in 10 CFR 39.65. Dosimetry devices appropriate to the type, energy, or emitted radiation, and the anticipated radiation fields, should have been issued to facility personnel. Verify that dosimeters are processed by a National Voluntary Laboratory Accreditation Program-approved and-accredited processor.

Verify that, pursuant to 10 CFR 19.13(b), the licensee advises each worker annually of the worker's dose as shown in records maintained by the licensee pursuant to the provisions of 10 CFR 20.2106, "Records of individual monitoring results."

02.11 Waste Management

a. Waste Storage and Disposal. Verify that radioactive waste is stored and controlled in a secure and safe manner, and that radiation levels in unrestricted areas surrounding the storage area do not exceed the limits of 10 CFR 20.1301, "Dose limits for individual members of the public." Verify that disposal of decay-in-storage waste is performed in accordance with the regulations and license conditions. (Note that licensees, other than medical, must be

specifically authorized in the license to dispose of waste by decay-in-storage.) Verify that the licensee is conducting appropriate surveys and defacing radioactive material labels before disposing of the waste.

Review the licensee's procedures and records to verify that each shipment of radioactive waste intended for offsite disposal is accompanied by a shipment manifest that includes the required information.

Review the licensee's procedures and records to verify that each package of radioactive waste intended for shipment to a licensed land disposal facility is labeled, as appropriate, to identify it as Class A, B, or C waste [in accordance with the classification criteria of 10 CFR 61.55 (Subsection III.A.2 of Appendix F to 10 CFR 20.1001-20.2401)].

b. Effluents. If the licensee uses unsealed tracer material, especially iodine, review and verify that handling equipment, monitoring equipment, and/or administrative controls are adequate to maintain radioactive effluents within the limits established by the license and other regulatory requirements and are as low as reasonably achievable (ALARA).

Evaluate the quality of the relevant procedures and the degree to which ALARA techniques are incorporated into them. Determine the extent to which process and engineering controls are used to minimize effluents.

Additional inspection requirements are specified in Inspection Procedure (IP) 87102, "Maintaining Effluents from Materials Facilities As Low As Is Reasonably Achievable (ALARA)."

c. Transfer. Verify that radioactive wastes are transferred to an authorized recipient specifically licensed to receive radioactive waste.

d. Records. Verify that records of radioactive waste storage, transfer, and disposal are maintained in accordance with the requirements of 10 CFR Part 20 and the license.

e. Financial Assurance and Decommissioning. For all licensees, including sealed source licensees, review the licensee's records relative to the safe and effective decommissioning of the facility. Verify that the records are complete, updated, and assembled appropriately, in accordance with the requirements in 10 CFR 30.35(g). Review the licensee's list of restricted areas required under 10 CFR 30.35(g)(3) and determine whether laboratories or other rooms have been released since the last inspection. If areas have been released, verify that the licensee has adequately decontaminated each room and documented the basis for releasing each room. Document the location of the released rooms in the inspection procedures, and document your findings regarding the adequacy of the licensee's decontamination.

Verify whether radiological conditions at the facility have changed since the financial assurance instrument and/or decommissioning plan was submitted such that either document needs to be changed to address the new radiological conditions. Examples of changes are radiological incidents such as spills or process upsets. Unauthorized changes by the licensee to processes, types of licensed materials, possession limits, or chemical or physical forms of licensed materials may also prompt a reevaluation of whether the financial assurance instrument and/or decommissioning plan remains sufficient. Immediately notify regional management if changes that may affect the financial assurance instrument or decommissioning plan are identified during the review process.

If a parent-company guarantee or a self-guarantee is used to ensure decommissioning financial assurance, review the licensee's financial assurance file to ensure that Part 30, Appendix A or Appendix C, requirements are met.

f. Decommissioning Timeliness. Review compliance with the Decommissioning Timeliness Rule requirements in 10 CFR 30.36(d) through (h). (NOTE: This is one area of the inspection procedures that should be completed on all inspections.) If the license to conduct principal activities has expired or has been revoked; if the licensee has made a decision to permanently cease principal activities at the site, in any separate building, or at any outdoor area; or if there has been a 24-month duration when no principal activities were conducted at the site, in any separate building, or at any outdoor area, the decommissioning timeliness requirements in 10 CFR 30.36; 10 CFR 40.42; 10 CFR 70.38; or Part 72 apply. If this is the case, complete in full the "Decommissioning Timeliness Inspection Attachment," Attachment A to Appendix A.

02.12 Transportation. Verify that the licensee's procedures and documentation are sufficient to ensure that licensed material is transported in accordance with Part 71 and DOT regulations for transportation of radioactive materials.

02.13 Posting and Labeling. Verify that the licensee has posted the appropriate documents, notices, forms, and caution signs, as required. Also verify that containers of licensed material are labeled appropriately.

02.14 Generic Communications of Information. Confirm that the licensee is receiving the applicable bulletins, information

notices, NMSS Licensee Newsletter, etc. Verify that the licensee has taken appropriate action in response to these notices.

02.15 Notifications and Reports. Determine compliance with the regulations and license requirements for notification and reports to NRC.

02.16 Special License Conditions. If applicable, review the licensee's compliance with any special license conditions.

02.17 Independent and Confirmatory Measurements. Compare and verify, on a sampling basis, survey results or data that are used by the licensee to show compliance with the regulations or license conditions. Conduct independent measurements to ascertain the radiological conditions of the facility. Conduct these independent measurements on all inspections under this IP, unless warranted by special circumstances. If independent measurements are not taken, provide a justification in the inspection procedures explaining why independent measurements were not performed. The inspector shall use radiation detection instruments calibrated at intervals not to exceed 6 months.

02.18 Year-2000 Issues. Verify that the licensee has reviewed its computer software to ensure that any potential year-2000 problems have been identified and corrected.

02.19 Exit Meeting. Conduct an exit meeting with senior licensee management and the RSO to discuss the preliminary inspection findings. The exit briefing will include any apparent violations, safety-related concerns, and unresolved items identified during the inspection. Discuss any negative Performance Evaluation Factors (PEFs) and encourage the licensee to respond to the PEFs of concern. For further guidance, refer to IP 87107, "Performance Evaluation Factors."

02.20 Post-Inspection Actions. After the inspection, the inspector shall summarize the findings with his/her NRC supervisor. This is especially important if there are, or are expected to be, controversial issues arising from the findings.
Inspectors shall also meet with regional licensing staff when any pertinent licensing issues are raised during the inspection, when inspection findings impact on any licensing actions, to discuss the licensee's PEF results, or to give feedback on how the licensee has addressed recent licensing actions. This meeting shall be documented in the inspection procedures.

Additionally, in some instances, inspection findings will warrant communication with enforcement staff, Office of Investigations staff, State liaison staff, or Federal agencies with whom NRC has Memoranda of Understanding (MOUs). Similarly, if information related to year-2000 problems and solutions is obtained, it is to be conveyed to the NMSS Year-2000 Coordinator.

The inspector will ensure that inspection findings are clearly documented, and reported to the licensee as appropriate. The inspector shall also follow the requirements of Inspection Manual Chapter (IMC) 0620, "Inspection Documents and Records," regarding

notifying the licensee that retained information is subject to public disclosure and giving the licensee the opportunity to request the information to be withheld (see IMC 0620, Section 04.06.b.).

87113-03 INSPECTION GUIDANCE

General. An examination of the licensee's records should not be considered the primary part of the inspection program. Rather, observations of activities in progress, equipment, facilities and use areas, etc., in combination with records review, are seen as better indicators of the licensee's overall radiation safety program.

Some of the requirement and guidance sections of this procedure instruct the inspector to "verify" the adequacy of certain aspects of the licensee's program. Whenever possible, verification should be accomplished through discussions, observations, and demonstrations.

In the records reviewed, look for trends such as increasing doses or contamination events. Records such as area surveys, waste disposal, receipt and transfer of radioactive materials, training, and utilization logs may be examined randomly until the inspector is satisfied that the records are being maintained and are complete. Other records that are more closely related to health and safety (such as personnel dose-monitoring records and incident reports) should be examined in detail. The type of records that were reviewed and the time periods covered by these records should be noted in the appropriate "Basis for Findings" section(s) of the inspection procedures.

Retain a copy of each pertinent record that is needed to substantiate an inspection finding, such as a violation. Those copies shall be attached to the inspection procedures or, when applicable, to a written inspection report. When an inspector identifies an apparent violation, he/she should gather copies from the licensee, while onsite, of all records that are needed to support the apparent violation. In general, inspectors should use caution before retaining copies of licensee documents, unless they are needed to support apparent violations; expedite the inspection (e.g., licensee materials inventories); or make the licensing file more complete. In all cases where licensee documents are retained beyond the inspection, follow the requirements of IMC 0620. Especially ensure that the licensee understands the retained record will become publicly available, and give the licensee the opportunity to request withholding of the information, pursuant to the requirements of 10 CFR 2.790(b)(1).

The inspector should keep the licensee apprised of the inspection findings throughout the course of the inspection and not wait until the exit meeting.

Whenever possible the inspector should keep NRC management informed of significant findings (e.g., safety hazards, willful violations,

and other potential escalated enforcement issues), identified during the course of the inspection.

03.01 Preparation. Before the inspection, the inspector should do the following:

- Review the licensee's previous inspection history (at a minimum review the past two inspections); the license; and the status of any allegations or incidents. Note the licensee's commitments in response to previous violations, for followup during the inspection;
- Review the Nuclear Materials Events Database (NMED) and regional event/incident logs, event/incident files, and the docket file to determine whether the licensee was involved in any incidents or events. If NRC did receive notification of an incident, review that incident during the inspection and document the licensee's followup in the inspection procedures;
- In the inspection procedures, complete the administrative information, the inspection compliance history, the listing of any license amendments or program changes since the last inspection, and the description of any incidents or events that have occurred since the last inspection;
- Determine the dates that the licensee submitted the most recent financial assurance instrument and decommissioning plan (if applicable);
- Discuss the licensee's program with previous inspector(s) and/or license reviewer(s), as necessary;
- Notify the appropriate State radiation control program personnel;
- Review pending licensing actions;
- Obtain a map of the area and/or directions;
- Make travel arrangements and prepare itinerary;
- Select calibrated instruments and perform source check;
- Select appropriate documents; and
- Select appropriate equipment to take.

In selecting the appropriate documents, the inspector should consider taking the applicable regulations, inspection procedures, generic communications, license, NRC forms, etc.

In selecting the appropriate equipment the inspector should consider the types of licensed materials used by the licensee (sealed sources, tracer material). The equipment may include safety glasses and safety shoes, sample vials, wipes, pocket dosimeters, etc.

During the inspection, focus (among other areas) on whether the licensee is in compliance with any license amendments issued since the last inspection or with any program changes described by the licensee since the last inspection. This requires review of documentation submitted in support of the licensing action, before the inspection. The inspection represents NRC's first opportunity to verify whether the licensee has enacted the most recent changes to the license.

03.02 Entrance Briefing. After arriving on site, the inspector should inform the licensee's management representative of the purpose and scope of the inspection to be performed. This notification should be made as soon as practical after arriving on site. However, in certain instances (i.e., unannounced inspections at temporary field sites) the inspector may choose to inform the licensee of his/her presence on site after initial observations of licensed activities currently in progress.

The purpose of the entrance briefing is to inform licensee management that an inspection is being conducted, and to indicate the tentative schedule for discussing or reviewing selected inspection items with various licensee staff personnel. However, in some instances, the inspector may only need to inform management of NRC's presence on site, and apprise it that an exit briefing will be conducted, at the end of the inspection, which will detail the inspection findings.

This is often an opportune time for the inspector to identify personnel to be interviewed. Scheduling interviews will enhance inspector efficiency and give the licensee the opportunity to have the most knowledgeable individuals present to respond in the areas being inspected.

Certain inspection items involving visual observations and/or records review are better performed unannounced; therefore, these types of items should not be discussed during the entrance briefing.

03.03 General Overview. The inspector will interview the cognizant licensee representatives to gain information concerning organization, scope, and management oversight of the radiation safety program.

a. Organization. The licensee's organizational structure will usually be found in the license application and may involve one or more individuals. Determine the reporting structure among executive management, the RSO, and personnel to whom the RSO may have delegated certain radiation protection functions at field offices, if applicable. Determine whether the RSO has sufficient access to licensee management. Through discussions with licensee staff, the inspector should determine if changes in ownership or staffing have occurred. If the owner or individuals named in the license have changed, determine whether the licensee has submitted appropriate notification to NRC. This information must be provided whenever changes in ownership or personnel are made (except for some licenses where only responsibilities are

defined). Ask licensee management if changes have occurred, or are anticipated, and ask personnel to confirm (to the inspector's satisfaction) that no changes have taken place. If there have been no changes in the organization since the previous inspection, there is no need to pursue this element in further detail.

The inspector should review any organizational change in the RSO position, authorities, responsibilities, and reporting chains. The inspector should be sensitive to changes that reduce the ability of the RSO to resolve concerns or issues related to the safe conduct of the radiation protection program. The inspector should ask licensee management and the RSO about the RSO's authority and about any changes that may impact on the RSO's duties, responsibilities, or effectiveness.

b. Scope of Program. Through discussions with licensee personnel, the inspector can obtain useful information about the types and quantities of material, frequency of use, incidents, temporary job site locations, etc. which can not always be gained by reviewing records alone. This is also an opportunity for the inspector to discern the actual size and scope of the licensee's program, and to determine if significant changes have occurred since the previous inspection.

c. Management Oversight. The inspection is a verification of the licensee's implementation of the required program. In the review to verify implementation, the inspector should pay particular attention to the scope of the program; frequency of licensee audits and the use of qualified auditors; procedures for recording and reporting deficiencies to management; and methods and completion of followup actions by management.

1. RSO - The RSO is the individual, appointed by licensee management and identified on the license, who is responsible for implementing the radiation safety program. The inspector should verify that this individual is knowledgeable about the program, and ensures that activities are being performed in accordance with approved procedures and the regulations. The inspector should verify that, when deficiencies are identified, the RSO has sufficient authority, without prior management approval, to implement corrective actions, including termination of operations that pose a threat to health and safety.

2. Audits - The frequency and scope of audits of the licensed program will vary. However, note that at a minimum, licensees are required by 10 CFR 20.1101(c) to review the radiation safety program content and implementation at least annually. The results of audits should be documented. Examine these records with particular attention to deficiencies identified by the auditors, and note any corrective actions taken as a result of deficiencies found. If no corrective actions

were taken, determine why the licensee disregarded deficiencies identified during audits, and whether the lack of corrective actions caused the licensee to be in non-compliance with regulatory requirements.

Also note that 10 CFR 39.13 requires that the licensee have a program for an annual inspection of the job performance of each logging supervisor to ensure that the Commission's regulations, license requirements, and the licensee's operating and emergency procedures are followed. In addition to reviewing the records of these audits, the inspector should interview logging supervisors to determine depth and detail of these audits.

d. Authorized Users. Authorized users may either be named in the license application or be appointed by the licensee, depending on the type of license issued and/or the wording in the license. For those appointed by the licensee, verify that the authorized user is trained in accordance with the approved criteria and has knowledge commensurate with operational duties.

Determine that the authorized users are personally performing or, if permitted in the license, supervising the authorized work, rather than someone else not named in the license. The level of supervision will depend on the wording in the license conditions or regulations. Some licenses have conditions such as "... used by or under the supervision of ...." For other types of licensees, supervision is defined in the regulations. For those licenses that have the condition "... under the direct supervision of ...," the authorized user must be physically present at the facility, for easy contact or to observe the individual(s) working. Another phrase used is, "... may only be used by ...." Finally, "... under the direct supervision and physical presence of ...." means the authorized user must directly supervise and be present at the work station. Considering the many license condition phrases and regulations, the inspector must exercise judgment to interpret the role of the authorized users.

When the wording of the license condition is "... used by or under the supervision of ....", an authorized user named on the license is considered to be supervising the use of licensed materials when he/she directs personnel in the conduct of operations involving the licensed material. This does not imply that the authorized user must be present at all times during the use of such materials. However, the authorized user/supervisor is responsible for assuring that personnel under his/her supervision have been properly trained and instructed. The authorized user/supervisor is therefore responsible for the supervision of operations involving the use of licensed materials whether he/she is present or absent. When absent, the authorized user should be available for consultation (by telephone) in a reasonable amount of time, commensurate with the need for consultation

and the adequacy of the training of the personnel under the authorized user's supervision.

Note that 10 CFR 39.71 requires that a logging supervisor be physically present at a temporary job-site whenever licensed materials are being handled or are not stored and locked in a vehicle or storage place. Additionally, except when the sources are below ground, or in shipping or storage containers, the well logging supervisor, or other individual designated by the logging supervisor, must maintain direct surveillance of these operations to prevent unauthorized entry into a restricted area.

03.04 Walk-Through Orientation Tour. The inspector should make initial observations of licensed activities to determine that materials are being safely handled and that good health physics practices are followed. The inspector should look at areas of use, storage, and disposal to make an initial assessment of the licensee's ALARA program with regard to facility design, engineering controls, house-keeping practices, etc. The inspector should ensure that observations of activities are documented in the inspection procedures.

03.05 Facilities. Descriptions of the facilities are generally found in the application for a license and subsequent amendments that are usually tied down to a license condition. The actual or as-built facility should be configured to provide safe working areas separated from unrestricted areas and sufficient access controls to preclude unauthorized entry. The inspector should also be aware of potential industrial safety hazards for referral to the U.S. Department of Labor's Occupational Safety and Health Administration.

03.06 Equipment and Instrumentation

a. Equipment and instrumentation should be appropriate to the scope of the licensed program. The inspector should verify that survey instru-mentation has the appropriate range of use, as described in 10 CFR 39.33. The inspector should also verify that the survey instruments are calibrated at the appropriate frequency and checked for operability before use. All survey, sampling, and monitoring instruments should have current calibrations appropriate to the types and energies of radiation to be detected. The technical adequacy of calibration procedures

at facilities that perform their own calibrations should be examined. Facility equipment (source handling tools, injection tools, etc.) should be sufficient to provide safe use, handling, and storage of the materials in use.

b. The inspector should verify that the licensee has an inspection and maintenance program that provides for the visual check of source holders, logging tools, uranium sinker bars, and source-handling tools for defects, before each use. Additionally, the licensee should have an established program for the semiannual visual inspection and maintenance of source holders, logging tools, injection tools, source-handling tools, storage containers, and transport containers to ensure that no physical damage is visible and that the required labeling is legible.

c. Inspectors should verify that licensees have procedures for reporting defects in accordance with 10 CFR Part 21. Procedures for well logging licensees need only address identification and reporting requirements.

03.07 Materials

a. Receipt and Transfer of Licensed Materials. Depending on the size of the licensed program, the package receipt and transfer procedures will be found in the license application. These procedures should be carefully reviewed before an inspection is conducted. By discussions with the licensee, determine if the procedures have been changed or modified. Some changes will require a license amendment, while minor changes (updating telephone numbers, editing procedures for clarity, etc.) may not require NRC approval. Randomly examine procedures used by the licensee to determine if they are in accordance with those identified in the license application. Determine whether these changes warrant a license amendment.

The procedures for picking up, receiving, and opening packages should include how and when packages will be picked up, radiation surveys and wipe tests of packages to be done on receipt, and procedures for opening packages (such as the location in the facility where packages are received, surveyed, and opened). The procedures also should include what actions are to be taken if surveys reveal packages that are contaminated in excess of specified limits, and/or radiation levels that are higher than expected. If packages arrive during the course of an inspection, the inspector should observe, when practical, personnel perform the package receipt surveys.

The inspector should randomly examine records of package surveys and also determine if inventories for each radionuclide are within the license limits. In this regard, records of inventories following receipt and transfer should indicate/demonstrate that the materials on hand at any one time are within the licensee's possession limit. When practical, the records examined should be compared with a physical inventory of materials possessed.

Note that in accordance with 10 CFR 39.37, unless specifically authorized otherwise, well logging licensees are required to conduct a semiannual physical inventory to account for all licensed material received and possessed under the license (records of these inventories may be combined with leak test records for sealed sources). Ensure that the accounting system also considers licensed material held for decay-in-storage, near-term disposal, or transfer to other licensees.

b. Authorized Uses. Authorized uses of byproduct material will be found in the licenses and license applications. Licenses will list the isotopes, physical or chemical forms, and the maximum possession limits. The license will also identify the specific model and manufacturer of sealed sources authorized. The inspector should physically examine the inventory of byproduct material on hand or examine records of receipt and transfer to determine that quantities and forms are as authorized. Additionally, the inspector should verify that the licensee's use of byproduct material is limited to that which is authorized in the license. For example, a licensee may not use sealed sources in a well without a surface casing or inject licensed material into a fresh water aquifer except as specifically authorized by the Commission. Note that sources acquired after July 14, 1989, must meet the requirements in 10 CFR 39.41.

c. Material Security and Control. Examine areas where radioactive materials are used and stored. Storage areas should be locked and have limited and controlled access. Licensed material use areas should be under constant surveillance or physically secured. The licensee should have procedures for access controls. Controls may include a utilization log to indicate when radioactive material is taken from and returned to storage areas. The inspector should verify that adequate controls are in place and working effectively.

Since many well logging licensees also perform perforating jobs involving explosives, the inspector should verify that the licensee stores licensed material in a manner that will minimize danger from explosion or fire.

Verify that documents and records are maintained at field stations and temporary job sites in accordance with 10 CFR 39.73 and 39.75.

d. Inspection and Maintenance. Verify that the licensee implements an adequate inspection and maintenance program [10 CFR 39.43(b)]. Verify that equipment is inspected daily and semiannually as specified in 10
CFR 39.43, and records of defects maintained in accordance with 10
CFR 39.43(b) and Part 21. Verify that removal, repair, opening, drilling, or modification of sources is conducted only by persons specifically authorized (10 CFR 39.43). Check that the licensee conducts inventories on radioactive markers (10 CFR 39.37, 39.47).

e. Abandonment of Sources. Verify the following: (a) licensee has a written agreement with owner/operator for recovery or abandonment of sources (10 CFR 31.15), (b) adequate procedures are in place for handling abandoned sources.

03.08 Training

a. General Training. Certain kinds of training and instruction are found in the regulations; how they are implemented will be found in the license. Discuss with the licensee how, and by whom, training is conducted and the content of the training provided to workers (generally found in the license application).

Verify, pursuant to 10 CFR 19.12, that initial instructions have been given to workers who in the course of employment are likely to receive in a year an occupational dose in excess of 1 mSv (100 mrem). Under the basic instructions, it is management's responsibility to inform the workers of the storage, transfer, or use of radiation and/or radioactive material; health protection problems associated with exposure to radiation and/or radioactive material; precautions or procedures to minimize exposure; and the purposes and functions of protective devices employed. The workers should also be informed of the pertinent provisions of NRC regulations and the license, and the requirement to notify management of conditions observed that may, if not corrected, result in a violation of NRC requirements. Also verify that authorized users and workers understand the mechanism for raising safety concerns and the proper response to warnings made in the event of any unusual occurrence or malfunction that may involve exposure to radiation and/or radioactive material.

Of the training program elements in the license application, training given to authorized users (logging supervisors), and those individuals under the supervision of authorized users (logging assistants), is of primary importance. This training must satisfy the requirements of 10 CFR 39.61. One or more users of radioactive materials should be interviewed to determine that they have received the required training, both in the basic instructions and that specified in the license application. Note that the training should be (and

in most cases is required to be) provided to workers before the individual's performance of licensed activities.

Randomly examine records of training of personnel and attendant examinations or tests (if applicable) to the extent that the inspector is satisfied that the training program is being implemented as required. Where examinations are required, read a few of the examination questions to ascertain that they are indicative of what the worker should know to carry out his/her responsibilities.

The inspector should also observe related activities (i.e., loading of source into tools, leak-testing procedures, maintenance activities) and discuss the radiation safety training received by selected individuals to assure that appropriate training was actually received by these individuals. Authorized users and supervised individuals should understand the radiation protection requirements associated with their assigned activities. The licensee's radiation safety training may include, but is not limited to, demonstrations by cognizant facility personnel, formal lectures, testing, films, and "dry runs" for more complex or hazardous operations.

Note that, at a minimum, the licensee is required to provide safety reviews, as defined in 10 CFR 39.2, for logging supervisors and logging assistants at least once during each calendar year.

b. Operating and Emergency Procedures. Operating and emergency procedures will be found in license applications and may vary from step-by-step procedures to more generalized procedures. The emergency procedures will be approved by NRC and reviewed and updated by the licensee. Revisions to the written operating and emergency procedures, submitted with the license application pursuant to 10 CFR 39.13(c), will require an amendment to the license.

Through interviews with licensee staff, the inspector should verify that personnel have an adequate understanding of the procedures to be followed in the event that the licensee detects evidence that a sealed source has ruptured or licensed materials have caused contamination. Additionally, the inspector should establish that the licensee has adequate procedures in place for the abandonment of irretrievable sources.

Note that 10 CFR 39.15 requires that the licensee have a written agreement with the employing well owner, before logging operations, that identifies the responsibility and procedures to be followed if a sealed source becomes lodged in the well.

03.09 Area Radiation and Contamination Control

a. Area Surveys. The inspector may ask the licensee to spot-check radiation levels in selected areas using the licensee's

own instrumentation. However, the inspector must use NRC's instruments for independent verification of the licensee's measurements. (The inspector's instruments shall be calibrated and source-checked before he/she leaves the regional office.)

If practical, observe how licensees conduct surveys to determine the adequacy of surveys. Also, note the types of instruments used, and whether they are designed and calibrated for the type of radiation being measured. Verify that the survey requirements in 10 CFR 39.67 are met.

The inspector should determine if workers take smears or instrument readings in areas that are readily accessible to facility personnel. Particular attention should be given to bench tops, sinks used for disposal, and storage areas. The survey activities should be at a specified frequency in accordance with the related licensee procedures. The inspector should also perform independent measurements, as needed, to verify licensee assumptions or measurements.

b. Leak Tests. Through discussions with licensee personnel and/or by demonstration of leak test procedures, the inspector should verify that leak tests are performed in accordance with the manufacturer's recommendations and/or license. In accordance with 10 CFR 39.35, the inspector should verify that the wipe of a sealed source is taken from the nearest accessible point to the sealed source where contamination might accumulate.

c. Contamination Control. The inspector should verify that the licensee's survey procedures and counting equipment are adequate to detect and control radionuclide contamination. The inspector may choose to examine the instrument calibration records (efficiency checks, lower limit of detection calculations, etc.); physical location of counting instruments; methods of detection; and wipe sample locations. Additionally, when appropriate, the inspector should consider taking confirmatory wipe samples. Review the licensee's environmental monitoring program, if required.

Note that, in accordance with 10 CFR 39.67, the licensee is required to make radiation surveys of each area where licensed materials are used and stored. In particular, the licensee is required to perform a radiation survey at temporary job sites before and after each subsurface tracer study, to confirm the absence of contamination. Licensees must be authorized to knowingly inject radioactive materials into fresh aquifers.

d. Protective Clothing. If practical, the observation of the protective clothing worn by logging personnel during their work activities should provide the inspector with an acceptable means of reviewing this requirement. Requirements for protective clothing may be found in the licensee's procedures.

03.10 Radiation Protection. Specific guidance is set forth IP 83822, "Radiation Protection."

Section 19.13(b) requires that each licensee shall advise each worker annually of the worker's dose as shown in dose records maintained by the licensee. Verify through discussions with workers and management, and through records review, that the licensee has advised workers of their doses annually. The licensee must advise all workers for whom monitoring is required (and, therefore, dose records are required). The licensee must advise these workers of internal and external doses from routine operations, and doses received during planned special exposures, accidents, and emergencies. The report to the individual must be in writing and must contain all the information required in 10 CFR 19.13(a).

Note that licensees who perform tracer studies may be required by license condition to perform bioassays on those individuals handling unsealed sources. The inspector should verify that the licensee's method and frequency of performing bioassays are sufficiently sensitive to detect the particular radioisotope used.

03.11 Waste Management

a. Waste Storage and Disposal. Verify that the waste is protected from fire and the elements, that package integrity is adequately maintained, that the storage area is properly ventilated, and that adequate controls are in effect to minimize the risk from other hazardous materials. Verify that the licensee has appropriate methods to track the items in storage.

   Inspection effort should be directed at verifying that written procedures have been established in a manner approved by management. The procedures should be readily available to any persons having responsibility for low-level waste classification and preparation for transfer of such wastes to land disposal facilities. As a minimum, verify that, on completion of logging operations using tracer materials, all waste items (i.e., empty vials, gloves, napkins, cans, etc.) are appropriately packaged, labeled, and transported from the job site to the licensee's waste storage location, and that the licensee has appropriate methods to track the items in storage.

   For further inspection guidance, refer to IP 84850, "Radioactive Waste Management-Inspection of Waste Generator Requirements of 10 CFR Part 20 and 10 CFR Part 61."

b. Effluents. If the licensee uses unsealed tracer material, determine if the licensee has possessed sufficient material to exceed 20 percent of 10 CFR Part 20, Appendix B, Table 2, values.

   If the licensee has the potential to exceed these values, determine if the licensee has developed and implemented ALARA effluent goals. If developed, determine if the goals are

sufficiently challenging yet realistic. Also, determine if the licensee has calculated annual doses resulting from air effluents.

If the licensee has developed ALARA effluent goals and calculated doses, determine if the doses: (1) are within the licensee's ALARA goals; (2) exceed the licensee's ALARA goals; or (3) are uncertain because there is insufficient information or basis for determination. Review the licensee's history in meeting ALARA goals, and its corrective actions when the goals were not met.

Review the licensee's practices for releases to sanitary sewers and septic tanks. Also, review the licensee's control over releases to groundwater or aquifers, ash disposal, and air emissions.

For further inspection guidance, refer to IP 87102.

c. Transfer. Ascertain if the licensee has an adequate method of determining that recipients of radioactive wastes are licensed to receive such waste (i.e., licensee obtains a copy of the waste recipient's current license before the transfer).

d. Records. Each licensee is required to maintain records of the disposal of licensed material made under 10 CFR 20.2002-2005, 10 CFR Part 61, and disposal by burial in soil. These records must be retained until the Commission terminates each pertinent license requiring the record. The inspector should review these records to verify that disposals are made in accordance with the applicable regulations, and that records are complete and accurate for each type of disposal.

e. Financial Assurance and Decommissioning. The decommissioning record- keeping requirements are applicable to all materials licensees, including licensees with only sealed sources, and are specified in 10 CFR 30.35(g). These records should contain, among other information: (1) records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site (when contamination remains after cleanup, or when contaminates may have spread to inaccessible areas such as seepage into concrete); (2) as-built drawings and modifications of structures and equipment in restricted areas where radioactive materials are used and/or stored, and locations of possible inaccessible contamination (e.g., buried pipes); (3) except for areas with only non-leaking sealed sources or byproduct materials with half lives of less than 65-days, a single document detailing restricted areas and formerly restricted areas, buried waste, areas requiring decontamination that are outside of restricted areas, and areas outside of restricted areas that, if the license expired, would have to be decontaminated or approved for disposal; and (4) records of the cost estimate performed for a decommissioning funding plan or the amount certified for

decommissioning. This list is not all-inclusive of the information and requirements given in 10 CFR 30.35(g). On all inspections, including inspections of sealed source licensees, the inspector should ensure that the licensee has such decommissioning records, that the records are complete, that they are updated as required, and that the decommissioning records are assembled or referenced in an identified location.

Some licensees may release laboratories or other rooms within a building for unrestricted use, without a license amendment. The release of these areas may fall outside of the reporting requirements in the Decommissioning Timeliness Rule if the licensee continues to conduct other activities in the same building. Inspectors should identify the rooms that have been released since the last inspection and perform confirmatory measurements to verify that radiation and contamination levels are below release limits. Licensee survey records and other documentation should be reviewed to verify that the basis for releasing each room is adequately documented in the licensee's decommissioning records.

Licensees submit financial assurance instruments and/or decommissioning plans for a specific set of conditions. Occasionally, those conditions may change over time and the licensee may not notify NRC. The inspector should be aware of changes, in radiological conditions, while inspecting a licensee's facility, that would necessitate a change in the financial assurance instrument and/or decommissioning plan, especially where the radiological conditions deteriorate and the financial assurance instrument or decommissioning plan may no longer be sufficient. In preparation for the inspection, the inspector should determine the dates that the financial assurance instrument and decommissioning plan (if applicable) were submitted to NRC. Then during the inspection, through observations, discussions with licensee personnel, and records review, the inspector should determine whether the radiological conditions at the licensee's facility have changed since the documents were submitted to NRC. If conditions have changed and the adequacy of the financial assurance instrument and/or decommissioning plan is in doubt, the inspector should immediately contact regional management from the licensee's site to discuss the situation.

Additionally, some licensees are required to maintain decommissioning cost estimates and funding methods on file. If the licensee uses a parent-company guarantee or a self-guarantee as a funding method, the inspector should verify that the licensee has a Certified Public Accountant certify each year that the licensee passes a financial test. The financial test ratios for parent company guarantees and self-guarantees are specified in Section II, Appendix A and Appendix C, respectively, to Part 30.

f. Decommissioning Timeliness. Determine whether the license to conduct a principal activity has expired or been revoked. If

the license remains in effect, determine if the licensee has made a decision to cease principal activities at the site or in any separate building or outdoor area, including burial grounds. Finally, determine if there has been a 24-month duration in which no principal activities have been conducted in such areas. A principal activity is one that is essential to the purpose for which a license was issued or amended, and does not include storage incidental to decontamination or decommissioning. If the licensee meets any of the above conditions, the decommissioning timeliness requirements apply, and the inspector must complete the "Decommissioning Timeliness Inspection Procedures," Attachment A to Appendix A.

The requirements of 10 CFR 30.36, 40.42, and 70.38 do not apply to released rooms within a building where principal activities are still on-going in other parts of the same building. However, in those cases, the inspector should follow the guidance in 03.11.e. of this publication, regarding confirmatory measurements of the released area. Once principal activities have ceased in the entire building, then the decommissioning timeliness requirements will take effect.

The Decommissioning Timeliness Rule became effective on August 15, 1994. In completing Attachment A of the inspection procedures, specific guidance is needed regarding the timing of the notification requirements. If the license has expired or been revoked, or if the licensee has made a decision to permanently cease principal activities, and the licensee provided NRC notification before August 15, 1994, then August 15, 1994, is considered to be the date for initiating the decommissioning calendar (i.e., date of notification). If there has been a 24-month duration in which no principal activities have been conducted at the location before the effective date of the rule, but the licensee did not notify NRC, then the 24-month time period of inactivity is considered to be initiated on August 15, 1994, and the licensee must provide notification to NRC within either 30 or 60 days of August 15, 1996 (depending on whether the licensee requests a delay).

NRC has a stringent enforcement policy with respect to violations of the decommissioning timeliness requirements. Failure to comply with the Decommissioning Timeliness Rule (failures to: (a) notify NRC; (b) meet decommissioning standards; (c) complete decommissioning activities in accordance with regulation or license condition; or (d) meet required decommissioning schedules without adequate justification) may be classified as a Severity Level III violation and may result in consideration of monetary civil penalties or other enforcement actions, as appropriate.

Decommissioning timeliness issues can be complex. For situations where an inspector has questions about the licensee's status and whether the decommissioning timeliness

standards apply, he/she should immediately contact regional management.

For planning and conducting inspections of licensees undergoing decommissioning, refer to IMC 2602, "Decommissioning Inspection Program for Fuel Cycle Facilities and Materials Licensees"; IP 87104, "Decommissioning Inspection Procedure for Materials Licensees"; and the draft Decommissioning Manual Chapter and Handbook.

03.12 Transportation. The inspector should review: the licensee's hazardous material training; packages and associated documentation; vehicles (including placarding, cargo blocking, and bracing, etc.); shipping papers; and any incidents reported to DOT. This is an ideal area for the inspector to make observations of licensee practices. For further inspection guidance, refer to IP 86740, "Inspection of Transportation Activities."

Inspectors should also refer closely to "Hazard Communications for Class 7 (Radioactive) Materials"--the NRC field reference charts on hazard communications for transportation of radioactive materials--which contain references to the new transportation requirements, and are useful field references for determining compliance with the transportation rules on labeling, placarding, shipping papers, and package markings.

03.13 Posting and Labeling. The inspector should determine whether proper caution signs are being used at access points to areas containing licensed materials, radiation areas, and those areas containing airborne radioactive materials. Section 20.1903 provides exceptions to posting caution signs. When applicable, the inspector should also randomly examine signals and alarms to determine operability. The inspector should also randomly observe labeling on packages or other containers to determine that proper information (e.g., isotope, quantity, and date of measurement) is recorded.

Areas with radiation hazards should be conspicuously posted, as required by 10 CFR 20.1902. Depending on the associated hazard, controls may include tape, rope, or structural barriers, to prevent access. If volatile licensed materials are used in an area, such an area should be controlled for airborne contamination. High-radiation areas should be strictly controlled to prevent unauthorized or inadvertent access. Such controls may include, but are not limited to, direct surveillance, locking the high-radiation area, warning lights, and audible alarms. Areas occupied by radiation workers for long periods of time and common-use areas should be controlled in accordance with licensee procedures and be consistent with the licensee's ALARA program.

The inspector should also examine locations where notices to workers are posted. Applicable documents, notices, or forms should be posted in a sufficient number of places to permit individuals engaged in licensed activities to observe them on the way to or from any particular licensed activity location to which the postings would apply.

03.14 Generic Communications of Information. Through discussions with licensee management and the RSO, the inspector should verify that the licensee is receiving the applicable bulletins, information notices, NMSS Licensee Newsletter, etc., and that the information contained in these documents is disseminated to appropriate staff personnel. Also verify that the licensee has taken appropriate action in response to these NRC communications, when a response is required.

03.15 Notifications and Reports. The inspector should determine the licensee's compliance for notifications and reports to the Commission. The licensee may be required to make notifications after loss or theft of material, overexposures, incidents, high-radiation levels, safety-related equipment failure, etc. Additionally, some licensees are required to make annual reports to NRC, and also reports to individuals.

Through discussions with licensee personnel, and by a review of representative records, the inspector should verify that notifications and/or reports were appropriately submitted to NRC.

03.16 Special License Conditions. Some licenses will contain special license conditions that are unique to a particular practice, procedure, or piece of equipment used by the licensee. In these instances, the inspector should verify that the licensee understands the additional requirements, and maintains compliance with the special license conditions. The inspector should also note that some special license conditions will state an exemption to a particular
NRC requirement.

03.17 Independent and Confirmatory Measurements. The inspector should perform independent and confirmatory measurements in restricted, controlled, and unrestricted areas of the licensee's facility. Independent measurements should be performed on all inspections, unless exceptional circumstances make it impossible to perform the measurements (e.g., inspector's detection equipment malfunctions during an inspection trip). Measurements of dose rates at the boundaries of the restricted areas should be performed at the surfaces of the most accessible planes. Examples of measurements that may be performed include area radiation surveys, wipe samples, soil samples, leak tests, air flow measurements, etc. These measurements should be taken in licensed material use areas, storage areas, effluent release points, etc. Confirmatory measurements are those whereby the inspector compares his/her measurements with those of the licensee's. Independent measurements are those performed by the inspector independently of the licensee's measurements. To perform the independent or confirmatory measurement, use NRC radiation detection equipment calibrated at least as frequently as required for the licensee being inspected. For well logging licensees, radiation survey instruments must be calibrated at intervals not to exceed 6 months, after servicing, and according to the requirements in 10
CFR 39.33.

03.18 Year-2000 Issues. Verifying that the licensee has reviewed its computer software to ensure that any potential year-2000

problems have been identified and corrected can be accomplished, in part, by covering the following points: (a) confirm that the licensee received Information Notice 96-70, “Year 2000 Effect on Computer System Software,” and Information Notice 97-61, “U. S. Department of Health and Human Services Letter to Medical Device Manufacturers, on the Year 2000 Problem”; (b) inform the licensee of the NRC list server on the year-2000 problem, and encourage its use in sharing any identified problems and solutions; (c) determine whether the licensee has identified any potential problems, and if so, taken corrective action. (Note that if information related to year-2000 licensee-identified problems and associated corrections is obtained during the inspection, the inspector is to convey it to the NMSS Year-2000 Coordinator.)

03.19 Exit Meeting. When the inspection is over, there should be an exit meeting with the most senior licensee representative present at the facility. If a senior management representative is unavailable for the exit meeting, the inspector may hold a preliminary exit meeting with appropriate staff on site. However, there must be a formal exit meeting with a senior management representative (and the licensee's RSO, if not present at the preliminary exit meeting) as soon as practical after the inspection. This meeting will usually be held by telephone conference call.

During the exit meeting, the licensee representatives should be told the preliminary inspection findings -- including any negative PEFs, apparent violations of regulatory requirements, safety-related concerns, or unresolved items identified during the inspection -- and the status of any previously identified violations. The licensee must immediately address any significant safety concerns.

If the inspector identifies safety concerns or violations of significant regulatory requirements that affect safe operation of a licensee facility, the licensee must initiate prompt corrective action. The inspector should not leave the site until the licensee fully understands the concern and has initiated corrective action. If the inspector and the licensee disagree over how significantly the concern impacts continued safe operation of the facility, regional management should be notified immediately.

Although deficiencies identified in some areas (e.g., workers' knowledge of the Part 20 requirements) are not always violations, the inspector should bring such deficiencies to the attention of licensee management at the exit meeting and also in the cover letter transmitting the inspection report or notice of violation.

03.20 Post-Inspection Actions. Regional office policy will dictate with whom the inspector will review his or her inspection findings (e.g., the inspector's supervisor), following the guidance in IMC 2800, "Materials Inspection Program." The inspector should discuss the findings in the detail that is commensurate with the scope of the licensee's program. Violations; items of concern (e.g., negative PEFs); and unresolved items should be discussed in sufficient depth for management to make appropriate decisions regarding enforcement actions, referral to other State and Federal

agencies, and decisions on the scheduling of future inspections of the licensee's facility.

If there is separate licensing staff in the Region, the inspector should also discuss inspection findings with licensing staff, particularly the license reviewer(s). This information exchange can be particularly useful if the licensee is having its license renewed or has recently submitted a license amendment request. The inspector should inform licensing staff about how the licensee has addressed (or failed to address) special license amendments or recent licensing actions. Licensing information requested by the licensee should also be discussed with the licensing staff.

Inspectors should be aware that NRC has entered into several MOUs, with other Federal agencies, that outline agreements regarding items such as exchange of information and evidence in criminal proceedings. The inspector should ensure that the exchange of information relevant to inspection activities is made in accordance with the appropriate MOU.

The inspector may report the results of inspections to the licensee either by issuing an NRC Form 591 or a regional office letter to the licensee, following the guidance in IMC 2800. The inspector must also ensure that the findings are documented in the inspection procedures and/or inspection report, in sufficient detail for the reader to determine what requirement was violated, how it was violated, who violated the requirement, and when it was violated. The inspection procedures should not be used as merely a checklist to note areas reviewed. It should be used to describe what procedures or activities were observed and/or demonstrated by the licensee during the inspection, and any items of concern identified that were not cited as a violation of regulatory requirements.

Inspectors may complete the inspection procedures either by hand or electronically. If the inspector is documenting the inspection procedures in electronic format, the sub-items under major sections that are not applicable or not reviewed may be deleted. However, the heading itself (e.g., "Radioactive Waste Management," or "Transportation") should remain in the inspection procedures, and the inspector should enter appropriate remarks about why the section is not applicable or not reviewed.

For further inspection guidance, refer to Section 07.04 of IMC 2800.

87113-04 REFERENCES

A listing of IMCs and IPs applicable to the inspection program for materials licensees can be found in Section 2800-11 of IMC 2800. These documents are to be used as guidelines for inspectors in determining the inspection requirements for operational and radiological safety aspects of various types of licensee activities.

Specific references to regulatory requirements can be found in the "Well Logging Inspection References" Appendix following this IP.

END

Appendices:
A. "Well Logging Inspection Record"
B. "Well Logging Inspection References"

APPENDIX A

WELL LOGGING INSPECTION RECORD

Region ___

Inspection Report No._____ License No. _____

Licensee (Name and Address): Docket No. _____

_____

_____
_____
_____
_____

Licensee Contact: _____ Telephone No. _____

Priority: _____ Program Code: _____

Date of Last Inspection: _____
Date of This Inspection: _____

Type of Inspection:
( ) Announced ( ) Unannounced
( ) Routine ( ) Special
( ) Initial

Next Inspection Date _____ ( ) Normal ( ) Reduced ( ) Extended

Justification for change in normal inspection frequency:

Summary of Findings and Actions:

( ) No violations cited, clear U.S. Nuclear Regulatory Commission (NRC) Form 591 or regional letter issued
( ) Non-cited violations (NCVs)
( ) Violation(s), Form 591 issued
( ) Violation(s), regional letter issued
( ) Followup on previous violations

Inspector(s) _____ Date _____
(Sign Name)

_____
(Print Name)

Approved _____ Date _____
(Sign Name)

_____
(Print Name)

PART I-LICENSE, INSPECTION, INCIDENT/EVENT, AND ENFORCEMENT HISTORY

1. AMENDMENTS AND PROGRAM CHANGES:
(License amendments issued since last inspection, or program changes noted in the license)

AMENDMENT #	DATE	SUBJECT

2. INSPECTION AND ENFORCEMENT HISTORY:
(Unresolved issues; previous and repeat violations; Confirmatory Action Letters; and orders)

3. INCIDENT/EVENT HISTORY:
(List any incidents or events reported to NRC since the last inspection. Citing "None" indicates that regional event logs, event files, and the licensing file have no evidence of any incidents or events since the last inspection.)

PART II - INSPECTION DOCUMENTATION

* References that correspond to each inspection documentation topic are in Inspection Procedure 87113, Appendix B, “Well Logging Inspection References.”

The inspection documentation part is to be used by the inspector to assist with the performance of the inspection. Note that not all areas indicated in this part are required to be addressed during each inspection. However, for those areas not covered during the inspection, a notation ("Not Reviewed" or “Not Applicable”) should be made in each section, where applicable.

All areas covered during the inspection should be documented in sufficient detail to describe what activities and procedures were observed and/or demonstrated. In addition, the types of records that were reviewed and the time periods covered by those records should be noted. If the licensee demonstrated any practices at your request, describe those demonstrations. The observations and demonstrations you describe in this report, along with measurements and some records review, should substantiate your inspection findings. Attach copies of all licensee documents and records needed to support violations.

1. ORGANIZATION AND SCOPE OF PROGRAM:
   (Management organization; authorities and responsibilities; authorized location of use; type, quantity, and frequency of byproduct material use; staff size; delegation of RSO functions; reporting chain-of-command; multiple field offices and temporary job sites)

2. MANAGEMENT OVERSIGHT:
   (Management support to radiation safety; RSO; program audits or inspections; authorized individuals; as low as reasonably achievable (ALARA) reviews)

3. FACILITIES:
(Facilities as described; uses; control of access; engineering controls; separation of materials and explosives; containers labeled)

4. EQUIPMENT AND INSTRUMENTATION:
(Appropriate survey instruments; remote-handling tools; shields; gloves; source handlers; uranium sinker bars)

5. MATERIAL USE, CONTROL, AND TRANSFER:
(Materials and uses authorized; security and control of licensed materials; and procedures for receipt and transfer of licensed material; inventories; utilization logs; source design and performance criteria; radioactive markers)

6. INSPECTION AND MAINTENANCE:
(Maintenance program; daily and semiannual inspections; records of defects; source modifications; 10 CFR Part 21 reports)

7. FIELD STATIONS AND TEMPORARY JOB SITES:
(Documents and records at field stations and temporary job sites; operating and emergency procedures; Agreement State licenses)

8. AREA RADIATION SURVEYS AND CONTAMINATION CONTROL:
(Radiological surveys; leak tests; inventories; handling of radioactive materials; records; and public doses)

9. TRAINING AND INSTRUCTIONS TO WORKERS:
(Interviews and observations of routine work; staff knowledge of all routine activities; Parts 19 and 20 requirements; training programs; supervisor, assistant training)

10. ABANDONMENT OF SOURCES:
(Owner/operator agreements; abandonment procedures)

11. RADIATION PROTECTION:
(Radiation protection program with ALARA provisions; external and internal dosimetry; exposure evaluations; dose and survey records and reports; annual notifications to workers; bulletins and other generic communications)

12. RADIOACTIVE WASTE MANAGEMENT:
(Disposal; effluent pathways and control; storage areas; transfer; packaging, control, and tracking procedures; records)

13. DECOMMISSIONING:
(Records relevant to decommissioning; decommissioning plan/schedule; notification requirements; cost estimates; funding methods; financial assurance; and Timeliness Rule requirements; changes in radiological conditions since decommissioning plan was submitted)

14. TRANSPORTATION:
(Quantities and types of licensed material shipped; packaging design requirements; shipping papers; HAZMAT communication procedures; return of sources; procedures for monitoring radiation and contamination levels of packages; HAZMAT training; and records and reports)

15. NOTIFICATIONS AND REPORTS:
(Reporting and followup of theft; loss; incidents; overexposures; abandonment of sources; and radiation exposure reports to individuals.)

16. POSTING AND LABELING:
(Notices; license documents; regulations; bulletins and generic information; area postings; and labeling of containers of licensed material and tools; abandonment of sources; markings)

17. INDEPENDENT AND CONFIRMATORY MEASUREMENTS:
(Areas surveyed and measurements made; comparison of data with licensee's results and regulations; and instrument type and calibration date)

18. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:
(State requirement and how and when licensee violated the requirement. For NCVs, indicate why the violation was not cited. Attach copies of all licensee documents needed to support violations.)

19. PERSONNEL CONTACTED:
[Identify licensee personnel contacted during the inspection (including those individuals contacted by telephone).]

Use the following identification symbols:
Individual(s) present at entrance meeting
* Individual(s) present at exit meeting

20. PERFORMANCE EVALUATION FACTORS (PEFs):

A.	Lack of senior management involvement with the radiation safety program and/or RSO oversight		( ) Y ( ) N
B.	RSO too busy with other assignments		( ) Y ( ) N
C.	Insufficient staffing		( ) Y ( ) N
D.	Radiation Safety Committee fails to meet or functions inadequately	( ) N/A	( ) Y ( ) N
E.	Inadequate consulting services or inadequate audits conducted	( ) N/A	( ) Y ( ) N

Remarks (consider the above assessment and/or other pertinent PEFs with regard to the licensee's oversight of the radiation safety program).

21. SPECIAL CONDITIONS OR ISSUES:

(Special license conditions; year-2000 effects of computer software)

PART III - POST- INSPECTION ACTIVITIES

1. REGIONAL FOLLOWUP ON PEFs:

2. DEBRIEF WITH REGIONAL STAFF:
(Post-inspection communication with supervisor, regional licensing staff, Agreement State Officer; and/or State Liaison Officer)

3. YEAR-2000 ISSUES:
(Convey, to the NMSS Year-2000 Coordinator, all year-2000 licensee-identified problems and corrective actions taken.)

END

APPENDIX A - ATTACHMENT A
DECOMMISSIONING TIMELINESS INSPECTION ATTACHMENT

Licensee: _____

Date of Inspection: _____

1. COMPLIANCE WITH DECOMMISSIONING TIMELINESS RULE
(NOTE: Repeat the answers given in Section 12 of the main body of the inspection procedures. The issues in subsequent sections are dependent on the answers to these questions.)

A. License to conduct a *principal activity* has expired or been revoked. ( ) Y ( ) N

B. Licensee has made a decision to permanently cease *principal activities*, at the entire site, or at any separate buildings, or at any outdoor areas, including inactive burial grounds. ( ) Y ( ) N

C. A 24-month duration has passed in which no *principal activities* have been conducted under the license at the site, or at any separate buildings, or at any outdoor areas, including inactive burial grounds. ( ) Y ( ) N

D. If "Yes" to either A or B or C above:

(1) Identify Site/Bldg/Area: _____

(2) Date of occurrence of A, B, or C: _____

2. NOTIFICATION REQUIREMENTS

A. Licensee has provided written notification to the U.S. Nuclear Regulatory Commission (NRC) within 60 days of the occurrence of 1.A., 1.B., or 1.C., above. ( ) Y ( ) N

If "Yes," date of notification: _____

B. If the licensee is requesting to delay initiation of the decommissioning process, the licensee has provided written notification to NRC within 30 days of occurrence of 1.A., 1.B., or 1.C., above. ( ) N/A ( ) Y ( ) N

If "Yes," date of notification: _____

Basis for Findings:

3. DECOMMISSIONING PLAN/SCHEDULE REQUIREMENTS

A. Licensee is required to submit a decommissioning plan per 10 CFR 30.36(g), 40.42(g), 70.38(g), or 10 CFR Part 72? ( ) Y ( ) N

If "No" to 3.A., answer the following items B. - F.:

B. The decommissioning work scope is covered by current license conditions. ( ) Y ( ) N

C. Decommissioning has been initiated within 60 days of notification to NRC, or NRC has granted a delay. ( ) Y ( ) N

D. If licensee has initiated decommissioning, give date the decommissioning was initiated.

Initiation date: _____

E. If decommissioning has been completed, it was completed within 24 months of notification of NRC. ( ) N/A ( ) Y ( ) N

F. If decommissioning is still scheduled to be completed, it is on schedule to be completed within 24 months of notification to NRC. ( ) N/A ( ) Y ( ) N

Basis for Findings:

If "Yes" to 3.A., answer the following items G. - J.:

G. The decommissioning plan has been submitted to NRC within 12 months of notification. ( ) Y ( ) N

If "Yes," date of submittal: _____

If NRC approved, date of NRC approval: _____

H. Has the licensee submitted an alternative schedule request? ( ) Y ( ) N

If "Yes," date of submittal: _____

I. If decommissioning has been completed, it was completed within 24 months after approval of the decommissioning plan. ( ) N/A ( ) Y ( ) N

J. If decommissioning is still scheduled to be completed, it is on schedule to be completed within 24 months after approval of the decommissioning plan. ( ) N/A ( ) Y ( ) N

Basis for Findings:

Violations identified, if any:

APPENDIX B

WELL LOGGING INSPECTION REFERENCES

1. ORGANIZATION AND SCOPE OF PROGRAM

   License application and applicable license conditions.

2. MANAGEMENT OVERSIGHT

   A. Radiation Safety Officer

      Applicable license conditions.

   B. Audits, Reviews, or Inspections

      10 CFR 20.1101 Radiation protection programs.
      10 CFR 20.2102 Records of radiation protection programs.
      Applicable license conditions.

   C. Use by Authorized Individuals

      Applicable license conditions.

   D. ALARA

      10 CFR 1101 ALARA program.

3. FACILITIES

   A. Facilities as Described

      Applicable license conditions.

   B. Storage

      10 CFR 20.1801 Security of stored material.
      10 CFR 39.31 Labels, security, and transportation precautions.

4. EQUIPMENT AND INSTRUMENTATION

   A. Instruments and Equipment

      10 CFR 39.33 Radiation detection instruments.
      Applicable license conditions.

   B. Sources, Source Holders, Tools

      10 CFR 39.31 Labels, security and transportation precautions.
      10 CFR 39.49 Uranium sinker bars.
      Applicable license conditions.

5. MATERIAL USE, CONTROL, AND TRANSFER

   A. Security and Control

10 CFR 20.1003 Definitions (restricted area and unrestricted area).
10 CFR 20.1801 Security of stored material.
10 CFR 20.1802 Control of material not in storage.
10 CFR 39.71 Security.

B. Receipt and Transfer of Licensed Material

10 CFR 20.1302 Compliance with dose limits for individual members of the public.
10 CFR 20.1906 Procedures for receiving and opening packages.
10 CFR 20.1501 General.
10 CFR 20.2103 Records of surveys.
10 CFR 30.41 Transfer of byproduct material.
10 CFR 30.51 Records of receipt and transfer.

C. Isotope, Chemical Form, Quantity, and Use

10 CFR 39.37 Physical inventory.
10 CFR 39.47 Radioactive markers.
Applicable license conditions.

6. INSPECTION AND MAINTENANCE:

10 CFR 39.43 Inspection, maintenance, and opening of a source or source holder.
10 CFR 21.21 Notification of failure to comply or existence of a defect and its evaluation.
Applicable license conditions.

7. AREA RADIATION SURVEYS AND CONTAMINATION CONTROL

A. Area Surveys

10 CFR 20.1302 Compliance with dose limits for individual members of the public.
10 CFR 20.1501 General.
10 CFR 20.2103 Records of surveys.
10 CFR 20.2107 Records of dose to individual members of the public.
10 CFR 39.67 Radiation surveys.
10 CFR 39.69 Radioactive contamination control.
Applicable license conditions.

B. Leak Tests and Inventories

10 CFR 39.35 Leak testing of sealed sources.
Applicable license conditions.

C. Tracer Studies

10 CFR 39.45 Subsurface tracer studies.
10 CFR 39.51 Use of a sealed source in a well without a surface casing.

8. TRAINING AND INSTRUCTIONS TO WORKERS:

General

10 CFR 19.12	Instruction to workers.
10 CFR 39.61	Training.

Knowledge of 10 CFR Part 20 radiation protection procedures and requirements.
Applicable license conditions.

9. RADIATION PROTECTION

A. Radiation Protection Program

1. Exposure evaluation

10 CFR 20.1501	General.

2. Programs

10 CFR 20.1101	Radiation protection programs.

B. Dosimetry

1. Dose Limits

10 CFR 20.1201	Occupational dose limits for adults.
10 CFR 20.1202	Compliance with requirements for summation of external and internal doses.
10 CFR 20.1207	Occupational dose limits for minors.
10 CFR 20.1208	Doses to an embryo/fetus.

2. External

10 CFR 39.65	Personnel Monitoring
10 CFR 20.1203	Determination of external dose from airborne radioactive material.
10 CFR 20.1501	General.
10 CFR 20.1502	Conditions requiring individual monitoring of external and internal occupational dose.

Applicable license conditions.

3. Internal

10 CFR 39.65	Personnel Monitoring
10 CFR 20.1204	Determination of internal exposure.
10 CFR 20.1502	Conditions requiring individual monitoring of external and internal occupational dose.
10 CFR Part 20, Subpart H	Respiratory protection and controls to restrict internal exposure in restricted areas.

C. Records

10 CFR 20.2102	Records of radiation protection programs.
10 CFR 20.2103	Records of surveys.
10 CFR 20.2104	Determination of prior occupational dose.
10 CFR 20.2106	Records of individual monitoring results.

10. RADIOACTIVE WASTE MANAGEMENT

A. Disposal

10 CFR 30.41	Transfer of byproduct material.
10 CFR 20.1904	Labeling containers.
10 CFR 20.2001	General requirements.
10 CFR 20.2103	Records of surveys.
10 CFR 20.2108	Records of waste disposal.
10 CFR 20.2003	Disposal by release into sanitary sewerage.

B. Effluents

1. General

IP 87102	Maintaining Effluents from Materials Facilities as Low as Is Reasonably Achievable (ALARA).

2. Release to septic tanks

10 CFR 20.1003	Definitions (sanitary sewerage).
10 CFR Part 20, App. B, Table 2	Effluent concentrations.

3. Incineration of waste

10 CFR 20.2004	Treatment or disposal by incineration.

4. Control of air effluents and ashes

10 CFR 20.1201	Occupational dose limits for adults.
10 CFR 20.1301	Dose limits for individual members of the public.
10 CFR 20.1501	General.
10 CFR 20.1701	Use of process or other engineering controls.

Applicable license conditions

C. Waste Management

1. General

10 CFR 20.2001	General requirements.
IP 84850	Radioactive Waste Management - Inspection of Waste Generator Requirements of 10 CFR Part 20 and 10 CFR Part 61.

2. Waste compacted

Applicable license conditions.

3. Waste storage areas

10 CFR 20.1801	Security of stored material.
10 CFR 20.1902	Posting requirements.
10 CFR 20.1904	Labeling containers.

Applicable license conditions.

4. Packaging, Control, and Tracking

10 CFR Part 20, Appendix F	Requirements for Low-Level-Waste Transfer for Disposal at Land Disposal Facilities and Manifests.
10 CFR 20.2006	Transfer for Disposal and Manifests.
10 CFR 61.55	Waste classification.
10 CFR 61.56	Waste characteristics.

5. Transfer

10 CFR Part 20, Appendix F	Requirements for Low-Level Waste Transfer for Disposal at Land Disposal Facilities and Manifests.
10 CFR 20.2001	General requirements.
10 CFR 20.2006	Transfer for disposal and manifests.

6. Records

10 CFR 20.2103	Records of surveys.
10 CFR 20.2108	Records of waste disposal.

11. DECOMMISSIONING

10 CFR 30.36	Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas.
IMC 2602	Decommissioning Inspection Program for Fuel Cycle Facilities and Materials Licensees.
IP 87104	Decommissioning Inspection Procedure for Materials Licensees.
IMC 2605	Decommissioning Procedures for Fuel Cycle and Materials Licensees.
NUREG/BR-0241	NMSS Handbook for Decommissioning Fuel Cycle and Materials Licensees.

12. TRANSPORTATION

A. General

NRC Charts	Hazard Communication for Class 7 (Radioactive) Materials.
10 CFR 71.5	Transportation of licensed material.
TI 2515/133	Implementation of Revised 49 CFR Parts 100-179 and 10 CFR Part 71.

B. Shippers - Requirements for Shipments and Packaging

1. General Requirements

49 CFR Part 173, Subpart I	Class 7 (radioactive) materials.
49 CFR 173.24	General requirements for packagings and packages.
49 CFR 173.448	General transportation requirements.
49 CFR 173.435	Table of A_1 and A_2 values for radionuclides.

2. Transport Quantities

10 CFR 71.4	Definitions.

a. All quantities

10 CFR 71.4	Definitions.
49 CFR 173.410	General design requirements.
49 CFR 173.441	Radiation level limitations.
49 CFR 173.443	Contamination control.
49 CFR 173.475	Quality control requirements prior to each shipment of Class 7 (radioactive) materials.
49 CFR 173.476	Approval of special form Class 7 (radioactive) materials.

b. Limited quantities

49 CFR 173.421	Excepted packages for limited quantities of Class 7 (radioactive) materials.
49 CFR 173.422	Additional requirements for excepted packages containing Class 7 (radioactive) materials.

c. Type A quantities

49 CFR 173.412	Additional design requirements for Type A packages.
49 CFR 173.415	Authorized Type A packages.
49 CFR 178.350	Specification 7A; general packaging, Type A.

d. Type B quantities

IP 86740, Section 2	Inspection of Transportation Activities.

e. LSA material and SCO

49 CFR 173.403	Definitions.
49 CFR 173.427	Transport requirements for low specific activity (LSA) Class 7 (radioactive) materials and surface contaminated objects (SCO).

3. HAZMAT Communication Requirements

49 CFR 172.200-205	Shipping papers.
49 CFR 172.300-338	Marking.
49 CFR 172.400-450	Labeling.
49 CFR 172.500-560	Placarding.
49 CFR 172.600-604	Emergency response information.

C. HAZMAT Training

49 CFR 172.702	Applicability and responsibility for training and testing.
49 CFR 172.704	Training requirements.

D. Transportation by Public Highway

49 CFR 171.15	Immediate notice of certain hazardous materials incidents.
49 CFR 171.16	Detailed hazardous materials incident reports.

49 CFR 177.800	Purpose and scope of this part and responsibility for compliance and training.
49 CFR 177.816	Driver training.
49 CFR 177.842	Loading and unloading: Class 7 (radioactive) material.

13. NOTIFICATIONS AND REPORTS

10 CFR 19.13	Notifications and reports to individuals.
10 CFR 20.2201	Reports of theft or loss of licensed material.
10 CFR 20.2202	Notification of incidents.
10 CFR 20.2203	Reports of exposures, radiation levels, and concentrations of radioactive material exceeding the constraints or limits.
10 CFR 30.50	Reporting requirements.

14. POSTING AND LABELING

10 CFR 19.11	Posting of notices to workers.
10 CFR 21.6	Posting requirements.
10 CFR 20.1902	Posting requirements.
10 CFR 20.1903	Exemptions to posting requirements.
10 CFR 20.1904	Labeling containers.
10 CFR 20.1905	Exemptions to labeling requirements.

15. FIELD STATIONS AND TEMPORARY JOB SITES

A. Documents and Records at Field Stations

10 CFR 39.73 Documents and records required at field stations.
Applicable license conditions.

B. 10 CFR 39.75 Documents and records required at temporary job sites.
Applicable license conditions.

16. ABANDONMENT OF SOURCES

10 CFR 39.15	Agreement with well owner or operator.
10 CFR 39.77	Notification of incidents and lost sources; abandonment procedures for irretrievable sources.

17. INDEPENDENT AND CONFIRMATORY MEASUREMENTS

No references.

18. VIOLATIONS, NON-CITED VIOLATIONS, AND OTHER SAFETY ISSUES

NUREG/BR-0195, Rev.1	NRC Enforcement Manual.
NUREG-1600	General Statement of Policy and Procedures for NRC Enforcement Actions.

19. PERSONNEL CONTACTED

No references.

20. PERFORMANCE EVALUATION FACTORS

IP 87101 Performance Evaluation Factors.

END